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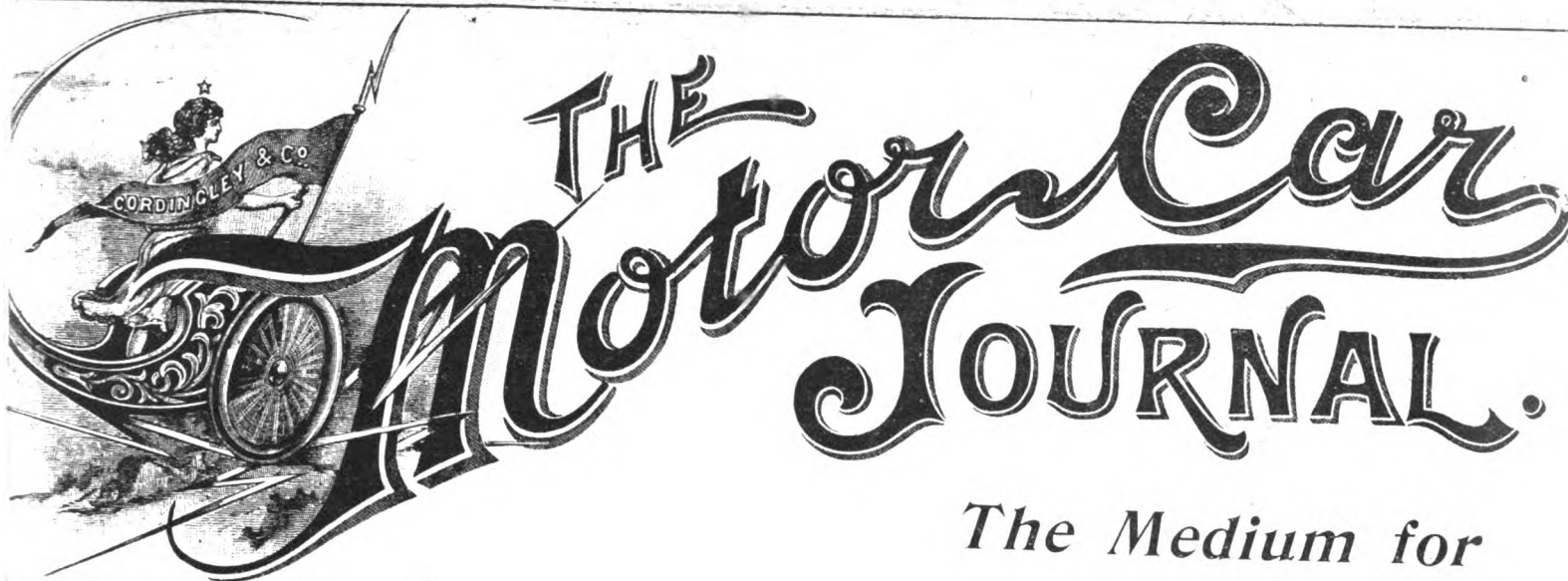
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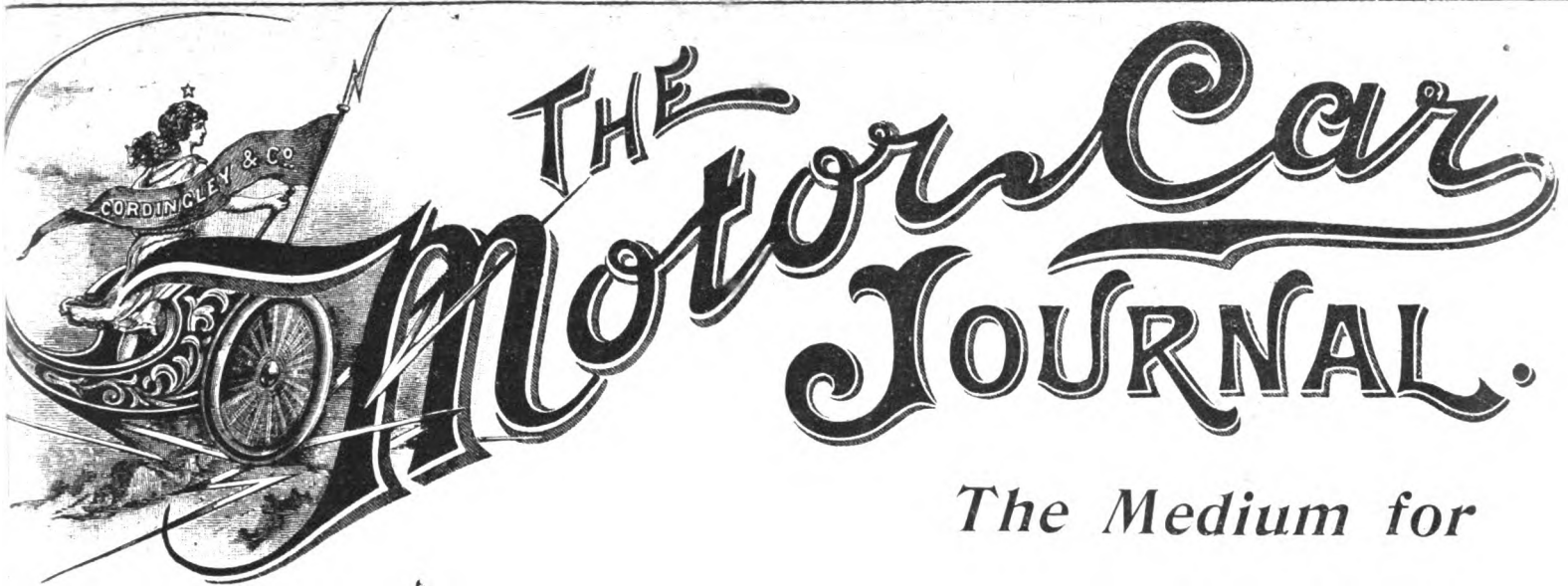
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THE Motor-Car Journal.

Vol. III.]

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COMMENTS.



THE present issue is the 105th number of the *Motor-Car Journal*, and commences the third volume. Since our first bow to the public two years ago the industry has made giant strides, and stands to-day unmistakably upon a firm basis. The *Journal* has marched side by side with the progress of the trade, and has so consolidated its position that at the present time its importance and influence is second to that of no other similar journal in the world.

The Automobile Club.

THE first meeting of the new Club Committee was held on Tuesday last, at which Mr. Roger W. Wallace was appointed Chairman of the Administrative Committee and also of the Club Committee, Standing Committee, and the Club generally. Resolutions recording the services rendered to the Club by Mr. F. R. Simms and Mr. Harrington Moore were adopted, both gentlemen replying. The Hon. John Scott Montagu, M.P., and Mr. Mark Mayhew, L.C.C., were elected vice-chairmen of the Administrative Committee, Mr. Paris Singer as hon. treasurer, and Mr. Harrington Moore, hon. secretary. Quite a number of other business matters were dealt with, various committees elected, while a vote of thanks was accorded to Mr. Frank Butler for serving as hon. treasurer. Correspondence concerning the proposed tour in Ireland was submitted, and the recommendation of the Standing Committee was approved, viz., that the Irish Automobile Club be invited to proceed with their scheme for an automobile tour in Ireland, and should be asked to arrange that the tour should take place in August, and should terminate on such a date as would permit of members participating in it being at Glasgow by the end of August.

Some Automobile Experiences.

FOLLOWING the house dinner of the Automobile Club, on Wednesday next, Mr. Henry Edmunds will open a discussion on "Some Automobile Experiences." The object of the discussion is not to discuss hairbreadth escapes, but rather to take up the various experiences that different members have had with regard to the management and control of their own cars under ordinary running, or under conditions of accident and failure, and expedients resorted to in order to overcome temporary difficulties.

The Protest Renewed.

REGARDING the protest we raised in our last issue as to the excessive speed indulged in by the driver of an unfinished four-cylindere car, we have to state that several further complaints have reached us, our correspondents in each instance stating their impression that the car referred to was the same that passed us in Hyde Park. One writer remarks he was in Piccadilly the other evening about eleven o'clock and the same car passed, the owner, apparently, driving. There were several men on the car, and these were all shouting like firemen. A

great commotion was caused, and we are surprised the police did not take some action in the matter. We have personally made inquiries of owners of four-cylindere vehicles, but have been unable to trace what make the car is. It is of foreign construction, and is neither a Daimler, a Napier, nor a Canello-Durkopp.

Mr. J. S. Critchley Interviewed.

MR. CRITCHLEY, while in America, did not fail to escape the attention of the interviewer, and the result was the appearance of an article three-quarters of a column long, in the *Sun*, descriptive of that gentleman's views on automobilism in America. He considers New York two years behind London in the use of automobiles generally, but the former city is much in advance with its small electric vehicles, and he thinks "some of the developments along that line will soon be imported by us."

The Automobile Club "Garage."

WE learn that Mr. Harrington Moore, the honorary secretary of the Automobile Club, has leased a building next to the Royal Aquarium, Westminster, which he is willing to make into a store for motor-vehicles belonging to members of the Club, provided that twenty-two members take season tickets. A yearly season ticket, which will cost £18, will give a member a right to store his automobile in the Club *garage* at any time, day or night, and will be allotted to the twenty-two members who first apply for them. The *garage*, which is within half a mile of the Club premises, will be open from 8 a.m. to 12 midnight. In addition to being a store for motor-vehicles, arrangements are being made that cars can be washed and repaired on the premises.

Military Motor Vehicles.

THE value of the automobile in war has recently attracted a considerable amount of attention in this country, and it is therefore interesting to observe the extent to which it has been adopted in the French army. Its principal field of utility is evidently considered to be that of heavy transport, for which petrol lorries by Panhard, De Dietrich, etc., have been employed, as well as Scotte steam tractors. This finds a parallel in the employment of traction engines as adopted so successfully in South Africa, and there is little likelihood that for such purposes the traction-engine will find a serious competitor in the self-contained motor-wagon, over which it has many advantages even where good roads are available, while it stands alone in its ability to traverse rough country. Next in importance comes such light transport as is required in the ambulance, field telegraph, and postal services, where a lighter and faster vehicle would seem to have a distinct sphere of utility, which our Gallic neighbours have been the first to recognise. The last class is that of fast cars for the conveyance of officers and orders. No idea appears to be at present entertained of the transport of any considerable number of troops, or even scouts, per automobile, though a proposal was brought forward in the Chamber a few months ago for a census of private cars, to be "commandeered" on emergency.

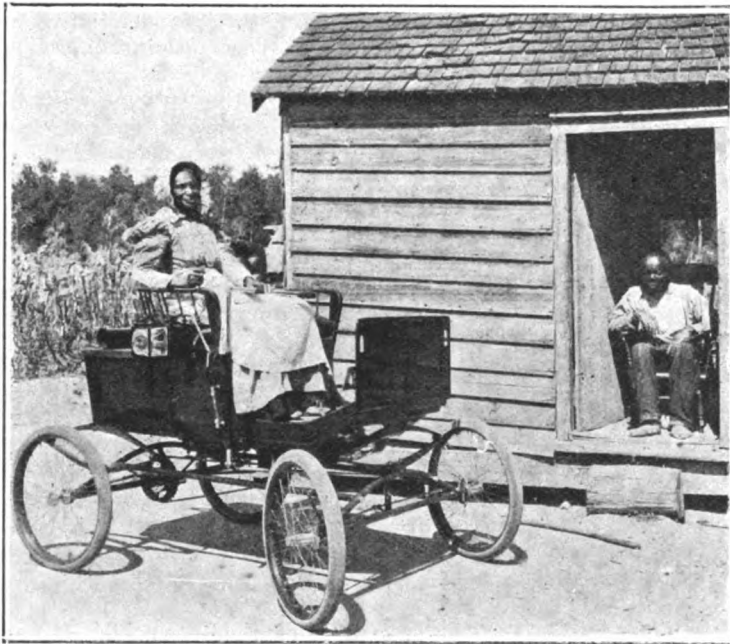
THE GENERAL AUTOMOBILE AGENCY, D. Farman, Man., Garage open day and night, all cars in stock, 100-104, Long Acre, W.C.

The Paris-Roubaix Alcohol Race.

THE organising committee of the Paris-Roubaix alcohol consumption race, under the auspices of the *Auto-Velo*, have met and decided to have the following seven classes:—(1) quadricycles, (2) voituresses up to 250 kilos., (3) light cars of 250 to 400 kilos., (4) cars of 400 to 650 kilos., (5) cars of 650 to 1,000 kilos., (6) big, heavy cars, (7) lorries and delivery vans. The maximum speed for cars is to be 30 kilos. and the minimum 20 kilos. In all the classes there will be a special classification according to the percentage of alcohol used: (a) pure alcohol, (b) mixture containing at least 75 per cent. of alcohol, and (c) mixture containing at least 50 per cent. of alcohol. Competitors are allowed to make the journey in two stages, stopping at Amiens. The start will be given on Easter Sunday and Monday morning.

The Automobile Club of America.

THE new rooms of the Automobile Club of America, at 753, Fifth Avenue, New York, were formally opened on the 16th ult. The new quarters consist of a suite of four rooms on the second floor of the bank building, which occupies the south-east corner of Fifty-eighth Street and



A LOCOMOBILE IN DISMAL SWAMP.

Fifth Avenue. The front or reception room is spacious and is elegantly furnished throughout in characteristic automobile red. The corner window affords a view of the Plaza, the avenue above Fifty-ninth Street, and the entrance to Central Park. A library, done in green, opens off from the reception room. Here bound volumes of periodicals and technical works on the automobile are to be found. In the rear of the reception room and central in the suite is the office, of which Mr. F. R. Tousey, Acting Secretary, is in charge. In the rear is the grill room, quaintly furnished throughout in the Dutch style. A series of lockers is fitted up on one side of this room, each bearing the name of a member. It is the general verdict that the work of the Committee having in charge the work of fitting up the new quarters is above criticism.

Motor-Bicycles.

CONSIDERABLE attention is now being given to the motor-bicycle, an instrument which has long since been desired, but hitherto has scarcely been practicable. The modern bicycle has been cut to the finest limits of weight, and builders scarcely understand any other strains but those which the bicycle can resist. This fact leads us to fear that many of the

motor-bicycles now being put on the market are scarcely calculated to withstand the special stresses set up by attaching a high speed motor to such a delicate machine as a bicycle. In what direction such strains will take effect it is difficult to say, and experience alone will demonstrate the defects to be guarded against; but there is sufficient justification for us to urge on makers the necessity of careful experimenting before putting models in the hands of the public. Motor-bicycles will be driven at a higher speed than ordinary cycles, and any accident due to collapse of the forks or other vital parts may lead to very serious accidents: indeed a few such would be almost sufficient to kill the industry.

The Sultan of Turkey's Motor-Car.

On another page we illustrate the voituress lately supplied to the Sultan of Turkey by the Gesellschaft für Motor und Motorfahrzeugbau (Gudell and Co.), of Aix-la-Chapelle, through the Turkish Ambassador at the German Court. Various accounts are to hand from Constantinople regarding the vehicle, and it seems to be still an open question whether the Sultan has become an automobilist, or merely the owner of a motor-car. One tale is to the effect that he has not cared to trust his body to the vehicle, two officers of the Court being appointed to take drives for him, the Sultan enjoying himself by watching from his window the departure and return of the car. On the other hand, another story which has reached us is that the Sultan, with his strongly developed taste for mechanics, quickly mastered every detail of the machinery, and became so delighted with the means of rapid locomotion which it afforded that he insisted on several members of the Turkish Court also learning the handling of motor-vehicles, which are now permitted to be used in his dominions.

The Road Question.

THE current number of *Pearson's Magazine* contains an interesting account of the efforts made by the United States Government to encourage road-making, the means chiefly relied on being annual practical demonstrations on short stretches of road in each State. One method that has apparently obtained official recognition is the laying of an eight-inch steel plateway, presumably in an otherwise bad road, to suit the average gauge of wagon wheels, a system that would hardly meet with approval here, the more so that its cost is nearly equal to that of a good macadam road, the construction of which is also included in the curriculum. The authorities evidently believe, and doubtless with good reason, that, given the instruction, the level-headed citizens will not be dilatory in putting it into practice. On this side of the Atlantic, however, there has been no lack of expert information disseminated by such bodies as the Roads Improvement Association, but in many places the transition from theory to practice has been delayed by the inertia and conservatism of local authorities. A remarkable improvement in the roads of one county some time back followed the provision of a bicycle for the road surveyor in lieu of the allowance for horse and trap formerly made to him, and with the increasing representation that self-propelled traffic is obtaining on our public bodies there can be little doubt that the road question will receive a greater share of attention than hitherto. It is greatly to be desired, however, that some means of equalising the standard of road construction throughout the country, of course with due consideration for local conditions, could be devised, such as in France is attained by the military supervision of the *Routes Nationales*.

The Estcourt Valve.

SOME time since we mentioned our purchase of a pair of Estcourt valves with a view to testing them on the engine of an M.M.C. Panhard. They were fitted prior to starting on the Christmas tour to Plymouth, but as we had not sufficiently taken into consideration the strength of the head-wind and the state of the roads, we felt somewhat dissatisfied at the way the car was pulling. The valves were

changed at Basingstoke; then again we tried one Estcourt valve at Salisbury; and so travelled to Plymouth. In that interesting country town we "re-ground in" the valves, and afterwards the car pulled famously, enabling us to do in one day a run of over 120 miles. Since then the valves have been in continuous use, and we consider that they are of practical value and considerable assistance in obtaining the maximum of power out of a motor. They may be somewhat slow in "picking up" on changing speeds, but their use is to be recommended.

The Nice Week.

THE automobile season at Nice will present a number of interesting events. The "Grande Semaine," the week of automobile fêtes organised by the Nice Automobile Club, will commence on the 24th inst. and last until the 31st inst. The programme opens with an automobile flower fête on the 24th inst., while on the 25th inst. there are to be two races. The first is a contest on the Nice-Aix-Sénas-Salons-Aix-Nice route, the distance being 460 kilos. It is divided into three categories:—(1) Motor-cycles and voiturettes weighing less than 250 kilos., (2) cars weighing between 250 and 400 kilos., and (3) cars weighing over 400 kilos. The second race is for touring cars, the route being from Nice to Dragnignan and back, a distance of about 198 kilos. On the 26th and 27th inst. the competing vehicles will be on exhibition. The Baron Henri de Rothschild's cup will be competed for on the 28th inst. The race is open to all vehicles weighing more than 600 kilos., and carrying two persons. It is a speed race with flying start, and will be held on the cement track of the Promenade des Anglais; the distance is one kilometre. Only the cars making the distance in less than one minute will be counted. This is a challenge cup, and will be competed for each year at the same period. On Friday, the 29th inst., the annual Nice-La-Turbie race (16 kilos.) will be run off, an illuminated automobile fête taking place the same evening. The week's meeting will be brought to an end on the 31st inst. by a race from Nice to Lorgues and back, a distance of 264 kilos.

"Light, More Light!"

GOETHE'S last exclamation is sympathetically echoed by the nocturnal motorist, whose habits have failed—such is the tardiness of evolutionary processes—to endow him with the enviable faculty of the common or domestic cat. Candle lamps, which by a perverse conservatism are still sometimes supplied with cars, are little more than useless; and even the Dietz lamp, which is undoubtedly convenient, falls far short of what is desirable, though a pair—one with lens front and one with plain glass—serve their purpose if high speeds are not indulged in. But there is little pleasure in driving at night unless these are supplemented by a good acetylene headlight, and acetylene lamps as a rule require more attention than most drivers care to give if they are to perform satisfactorily. Our attention was attracted a short time ago by a brilliantly illuminated establishment at the east end of the Embankment, where an incandescent oil burner of American origin is displayed. The only lamps shown were for fixed lighting, but we were informed that locomotive headlights on the same system were used on the Pennsylvania railroad. It would therefore appear that vibration is no bar to their employment, and as the lamps shown were of 500 candle power and upwards, with a consumption of half a pint of oil an hour, their efficiency is obvious. If a lamp of this kind suitable for motor-cars were introduced, it would undoubtedly be much in demand.

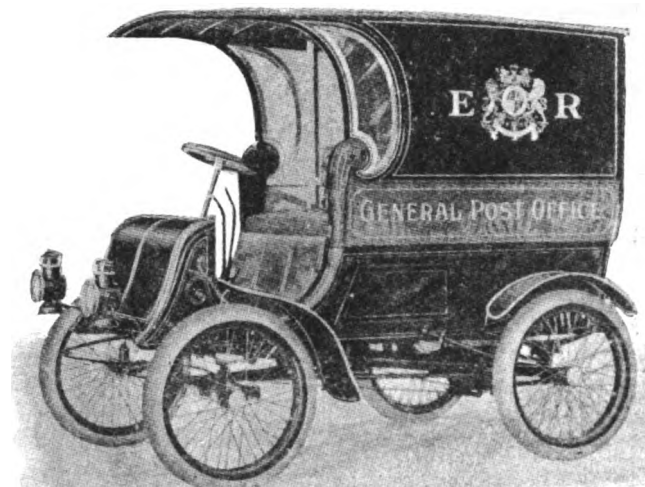
The Advertising Value of the Motor-Car.

THE advertising value of the motor-car was early recognised by a number of progressive business houses. It is true the advertising value of these vehicles was greatest when they were an entire novelty, but even now they are far from common, and hence possess considerable advertising value,

especially in lines of business which are themselves in a developing state, where the use of a motor-car proves its owner to be a man of progressive ideas, who means to be at the head of the procession in his special line.

Another Victory for the Motor-Car in France.

"Is a motor-car inelegant and a nuisance?" is the question which the Fifth Chamber of the Seine Tribunal has lately been discussing, deciding the question in the negative, and in favour of the new locomotion. The appeal for a legal judgment on the point was made by Mme. de la Ville le Roulx, who is a tenant in a house owned by Count de la Rochefoucauld, in which the latter also resides. Having purchased an electric motor-car the lady naturally had the vehicle driven into the courtyard of the building. Thereupon the landlord objected, on the ground that the car incommoded him when brought into the yard by its noise and its appearance, which further spoiled the look of the house. Madame de la Ville le Roulx on the next occasion was prevented from driving into the courtyard of the house in her automobile, and consequently instituted legal proceedings. At the hearing of the case, counsel for Count de la Rochefoucauld described automobiles generally in the above-mentioned depreciatory terms, and stated that by tacit consent between landlord and tenant Mme. de la Ville le Roulx was not entitled to have any other vehicle in the courtyard except a carriage drawn by horses. The Court has, however, rejected the Count's plea on all points, recognising no legal difference in the sense referred to between horseless and horse-drawn vehicles, and has decided that the lady may cause to be driven into the courtyard any motor-car which she may use. The landlord has been directed to give orders to this effect under pain of being mulcted in £1 damages for every breach of the Court's injunction.



THE WINTON DELIVERY VAN SUPPLIED TO THE POSTAL AUTHORITIES AT SYDNEY, N.S.W. (See issue February 23, p. 872.)

"Maximite" and "Motorite."

THE *Daily Mail*, always a fruitful source of knowledge, informs its readers that Mr. Hudson Maxim has caused a profound sensation in New York by announcing that his new high explosive called "Maximite," in conjunction with a substance called "Motorite," applied to an automobile torpedo, is, in the first instance, capable of hurling a projectile at a velocity of 5,000 feet per second, and in the second is capable of driving a vessel under water at the rate of three-quarters of a mile per minute. "Maximite," to our knowledge, is not a new substance, as we have had specimen blocks in our office for the last three years. With regard to the "Motorite," we trust Mr. Hudson Maxim will be more successful with this substance, what

ever it is, than he was with a steam motor-car upon which he spent so much time and others so much money.

The Automobile Club Show.

THE near approach of the forthcoming Automobile Club Exhibition is already arousing curiosity as to the novelties which will be exhibited. Without betraying any secrets we may mention that there will be several new steam cars on view, also a variety of new petrol motors, while the exhibition will be remarkable for the number of new firms entering the trade. Foreign concerns promise, as usual, to be well represented, and altogether the 1901 exhibition will mark an epoch in the British automobile world.

Importing Cars in the United States.

IN a recent issue we referred to two 12 h.p. Panhard cars, which had been shipped from Paris to Mr. J. W. S. Langerman in New York. The arrival of these vehicles on the other side of the Atlantic has been the cause of some excitement. It appears that the cars were entered at the port of New York as second-hand, but the U.S. Customs officials classed them as new, and accordingly subject to regular rates of duty, and "held up" the vehicles until the import duty was paid. The *New York Herald* states that, under the general provisions of the law, new vehicles or those not in possession of the owner one year must pay an import duty of 45 per cent. *ad valorem*. When the person has actually owned and used the automobile in a foreign country more than a year, the vehicle is admitted free. If the car was bought as second-hand within any period less than a year, that fact does not permit of its importation free of duty.

Progress in Philadelphia.

THE rapid increase in the use of motor-cars in Philadelphia is best shown by the statistics which are kept by the officials of Fairmount Park. Mechanical carriages, first admitted in 1900, are now permitted to use all the Park drives with the exception of the Wissahickon Drive, and the West River Drive from Girard Avenue Bridge to the Falls. Every motor-vehicle must display a number on the back, the numbers being issued without charge by the Fairmount Park commission. To date 230 such numbers have been taken out. In his annual report, just issued, Captain Chasteau, of the Park guard, reports for 1900, in comparison with 1899, that there was an increase in the number of automobiles passing in the various entrances of the Park of 6,693.

The Pioneer American Physician Motorist.

THE first physician in the United States to make regular use of a motor-car in his practice is said to be Dr. Carlos C. Booth, of Youngstown, Ohio. In 1895 he had manufactured a petrol car in accordance to his own designs. So far as convenience and economy were concerned he reports that it was a success, but as it was the only one in the city at the time it occasioned such a commotion among the horses that after eighteen months of continuous use the doctor abandoned it and returned to the horse, which he has since used. Several local business men are about to purchase motor-cars, however, and as soon as they do, and he has someone to share the responsibility, the doctor states that he will again purchase one.

Motor-Car Services for Ceylon.

THE rumour that a motor-car service is likely to be established between Negombo and Chilaw is hailed with delight by the Cingalese. The present uncomfortable and unsatisfactory horse coach service between Negombo and Chilaw is admittedly an unavoidable hardship and a necessary evil, because it is the occasion of bodily torture as well as mental preturbation to venturesome travellers. The bullock coach between Chilaw and Puttalam, whether by night or by day, is simply a purgatory on

wheels, and a man must verily be endued with the patience of the Patriarch of Uz who can accomplish the journey without indulging in expletives, liberally garnished with adjectives, and doggedly looking what he cannot adequately express. What a happy day it will be when these means of locomotion are forgotten altogether, or, if remembered at all, but as a dream. The elimination of the coach horse, especially, should be a great epoch in our lives if, simultaneously, suggests a local journalist, beef-steaks and joints became cheaper by coach bullocks being at a discount.

The "Onlooker" Prophetes.

WITHOUT laying claim to more than our fair share of prophetic inspiration, we think we are safe, remarks the *Onlooker*, in hazarding the statement that one of the events for which the opening of the Twentieth Century will be remarkable will be the coming of the motor-car. The motor is, so to speak, in the air; before long it may be in the street. Locomotion by motor is at present in its infancy, but unless our acumen is at fault, it is fast outgrowing the ailments of infancy, and will then grow fast. Hitherto, all machines have been more or less experimental, but every fresh experiment is a step nearer to success. Before long, we see no reason to doubt, mechanical ingenuity will construct a machine that answers to all reasonable demands, and in point of expense will not be only the rich man's toy. When this has happened the motor will become a new factor in social life, the effects of which it would be dangerous to forecast, but which must in any case be far reaching.

Agitation in America.

THERE is evidently trouble brewing in the United States, for now the farmers in many leading States are agitating against the automobile with all the stubbornness and ignorance of the subject of the average British county councillor. The bye-laws of the Madison Council are only typical of the action of many similar bodies, and it is apparently becoming a general thing to restrict the speed in some of the lesser towns to eight miles an hour. Even Mr. Vanderbilt will have to be careful.

Index to Volume II.

WITH this issue is inserted a full and carefully prepared index of the leading events which have appeared in our columns during the past twelve months. Last year we made a special and extra charge for the index; but, recognising from the large demand how desirous our readers were of having the *Journal* bound in volume form, we have decided to distribute the index in the form of a supplement free of cost to our readers. We trust this innovation will be appreciated.

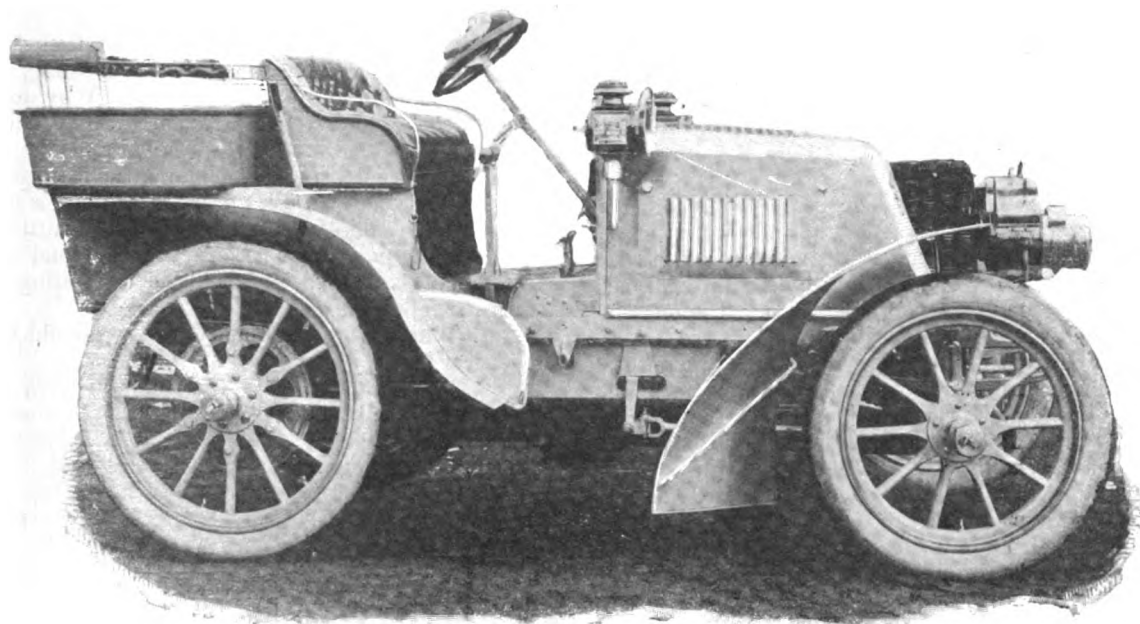
America and Queen Victoria.

VERY remarkable was the feeling inspired in the United States by the death of Queen Victoria, and every mail from America brings evidence of the sympathy of the people of the Republic with those of this country. "The recent news of the death of Queen Victoria," says one of the leading automobile manufacturers of the States, of whose noble reign we, as well as you, are proud, is received by every American with the profoundest grief, and besides the official and public testimonials of condolence returned to your side, we are sure that unuttered sympathy is present in the heart of every American." This is but a typical utterance from many we have received.

THE Union Automobile de France is organising a *rallye papier* for Sunday, the 17th inst.

ONE hundred and eighty-two permits have been granted by the Commissioners allowing the holders to take motor-vehicles through Fairmount Park, Philadelphia. Seventeen doctors and two ladies are recorded in the list as favouring the new locomotion.

The Daimler 20 h.p. Motor-Car.



THE above illustration depicts the 20 h.p. car which the Daimler Motor Co., Ltd., have just delivered to Mr. Talbot Clifton, of Lytham. The four-cylinder engine, which develops about 25 h.p., is fitted with both electric and tube ignition. The vehicle comprises all the latest improvements of the Daimler Company, water-cooling coils being fitted both fore and aft. The body takes the form of a comfortable *tonneau*, while the road wheels are shod with Clipper pneumatic tires. We learn that the Daimler Company have lately supplied a similar car to the Hon. John Scott-Montagu, M.P.

COUNTY COUNCILS AND MOTOR-CARS, ISLE OF WIGHT.

AT a meeting of the Isle of Wight County Council last week Councillor Matthews moved that the Clerk to the Council be requested to draw the attention of the Home Secretary to the way in which motor-cars now traverse the roads, and suggesting that every car should carry a number in a conspicuous place, that the same should be registered, and be obliged to stop when signalled to do so. After the resolution had been seconded, Lieut.-Colonel Hamilton said he did not believe in this grandmotherly legislation, which could only have the effect of crippling a new industry. One would think the drivers of motor-cars were frequently dashing about their roads endangering the lives of the inhabitants, but such was not the case. Councillor Sweetman also joined in the protest against any labels being placed upon the drivers of motor-cars. Councillor F. T. Mew said he could give two instances of reckless motor car driving. On one occasion at Ryde a motor-car cut the fetlock and shoulder joint of a horse he was driving; and again at Parkhurst, whilst driving a young and rather skittish animal down the hill, he held up his hand for the driver to stop, but he drove on, so that he (Mr. Mew) was quite unable to say who the person was that was driving this "instrument of torture." Councillor E. Matthews thought they ought to get all the motor-cars in the island that they could. Councillor Barrington did not think their roads were adapted for these travelling cars. He hoped motorists would not be encouraged to come there unless their cars were numbered. Councillor Williams moved as an amendment that the matter be referred back to committee to further consider, and report to the Council. Councillor Ingram seconded, declaring that no one could make "top nor tail" of the resolution. The amendment was adopted.

THE Erster Automobil Club in Böhmen is the name adopted by a new club just formed in Prague, Bohemia.

MR. HENRY SANDERS, 37, Nicholas Quay, V.O., St. Petersburg, would be glad to receive copies of catalogues from English builders of motor-cars.

THE Grand Duke Nicholas Mikhailovitch has placed an order for a 10-h. p. Mors car for use on his estates in the Caucasus.

SOME experiments with a motor-sleigh were made at Nuremberg, Germany, a few days ago. The vehicle was made by the Union Motor-Fahrzeug Gesellschaft, of that town.

A LECTURE was given on Thursday evening last week in the Institute Small Hall, Wolverton, by Mr. J. A. Roebuck, of Coventry. The lecturer said he wished to speak of the working and mechanism of standard types of motor-cars, and speaking of the motive power, Mr. Roebuck said he considered petrol the best. A number of lantern slides were shown, depicting the various well-known types of motor-cars now running, including Daimler, Benz, etc.

MESSRS. GRAY AND DAVIS, Amesbury, Mass., have introduced a new carriage lamp designed to also light up the water-glass on a steam-car. It is stated that formerly it required three miniature electric lamps or one bicycle lamp to show the water level in the dark. In the new lamp part of the light from the burner is thrown on to a lens in the bottom of the lamp case. This lens is in line with the flame and the water-glass, and throws a beam of light directly on the latter, which is reflected in the usual mirror just inside the dashboard.

THE four conditions which determine a choice of any particular method of transport are distance, expense, time, and convenience, and it is along these lines that the person who is thinking about getting a motor-car must proceed to an ultimate selection.

CORRESPONDENCE.

THE BOLLEE VOITURETTE.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—In reply to "Zero," I may say that I have owned one of these excellent little machines for over three years, and therefore consider myself competent to answer his queries. The running cost is very cheap. Petrol at 1s. 6d. per gallon will last about thirty-five miles to the gallon. One pint of gas engine oil (best) at 4s. per gallon will last seventy miles. Thus the working expenses come to 3s. 6d. per seventy miles, i.e., 3.5d. per mile. This is certainly cheap running. I do not know so cheap a motor-car as the Bollée.

So much for working expenses. The gears are not more noisy than on other gear-driven cars. My top and second speed gears are practically silent. The secret is, do not drive with the belt any tighter than necessary. My back tire does not give me any trouble. It is the second new one I have had. The one on the machine when delivered had seen its best days, so three months after I had a new one fitted. This lasted twelve months, during which time the machine was in continuous operation. The second is the one on now, and is as good as new. Lastly, my engine never gets unduly hot—up hill and down dale. No matter whether it be under the burning heat of a midday sun in August or the ice cold of a January night, it is always the same. Many people will endorse my opinion that the Bollée is one of the best small voiturettes made. I, for my part, say the best. I have a 6 h.p. M.M.C. Panhard and a 3 h.p. De Dion, but I would sooner part with both of them than my Bollée.

Yours truly,

ALAN A. L. HICKMAN.

A SINGLE-SEATED CAR.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—With reference to Mr. Maudslay's letter in your issue of last week, I beg to inform him that some considerable time ago I designed an automobile upon the same lines as he describes. For doctors, travellers, and others this type of carriage is a *sine qua non*, as it is a small and compact one-seated vehicle possessing all the advantages of a larger car, without the drawbacks of a motor-cycle. This type will undoubtedly prove a great boon, and can be produced at a moderate figure.

If your correspondent cares to communicate with me I shall be happy to furnish him with fuller particulars.

Yours truly,

HUGH OWEN.

MOTOR BICYCLES AND FOOTWARMERS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—It is strange to see how persistent is the fallacy that a low centre of gravity diminishes side-slip. A little reflection will show that the higher the c.g., the less inclination is necessary to maintain equilibrium, and the less is the resultant force at right angles to line of progression and parallel with the road. The old ordinary, with a high centre of gravity, was less apt to side-slip than the safety, for this reason, and the same principle applies to motor-bicycles. On the other hand, other things being equal, a driving wheel is more likely to slip than a merely supporting wheel; it is more serious for the front wheel of a safety to slip than the back; therefore it seems that the back wheel should be the driver. Still, I prefer a front-driver with a high centre of gravity to a rear-driver with a low one, and think the position of centre of gravity compensates for the other disadvantages of front-driving. One desirable point in a belt-driven bicycle is a jockey-pulley, loose belts having been nearly the only trouble I have experienced with such machines.

With reference to Mr. Aldred's letter, I use acetate of soda, and pay 7d. per lb. in 7lb. lots. It boils at a higher temperature than most other solutions—e.g., a 60 per cent. solution of nitrate of soda boils at 245 deg., or thereabouts, a 30 per cent. one of salt at 224 deg., a 74 per cent. one of nitrate of potash at

238 deg. I cannot give figures for *hypo*, not having had time to try, but it would be liable to decompose, and perhaps act on the container.

Yours truly,

R. W. BUTTEMER.

WHY DO WE BUY FRENCH CARS?

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I have been reading the letter from Mr. S. F. Edge in your last week's issue under the above heading, and the question has been running in my head ever since, Why does he buy them? This he does not explain in his letter, but devotes himself to an explanation of another car, not French. Considering the opinion Carlyle expressed concerning the majority of the population of this country, I am uncertain whether a sufficient number of wise men could be found to form a committee to decide upon the following points, but if they could be found and would undertake the task, I think it would be interesting to have a report upon the following points:—

1. Which country produces at the present moment the best motor-car?

2. Which motor-car in that country excels in the following important details?—(a) Which costs the most money? (b) Which makes the most noise? (c) Which has the most effectual cooler? (d) Which exhausts the most gas? (e) Which consumes the largest quantity of spirit? (f) Which possesses the biggest trumpet?

Yours truly,

INQUISITOR.

A PUBLIC DENIAL.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—In your last issue we are surprised to note a letter signed by Mr. Friswell, which purports to be a copy of a letter sent to this company. Please note that we have never received such a letter, nor have we negotiated with him. We think you should ask him to produce a copy of this letter in his copy letter book, as it rather looks to us as if he had used your paper in an unfair manner.—Yours faithfully,

For the British Motor Traction Company, Ltd.,

CHAS. OSBORNE,
Secretary.

WE regret to learn of the death of Mr. Edward Delamare-Daboutville, of Fontaine-le-Bourg, Rouen, to whose carburettor reference was made in a recent issue.

THE American Consul in Amsterdam reports that the use of motor vehicles in Holland is becoming general, and that the prospects are good.

IN addition to those already mentioned, the undermentioned companies and firms have also signed the manufacturers' memorial to county councillors: Bayleys, Ltd., Southwark, S.E.; Coborn Motor Company, Baythorne Street, E.; J. Coop, Southport; F. W. Hudllass, Southport; London Motor Company, Ltd., London, W.; Motogear Engineering Company, Cowper Street, E.C.; and the Roadway Autocar Company, Ltd., Berners Street, W.

THE Stanley Manufacturing Company, Boston, Mass., recently sold one of their compound engine and boilers to a lumberman at Moosehead Lake, Me., who mounted it upon a sled to carry logs over the ice. The method of driving was by means of a long screw lengthwise of the sled, with sharpened edge cutting into the ice, and forcing the sled forward at a high speed; at times, it is said, reaching 40 miles an hour.

EXPRESS trains in Italy are not exactly what their name would imply, still they are swift enough to make the following performance of note: Signor Marino Torlonia has just beaten the express train from Rome to Civita Vecchia on his automobile. Signor Torlonia started at the same time as the express, and, although greatly impeded by traffic, travelled the forty-three and one-half miles in time to be at the railway station and greet Commendatore Silvestrelli on his descending from the train at Civita Vecchia.

THE SCOTTISH AUTOMOBILE CLUB.

THE Scottish Automobile Club had a run to Bathgate on Saturday last, the 2nd inst., the members of the Club with their friends from Edinburgh meeting the Glasgow members at this town, which is half-way between the two cities. The larger number of cars and members came from Edinburgh, meeting in St. Andrew's Square at 11.30, and leaving in processional order a few minutes later, making some sensation as they passed along Princes Street, and through the residential quarter of the West End of the city. Professor Dawson Turner, M.D., led the party on his 10 h.p. Delahaye car, having as his passengers Mrs. Dawson Turner and the Rt. Hon. Sir J. H. A. Macdonald, K.C.B., LL.D., F.R.S. (Lord Justice Clerk), President of the Club; next in order came Mr. Norman D. Macdonald, Advocate, Chairman of the Club, on Mr. Outhwaite's 7 h.p. Daimler; while following were Mr. Sleight on his De Dion voiturette with Mr. Paterson, of Aberdeen, as his fellow passenger; Mr. Outhwaite, with Mr. Macleod, on a very handsome 12 h.p. Daimler; the Rossleigh Company's waggonee with a number of passengers, including Mr. Kingsbury, of Glasgow; Mr. John Macdonald, chairman of the Edinburgh Auto-Car Company, on a 6 h.p. Daimler waggonee; while bringing up the rear were two members of the Club on tricycles, who, however, did not continue the run beyond the bounds of the city owing to the dreadful state of the roads.

The members of the Club ran together in the above order by arrangement for the first three miles till the confines of the city were reached at Corstorphine, at which point the Chairman of the Club gave the order to go "as you please," upon which Mr. Outhwaite, on the large Daimler, shot forward, and was soon out of sight. Mr. Dawson Turner was soon seen to be in difficulties, and was left behind doing repairs, which, however, were

only of a temporary nature, as the Delahaye car passed all the others except the large one above mentioned. The roads were in a terrible condition, and in consequence of the deep and sticky mud of the surface the going was very heavy. The weather, considering that it was the beginning of March, was not unfavourable, the sun shining at times, but an east wind was blowing, which made the return journey a somewhat cold run.

On the arrival at the Royal Hotel, Bathgate, several members of the Club from Glasgow were found to have already arrived, most of them having first come by train, in consequence partly of their cars developing defects the day before, but chiefly because of the bad state of the roads. The company sat down to lunch under the presidency of Mr. Norman D. Macdonald, while Mr. John Macdonald acted as croupier. The members of the Club and their friends numbered upwards of thirty-five, with the result that the luncheon had to be served in two relays, as the room would not accommodate the whole company at once. This prevented anything in the shape of a toast list, but in the interval between the lunches, while all the company were in the room, the Lord Justice Clerk briefly proposed "Success to the Scottish Automobile Club," remarking that he was glad to be present at the first run of the new century, and expressing his firm conviction that the new method of locomotion would cause as great a revolution in this century as railways had done in the past; and this not chiefly for purposes of pleasure, but for rapid inter-

communication and the transportation of commodities, to the benefit of perhaps chiefly the poorer classes of the community.

Mr. John Macdonald in a few words proposed his lordship's health, which was cordially pledged. As lunch was in progress Mr. Harper, of Aberdeen, arrived with a large party on his big Daimler dogcart, which owing to some mistake had not arrived at St. Andrew Square in time to start for Bathgate with the other cars. Shortly afterwards the company took the road again in some haste, as rain was threatening, but this happily proved a false alarm.

On the return journey the Lord Justice Clerk travelled on the 12 h.p. Daimler, his place on Dr. Dawson Turner's car being taken by the Chairman of the Club. The latter car, starting first, easily kept in the van, and covered the eighteen miles to Edinburgh in 55 min., in spite of a strong head wind and deep sticky mud, which was in the very worst condition for pneumatic tires. Several of the members from Glasgow found seats on the cars, which were going to Edinburgh, and came through to that city for the pleasure of the run, returning by rail in the evening. On the whole a most enjoyable day was spent.

MESSRS. F. W. TOUSEY and R. E. JARIGE have been elected by the board of governors of the Automobile Club of America as a committee to attend to the erection of sign posts on the main roads leading out of New York city.

LETTERS of incorporation have been granted to the Electric Cab Company, Limited, of Toronto, Canada. The company will establish at once eight or more electric cabs at regular rates, as well as two electric tallyhos for the tourist trade.

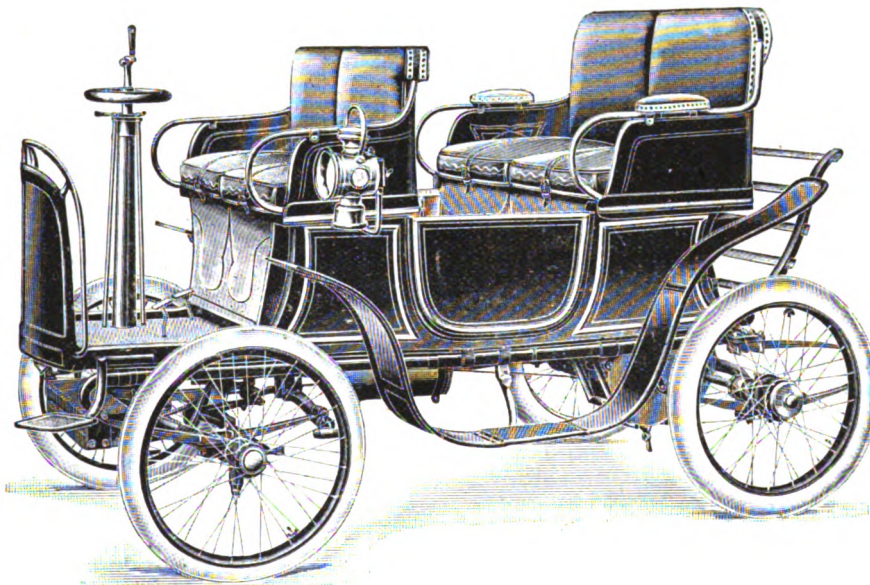
THE German Minister of the Home Department has issued an order to all local authorities to give motor-vehicles and their users all attention and care, to encourage the growing industry, and to induce foreign owners to visit

Germany with such vehicles. The order is a remarkable document, and breathes through every sentence the recognition of the motor-car as an important factor in modern life.

THE Autocar Company, Ardmore, Pa., is preparing to build a petroleum-spirit wagon having a capacity of 3 tons and a maximum speed of 12 miles an hour. The motor will be a four-cylinder vertical engine giving 20 h.p. at 900 revolutions. The company has also under way a special touring car with a 20 h.p. motor.

THE post-office authorities at Columbus, Ohio, are considering a proposition made to them by the Columbus Auto-Cab and Delivery Co., which offers to carry the mails to and from the railway stations, and to make those collections which are now made by horse-wagons for much less money than this work at present costs the department.

A NEW magneto-electrical ignition machine has been put on the market by Messrs. J. Ruymen and Son, of Redkey, Ind., U.S.A., which weighs 9½ lbs. It has a slotted drum armature and a copper segment commutator. The normal speed of the machine is 2,000 revolutions per minute, though, it is claimed, it will give a good spark at 1,500. The magneto is driven off the flywheel of the engine by means of a leather-faced friction wheel, it being mounted pivotally and the friction wheel held against the flywheel through the tension of a light helical spring.



THE CUÉLL VOITURETTE, BUILT FOR THE SULTAN OF TURKEY (see page 2).

The De Dietrich Petroleum-Spirit Motor-Cars.

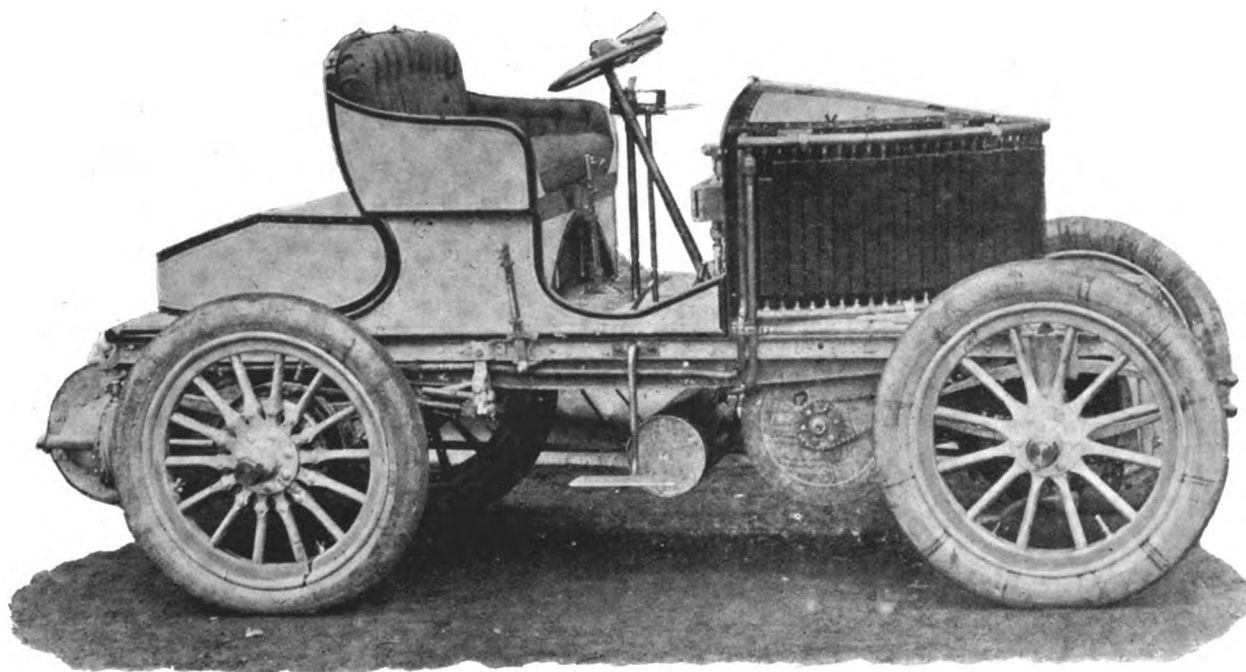


FIG. 1.—THE DE DIETRICH 18 H.P. RACER. (See opposite page.)

AN ENCOUNTER IN THE BOIS.

(From our Paris Correspondent.)

“YOU have made five hundred mètres in fifty-five seconds” was the remark which greeted me the other Sunday upon pulling up my 8 h.p. Panhard, obedient to the terrifying gesticulations of two *agents cyclists*, who, suddenly emerging from their lair just beyond the Jardin d’Acclimatation, had placed themselves right before me as I went spinning over the smooth surface of the *route de Madrid*. In a moment I understood the meaning of the sign made to me by Count de Dion, whom I had met a moment before, and, with visions of cheerless prison cells and an unappetising skilly before my eyes, I regretted not to have immediately interpreted his friendly warning and made my way to Suresnes by another route. A vain regret, for there before me stood the cycling Roberts already fingering voluminous pocket books and sucking official-looking lead pencils in a manner calculated to strike terror into the stoutest heart. Unostentatiously I drew back my lever from the fourth to the second speed notch, and, affecting a tranquillity which I was far from feeling, said, “I’ve made five hundred mètres in fifty-five seconds, have I? Now who told you so, mister policeman?” But never an answer did that austere man vouchsafe, contenting himself with flashing upon me a look of withering scorn, and demanding my papers. Hurt by his lack of amiability, I fumbled nervously among the folds of my goat skin for my *certificat de capacité*, and if I did present him with an unpaid tailor’s bill on pink paper instead of the official document, it was entirely due to my extreme agitation, and not, as he appeared to think, with the object of insulting him. I glanced over my shoulder to see what had become of the cars which had been following me, and I found that they had all turned turtle and fled, not as turtles, but as “teuf-teufs” with the arm of the law behind them. I was alone—figuratively speaking, for we were three in the car and there were some forty spectators on the sidewalk—and I trembled to think of my ultimate fate. In the midst of my forebodings I heard a rush and a rattle, and, looking back, saw some fifty yards astern a 12 h.p. Panhard

coming up at 60 kilomètres to the hour. The policemen saw her as soon as I, and one of them, leaving me, advanced with a haughty air and waved his white *bâton* as a command to stop. But not a bit of it; for, without slackening speed, the driver swerved his car slightly to the right and headed for a side road giving on to the *route de Madrid*. We held our breath, for the agent stuck to his ground manfully, and it appeared as though he must inevitably be run down. But when the car had approached to within a couple of yards of him his courage gave out, and he leaped for his life, leaving behind him his faithful bike. A crash, a rending of metal, a vision of flying spokes, and what had been one of the most superb cycles of M. Lepine’s brigade no longer existed except as a tangled and unrecognisable mass, while its assassin continued his mad course down the route. White with rage and terror its owner returned to where we, the danger passed, were roaring with laughter at the sight of the fragments of the bicycle, and, irritated by our mirth, he gave vent to his feelings by assuring us that “the next I catch will pay for that. I will give him six months.” My examination at length finished, I was allowed to leave, and now—well, now I await with impatience the summons to the courts.

TEN ladies are licensed to operate automobiles through the streets of Chicago.

THE Sahara has now no hidden mysteries for motors, Barons Joseph and Pierre Crawhez having managed to cross from Djelfa to Laghouat.

THE Rev. H. A. Frantz, of Cherryville, Pa., believes he has received a call to the motor-car trade, and will henceforth make petrol cars in place of sermons.

THE City and Suburban Electric Carriage Company, Limited, has been registered with a capital of £500, to carry on the business of cycle, carriage, launch, and flying machine builders, etc.

ON January 28, 1900, the municipal authorities of Chicago issued their first licence permitting its holder to run a motor-vehicle through the streets; on the same day one year later 378 such permits were in force.

THE DE DIETRICH PETROLEUM-SPIRIT MOTOR-CARS.

A TYPE of motor-car which has achieved a large measure of success in France, but which appears to be but little known in this country, is that built to the designs of M. Amedée Bollée, jun., by Messrs. De Dietrich and Co., of Luneville. The firm has turned out over 500 of these cars, and they have won many of the automobile races of the last few years. At the first automobile contest, held in connection with the Paris Exhibition, they carried away the first prize. A description of their special features may, therefore, not be without interest.

The frame (Fig. 3) is built up of channel steel, and is supported on the axles through the intermediary of four semi-elliptic springs. The frame carries the motor and all the mechanism, the disposition of these parts being such that they are entirely below the upper plane of the frame, thus permitting the use of any form of body with the same frame construction. The engine, which is constructed in two sizes, $6\frac{1}{2}$ and 9 h.p., is of the twin cylinder, horizontal type, and is always placed in front of the vehicle. The cylinders, with water jacket and cylinder head, are cast in one piece. There is but a single crank, and the explosions occur, therefore, regularly, one for every revolution. The compression

water, after being cooled in the radiator, returns direct to the cylinder packet. The makers state that with a 9 h.h. motor from twelve to fourteen metres of rubber piping enables a day's run to be made without it being necessary to refill the water tank. A constant level carburettor (Fig. 5) of comparatively simple construction is fitted. The carburettor consists of two parts, the constant level compartment and the vaporising compartment. In the former is located a float F, carrying the point *c* of a

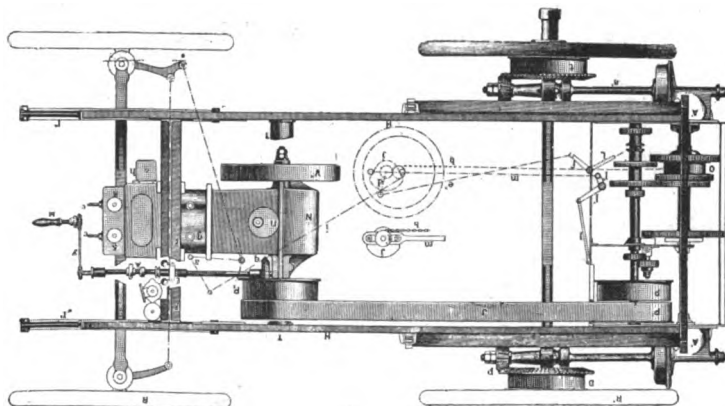


FIG. 3. - PLAN OF DE DIETRICH CAR.

needle *A* valve, which controls the petrol supply. The petrol arrives by the tube *r*, fastened to the cover of the constant level compartment. From the constant level compartment the petrol flows through a tube and the capillary tube *t* to the vaporising chamber. Ordinarily the capillary tube *t* is closed at its upper end by a needle point of the rod *V*. This rod carries a disc, which divides the vaporising compartment into two chambers. The suction of the piston, on the intake stroke, will lift this disc off its seat, and thus simultaneously bring the two chambers of the compartment into connection, and open the capillary tube *t*. The air enters by the opening *A*, and passes upward. The concentration of the air at the orifice of tube *t*, and the stepped surface of the space between the upper and lower halves of the vaporising compartment, are calculated to produce a very complete and uniform vaporisation of the petrol. The mixture leaves by the opening *D*. A screw adjustment, on top of the vaporising compartment, permits the admission of petrol to be regulated.

Coming now to the power-transmitting mechanism, it will be seen from Fig. 3 that while the motor is located in the front portion, the intermediary shafts, of which there are two, are fitted right at the back, behind the rear road wheels. The crank shaft carries at one end a fly-wheel, and at the other a belt pulley. The

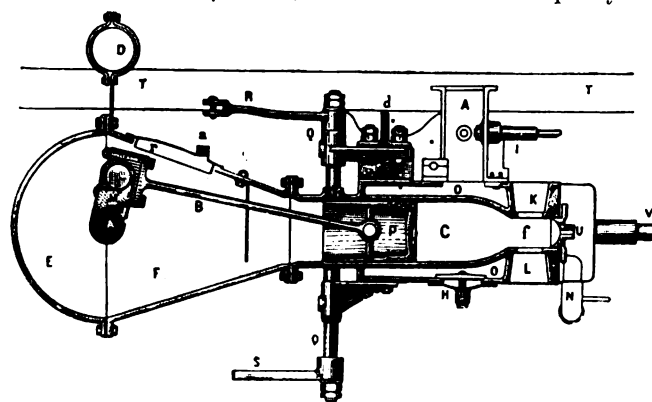


FIG. 4. - SECTION OF DE DIETRICH MOTOR.

space has, as will be seen from Fig. 4, a nearly spherical form, which is claimed to give a maximum efficiency, as the radiating or rather the conducting surface of the space is a minimum. The two exhaust valves are placed on top of the cylinder, and the induction valves below. On a stud *I* rocks a double-armed lever, similar to the one employed in the Peugeot motor. This lever obtains its rocking motion from a crank pin on a longitudinal shaft, geared to the crank-shaft by bevel gears in the ratio of 2:1. The ignition of the charge is effected by means of an incandescent tube. The normal speed of the engine is 650 revolutions per minute. A centrifugal governor, acting on the exhaust valve, is provided. By means of the governor the valve lift can be varied from zero up to about $\frac{1}{8}$ -inch—the maximum. The $6\frac{1}{2}$ -h.p. engine weighs 150 kilogrammes, and the 9 h.p. 180 kilogrammes. The cylinders are provided with a water-jacket, the circulation of water being effected by gravity, no pump being necessary. The cooling water is contained in a special tank, in which it remains cold until entirely consumed; the water is conveyed by gravity to the cylinder jackets by a single pipe of small diameter. The heated water flows to a condenser consisting of a series of pipes, usually arranged in the front part of the car. The

first intermediary shaft carries on one end fast and loose pulleys, and at the other a sleeve on which are mounted a series of gear wheels, this sleeve being controlled by means of a suitable arrangement of levers connected with the handle within easy reach of the driver. The second intermediary shaft is provided with a differential gear, a band brake, as also a series of gear

wheels, corresponding to those on the first intermediary. Four progressing rates of speed and one backward motion are provided. As will be seen from Fig. 3, the usual chains and sprockets are not employed to transmit the power from the second intermediary shaft to the rear road wheel axle, a system of bevel wheels, as shown, being employed instead. We understand, however, that in their latest model a new type of transmission gear has been adopted in substitution of the bevel gear drive.

The method of driving the road wheels through bevel pinions and gears permits of giving them the usual dish employed by

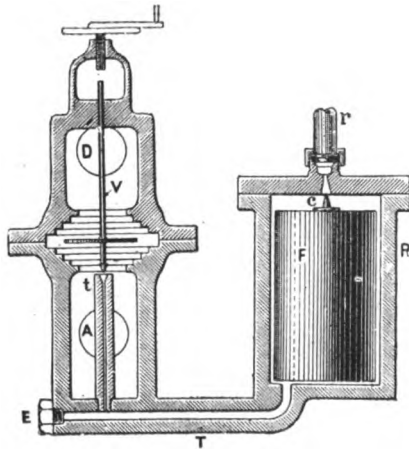


FIG. 5.—SECTION OF DE DIETRICH CARBURETTOR.

carriage builders, which considerably increases their strength. The speed changes are effected by shifting the gear carriage, which slides on the intermediate shaft. In Fig. 6 the high speed gear is shown in mesh. By shifting the sleeve to the left, the second, third and the fourth or low speed are obtained successively. For the reverse motion there is an extra pinion on a shaft, having a bearing at the end of a single arm lever. When it is desired to run backwards, the gear carriage is shifted into a position where all of the gears are out of mesh. The low-speed pinion and gear are then beside each other; the extra pinion, just referred to, has the same breadth as the low-speed pinion and gear together; it is swung around on its pivoting shaft, which is parallel with the shaft on which it

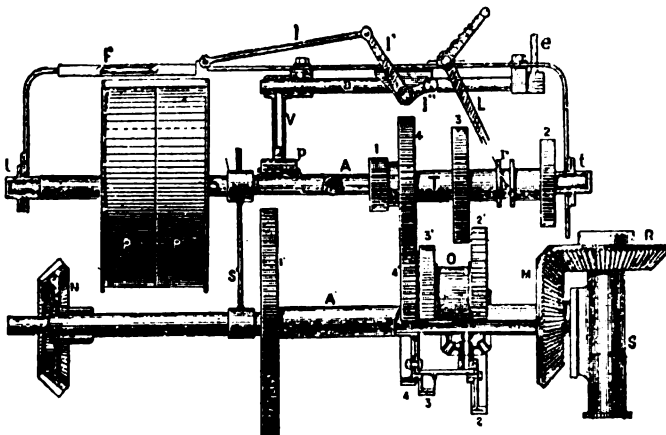


FIG. 6.—THE DE DIETRICH VARIABLE SPEED GEAR.

turns, and connects the slow-speed pinion with the slow-speed gear. The motion obtained in this manner is, of course, reversed. As already mentioned, the differential shaft is connected to the road wheels by means of two shafts running lengthwise of the vehicle, and carrying bevel pinions at their ends. These shafts, which are in two parts connected by a universal joint, pass through the centre of the rear stationary axle. The axle is worked into a loop at this point, into which fastens a long bronze

bearing box. Combination bevel gears and brake drums are bolted to the spokes of the rear road wheels.

Steering is controlled by a horizontal or inclined hand-wheel: all the speed-controlling and steering levers are placed within easy reach of the driver. The speed-changing and hand brake levers, as also the lever controlling the main driving belt, are all so combined that the action of applying the band brake also ships the belt on to the loose pulley, and thus throws the motor out of gear with the power-transmitting mechanism. In addition to the hand brake, brakes of the ordinary type, applied to drums on the rear wheels, are also fitted. The road wheels are of the wooden artillery type shod with solid rubber or pneumatic tires.

GRINDING VALVES.

THE exhaust valves of air-cooled motors of more than 2 h.p. easily become rough, especially if the valve head is of steel. The compression of the motor becomes bad, and the valve has to be ground. In the first place, be careful to mark the valve that has to be ground. Remove the cap, split pin, and spring. Take some No. 000 powdered emery and make a paste of it by mixing it with some petrol; oil should not be used to make the emery paste, as this makes the work of grinding more laborious and gives less satisfactory results. Put some of the paste on the part of the valve bearing on the seat, place the valve on the seat, and by means of a screw-driver blade fastened in a drill crank turn back and forth, being careful not to press too hard on the crank, especially in the beginning. Lift the valve every now and then with the left hand, and do not stop grinding until the emery does not cut any more. Clean the seat and the valve; put on some more of the paste, and recommence the operation until the roughness has completely disappeared. The surface thus obtained should be quite uniform, but not shiny.

If during the grinding one presses too hard on the valve, as I have often seen done, the emery, instead of acting on the whole surface, is forced into certain places. Part of the valve seat becomes free from emery, and we then have two metallic surfaces rubbing one against the other. The seat, which is of cast iron, is the hardest, and one may soon see a circular line of high polish appearing on the valve, which gradually broadens up, and finally disappears. Another part of the valve, either higher or lower, succeeds this one in a little while, and also disappears, the faster the greater the pressure. The same effects are constantly reproduced as long as one keeps on grinding in this way. After some time it may be found that the valve stem abuts against the lifting lever. The stem has then to be filed to obtain the necessary play between the stem and the lever. The thickness of the valves is also reduced, and may be diminished to such a point as to be unable to obviate the escape of the charge on compression.—A. Oulion in *La Locomotion Automobile*.

WORK is being pushed forward on the steam motor-cars that are to be used for the post-office collection service in Boston, U.S.A., and three of them are expected there by the end of this month. A fourth will follow later.

THE *Revue Scientifique* reports the conclusion of the French Generals who used motor cars during the last manoeuvres, and according to this interesting evidence the cars were as successful in hilly districts as on flat roads. The trials proved that good petrol cars can be used under all conditions when steered by intelligent and experienced drivers.

In New York, none seem to take so kindly to the motor-vehicle for delivery purposes as have the florists, the most expensive conveyances of the delivery type being used by them. The Electric Vehicle Company, of Hartford, Conn., have lately built an electrical van for Messrs. Thorley, of Broadway, New York, which will carry a load of 600 lbs. besides the driver and attendant. The running radius of the vehicle is twenty-five miles on one charge of the batteries, and it can attain a speed up to eleven miles per hour.

THE FRENCH MOTOR-CAR EXHIBITION.

(From Our Own Correspondent.)

(Continued from page 878.)

LA COMPAGNIE PARISIENNE DES VOITURES ELECTRIQUES (Systeme Krieger) Boulevard Haussmann, Paris, had on view a number of electrical vehicles, but as some of these were described in a recent issue, I will confine my remarks to the new type of small carriage, known as the "Electrolette," the Company have introduced. This little vehicle weighs 760 kilogs., and the weight of the batteries is 360 kilogs., or about 60 per cent. of the total weight of the carriage, which the maker claims to be the lowest ratio yet obtained in an electric vehicle. The two motors, each of 3 h.p., are suspended in front of the fore axle, and are geared directly on to spur wheels bolted to the spokes of the front wheels. It is said that the placing of the motor in the front facilitates the starting of the vehicle. The capacity of the battery of Fulmen accumulators is from 100 to 110 ampère hours. M. Krieger states that his new car will run nearly seventy miles on a single charge of the battery.

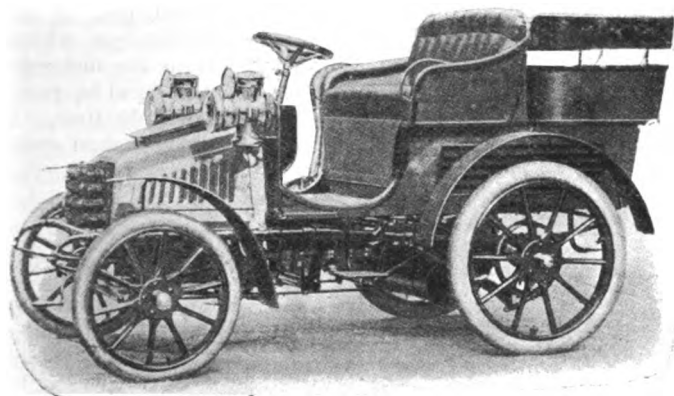


FIG. 1.—THE GOBRON-BRILLIÉ 8-H.P. TONNEAU.
(See issue February 2, page 867.)

A light spider of quite new design was shown by Les Etablissements Cambier, St. Maurice, Lille. The underframe is of tubular construction, the tubes being electrically welded, by which it is claimed that the maximum of strength is obtained. The single cylinder horizontal motor of from 5 to 6 h.p. is placed in front of the vehicle; it is air-cooled, ribs of very large surface extending its whole length, as well as on the cylinder end. The motor runs at 1,200 revolutions, and a belt from a pulley on the motor-shaft operates a fan in front of the motor at three times the speed. The exteriors of the valve chamber are also ribbed. It is claimed that with these precautions the engine will run indefinitely without the temperature rising to any appreciable extent. The transmission is by pulleys and belts to the countershaft, which is geared on to the driving axle through the medium of the change-speed gear, the latter giving four speeds forward and reverse motion. The engine is cut from the transmission by releasing a jockey pulley running on the belt.

M. A. Korn, Boulevard Voltaire, Paris, staged a couple of voiturettes, each propelled by 6 h.p. water-cooled Aster motors, and with ordinary spur wheel transmission.

La Société d'Automobiles de Bergerac (Dordogne) has on view a couple of light carriages—a double phaeton and a spider. They are propelled by 5 h.p. Aster motors, and the transmission consists of the ordinary change-speed gear with a central chain from the countershaft to the rear axle.

The cars of Messrs. Vinot and Deguingaud, Quai National, Puteaux, have already been described in the *Journal*, so that I need only mention that they exhibited two excellent cars—one a *tonneau*, the other a spider. They employ a vertical two-cylinder motor, developing $5\frac{1}{2}$ h.p., and running at from 750 to 800 revolutions per minute. The transmission is by spur wheels and chains. The change-speed gear, which is adapted to give three speeds forward and reverse, is composed of two trains of loose wheels operating on the fixed wheels, and working by

different movements of a hand lever. The lever moves in two guides—an upper and a lower one—and each movement acts upon one or other of two rods connecting with the sliding shafts. The advantage claimed for this arrangement is that the driver has not to graduate the movement of the lever, but pushes it backwards and forwards as far as it will go in the segment for each speed and reversing.

Les Ateliers de Construction Mécanique l'Aster, Boulevard Carnot, Saint Denis (Seine), exhibited several quadricycles fitted with their well-known motors, in which there are several noticeable improvements, among which may be mentioned a change speed gear and a clutch, operated by one lever on the top bar, the forward movement giving the high speed, the middle throwing out the motor, and the back movement gearing on to the low speed. The motor is water-jacketed, and develops $3\frac{1}{2}$ h.p., its weight being from thirty-nine to forty kilogs. The chain and pedals have been suppressed, and foot-rests are fixed instead. The water-tank behind the seat has a capacity of twelve litres, and the petrol tank, carrying six litres, is suspended from the top tube so as to prevent the petrol from being heated by the warm water-tank after the motor has been running some time.

Messrs. Linzeler and Co., Rue de Laborde, Paris, exhibited the Jametel variable-speed gear, which is a modification of the sun and planet system. The firm also make a speciality of water jackets for the combustion chambers of air-cooled De Dion and Aster Motors.

A car fitted with a Bouché two cylinder horizontal motor of 8 h.p. was shown by M. Penelle, of Avenue Theirs, Melun. A special carburettor is employed into which the petrol is admitted by drops on to a hot plate, so that there is never any liquid in the carburettor, and only just sufficient gas for a single charge. The admission of petrol into the carburettor is regulated by the motor itself, according to the rate of running. The speed can be varied between 600 and 1,000 revolutions by advancing the ignition and by throttling the admission into the cylinders. The transmission is effected by a single belt, spur wheels, and chains. All the parts are accessible, and the car appeared to be very strongly made.

La Compagnie des Automobiles et Cycles Hurta, Rue de Villiers, Neuilly-sur-Seine, showed a new 12 h.p. carriage designed to carry four persons. The engine is of two-cylinder type, and the transmission is effected by means of a friction clutch and cog gearing. Four speeds and reverse are provided. The company also exhibited a carriage built upon their old Benz system, and the remainder of the vehicles shown were of the

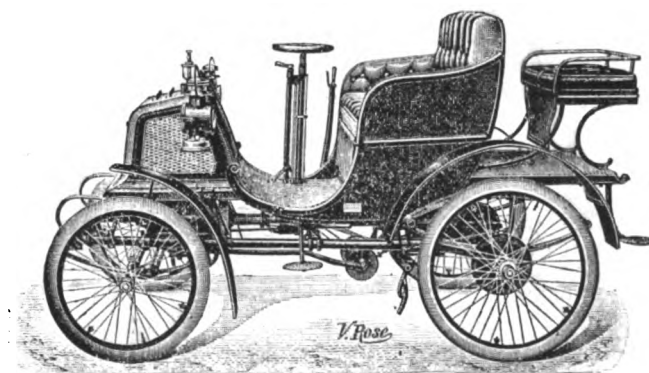


FIG. 2.—THE HURTA SPIDER VOITURETTE.

type which created so much interest at the Champs de Mars section of the Exposition Universelle, carrying De Dion motors. The transmission in these new vehicles is effected by means of a universal jointed shaft and spur wheel gearing. The steering spindle and levers are also arranged in the same way as the De Dion voiturette. The weight of this little car is 380 kilogs.

M. Roch-Brault, Rue Saint-Ferdinand, Paris, exhibited a number of carriages constructed by Dechamps, of Brussels. The newest type is a brake weighing 600 kilogs., and propelled by a $6\frac{1}{2}$ h.p. motor. The other vehicles on this stand comprised a *tonneau* and two light cars.

La Société des Automobiles Reyrol, Levallois-Perret (Seine), exhibited several little cars, the feature of which is claimed to be that there is an entire absence of complication. Power is supplied by a 5 h.p. Aster motor, while the transmission is by a couple of belts—one for the forward drive, giving two speeds, and the

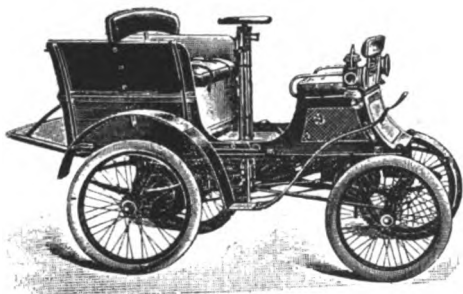


FIG. 3.—THE REYROL 5 H.P. VOITURETTE.

other for reversing—the countershaft being geared directly to the rear axle by spur wheels. The belts are long and run on small pulleys. Steering is controlled by a hand wheel on a vertical standard.

A number of Cyclope two-cylinder motors and a light three-seated car were to be seen on the stand of Messrs. Daniel Augé et Cie., Levallois-Perret (Seine). The motor runs at 750 revolutions a minute, and develops 5 h.p., but the firm are also making motors of 8 h.p. The motor is fixed either horizontally or vertically to suit the requirements of buyers, and transmission is effected by a belt to the countershaft carrying the change speed gear, which is arranged for three speeds forward and a reverse motion. From the countershaft the usual chains and chain wheels convey the power to the rear wheels. Inclined wheel steering is fitted.

La Sirène Cie., Avenue de la Grande Armée, Paris, had on view four of their voiturettes, which are too well known to need a lengthy description at this time. It may be mentioned, however, that they are propelled by a two-cylinder motor, which, running at 800 revolutions a minute, develops 5 h.p. The vehicles are steered by an inclined wheel, the standard of which also carries the various levers. Two brakes are provided, one acting by a pedal on the transmission shaft, and two hand brakes on the rear hubs operated by a lever.

A curious three-wheeled car (Fig. 4.), somewhat on the lines of the Victoria Combination, was shown by J. de Boisse, Rue de Chanzy, Paris. The head tube of the vehicle carries an inverted cone, to which are bolted extensions to form the bed of the motor, and the whole rests on a bridge supported by the axle of the front wheel. The motor is a 2½ h.p. De Dion. Power is transmitted by a chain to a short shaft geared on to a

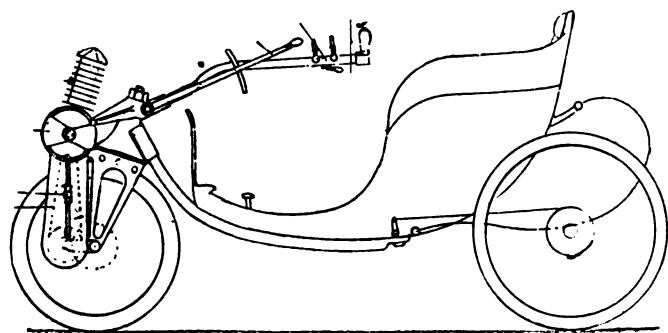


FIG. 4.—THE BOISSE-LEVASSOR VOITURETTE.

pinion on the front wheel hub, a friction clutch and two-speed gear being provided. The whole of the propelling mechanism, of course, moves with the front steering wheel. The voiturette is constructed upon what is known as the Veuve Emile Levassor et J. de Boisse system, and the maker claims that the placing of the machinery over the front wheel facilitates steering and prevents the car from overturning. The vehicle complete weighs about 3 cwt.

Considerable attention was bestowed to the stand of M. R. d'Equevilly, Avenue de Wagram, Paris, who exhibited a petrol motor in which an attempt has been made to neutralise the difference in temperature between the admission and the exhaust by arranging the valves concentric in the centre of the cylinder end, thus forming what is practically a tube which admits the cold gases, while around it escape the products of combustion. It is claimed that the valves cannot get hot while they are kept at something like an even temperature by the cold gases. Another advantage claimed for the arrangement is that the valves are made very large, and the exhaust passes directly out and ensures a rapid and thorough clearance of the combustion chamber. The 4 h.p. motor exhibited, running at 1,500 revolutions per minute, will, it was stated, run a whole day in a closed workshop with no other cooling than that which is provided by the radiating ribs.

There are several interesting features about the cars exhibited by Messrs. Vilain Freres, of Rue de l'Atlas, Paris. The vehicles are all built with independent frames, so that any type of carriage body can be fitted, Fig. 5 showing a *tonneau*. Power is supplied by a two-cylinder horizontal motor which runs at about 600 revolutions per minute, and develops 6 and 8 h.p. The carburettor is of the mechanical type, with admission into the cylinder by tappet and valve upon the hit and miss principle. A useful feature of the motor is the automatic lubricating box, which is placed above the cylinder, and is operated from the motorshaft. Once the lubricator is filled no further attention need be paid to the oiling of the engine parts for a considerable time. The water circulation is maintained upon the thermo-siphon system,

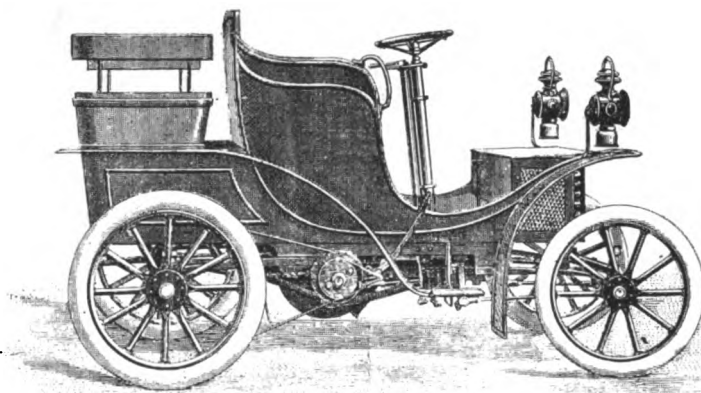


FIG. 5.—THE VILAIN TONNEAU.

no pump being used. The silencer is composed of two round plates bolted together and separated by porous material. The exhaust pipe is connected with the centre of this hollow disc, and the burnt gases are forced out through the fibrous packing. The transmission mechanism is on novel lines; the motorshaft is geared directly on to the countershaft, which carries a drum at each end, inside of which are a couple of friction cones. These cones give the throwing-out motion; two changes of speed and reverse motion, intermediate speeds being obtained by varying the ignition. The drums are connected with pulleys on the rear driving wheels by belts, but, if desired, these can be replaced by pinions and chains. Wire or wooden wheels can be fitted, while the steering is controlled by an inclined hand wheel.

The Société des Automobiles de Riancey, Levallois-Perret (Seine), had on view one of their well-known types of small carriages, propelled by a single-cylinder horizontal motor, placed transversely in the fore-part of the frame. The 5 h.p. engine comprises one cylinder, with two pistons. Three speeds and reverse are provided.

A neat two-seated voiturette was shown by Messrs. Laurent and Co., of Route de Paris, Vierzon (Cher). It is propelled by a two-cylinder vertical motor which, at 900 revolutions per minute, develops 5 h.p. The motor is fitted with electrical and tube ignition. The variable-speed gear, arranged for four speeds and reverse by one lever, is always in mesh, the loose wheels being keyed as desired by clutches. Power is transmitted to the rear axle by a universal jointed shaft. Steering is controlled by an inclined wheel, while the underframe is built of channel steel.

The little car known as "La Plus Simple," and illustrated in the *Journal* some months ago, was shown by M. R. Legros, of Fécamp (Calvados). A $4\frac{1}{2}$ h.p. single cylinder vertical motor in front acts directly on the change speed gear arranged for two speeds, and power is transmitted to the rear axle by a belt. As the motor is thrown out of gear by a clutch, and there is no necessity for shifting the belt on to loose pulleys, the maker claims that it will last indefinitely and give no trouble through slipping, while he further states that the cost of up-keep for such a vehicle is extremely small. M. Legros also exhibited an electric car constructed on the Legros-Meynier system.

A two-seated car was shown by Messrs. Underberg and Co. The frame is of tubular construction, and carries in the fore part a Gaillardet 6 h.p. water-cooled motor. Power is transmitted from the motor to the change-speed gear through a friction clutch, and thence to the differential on the driving axle by a shaft terminating in a bevel gear, which meshes with a corresponding bevel pinion on the rear axle. Four speeds forward and a reverse are provided. The water tank is placed behind the motor, with which it is connected by a short pipe, the water being circulated by a rotary pump. The clutch is actuated by a pedal, which also applies three band brakes—one on the shaft and two on the hubs. The reversing is also done by a pedal, which is under tension by a spring, so that the reversing gear is thrown out directly the foot is raised. The vehicle is suspended on large springs, and its weight, with hood, is between 8 and 9 cwt.

La Société Générale des Voitures Automobiles Otto, Rue Lecourbe, Paris, a concern which has for some time past been experimenting with the application of the Otto engine to road vehicles, made an excellent display of four vehicles of different types, the larger ones being propelled by four-cylinder vertical motors of 20 h.p., and the smaller ones by two-cylinder horizontal engines of 10 h.p. The transmission is by the usual system of fixed and sliding spur wheels and chains. The motors are provided with electrical ignition, but a special magnetic device can be fitted if desired. The frame of the cars is constructed of wood and steel.

Two different types of cars were shown by La Société des Moteurs et Automobiles Charles Richard, of Troyes (Aube)—a small car with a single-cylinder horizontal 4 h.p. motor, and the other, in the form of a *tonneau*, with a two-cylinder motor developing 8 h.p. The transmission is effected by a couple of belts, two speeds and reverse being provided, the intermediate speeds being obtained by regulating the motor. All the machinery is placed low down on a steel frame.

WE learn from New York that a number of prominent members of the Automobile Club of America are arranging to come over to Europe to see the forthcoming Gordon-Bennett race.

A SUM of £400 has just been voted by the Conseil-Général des Etablissements Français en Océanie to enable experiments to be made with motor-omnibuses to be run between Papeete and Taravao, Tahiti.

THE Winton Motor Carriage Company, of Cleveland, U.S.A., have sent us a copy of their latest catalogue, in which full particulars of the 1901 Winton car are given. The list also includes some interesting views of the Winton works.

AT Norwich Bankruptcy Court the examination of Hayes, Thompson, and Kahler, motor-car agents, Prince of Wales Road, Norwich, took place recently. The debtor, Frank Thomas Kahler, for whose appearance the case had been adjourned several times on account of his ill-health, was now present and said he joined the firm in the autumn of 1899. He put into the business £30, which he borrowed, and he was to have a third share of the business, which was said to be a paying concern. He did not know at the time the money was wanted for the payment of an instalment on a car. Since he had been in partnership he had put in about £9 or £10. Debtor's father also lent them £50. Bankrupt received nothing from the business, and knew hardly anything about it. He thought the failure was brought about through want of capital and bad weather. The examination was closed.

HERE AND THERE.



IN answer to "A. C.," Holt's Viameter can be obtained from the Daimler Motor Co., Ltd.

WE understand that the Ariel Motor Company, Limited, of Birmingham, have decided not to proceed with the construction of motor-voitures.

MOTORISTS touring towards Land's End will be glad to know that motor spirit can always be obtained from Mr. Wm. Prockter, of Launceston.

THE Earl of Clonmel is reported to have purchased a "few automobiles" in New York recently, with the object of going in for racing on this side of the Atlantic.

"A MOTOR Field Battery" is the subject of a paper by Major H. A. Bethel, R.F.A., in the January number of the *Journal* of the Royal Artillery Institution.

MR. E. M. C. INSTONE, who for the last eighteen months has been in Paris, has now returned to this country, to take up an appointment in the sales department of the Motor Manufacturing Company.

A LARGE firm of coach and cab proprietors in Sheffield are reported to be turning their attention to motor vehicles; it is stated that they are having several big cars built with a view to utilising them for excursion and other traffic.

THE Committee of the Automobile Club has agreed to grant a sum not exceeding £30 in connection with the appeal against the decision of the City magistrates, "that a motor vehicle must not be left standing unless in charge of a competent mechanic."

FOR some time past we have been cognisant of the fact that a number of electrical parcels vans were being constructed in this country, and we are now pleased to state that the first of these is now running on the streets, being labelled the Electric Parcels Express.

AT the meeting of the Executive Council of the County Council Association held on the 21st ult., the letter of the Automobile Club, which had been circulated to the County Councillors of England and Wales, was considered and it was resolved:—"That the letter do lie on the table."

THE example shown by the Waterford County Council anent the suggested visit of the Automobile Club to Ireland, referred to in our last issue, has been followed by the Waterford Corporation. At their last meeting this body passed a resolution in similar terms to that of the County Council.

WE had an opportunity the other day of going over the new motor-car depot which has just been opened in Long Acre, W.C., by the General Automobile Agency, of which Mr. D. Farman is manager. The extent of the establishment may be gauged from the fact that there is ample room for fully fifty cars. The garage will be open day and night, and arrangements are being made for washing and repairing the vehicles of motorists.

IN order to afford to members of the County Councils of Worcestershire, Warwickshire, Gloucestershire, Herefordshire, Staffordshire, and Shropshire an opportunity of gaining, from personal experience, a knowledge of the control which the driver of an automobile has over his vehicle, the committee of the Automobile Club of Great Britain and Ireland are making arrangements for a demonstration at Worcester on Saturday, the 16th inst., and Monday, the 18th inst. A number of cars will assemble at the County Hall, Worcester, at 11 a.m. and 2 p.m. on these two days.

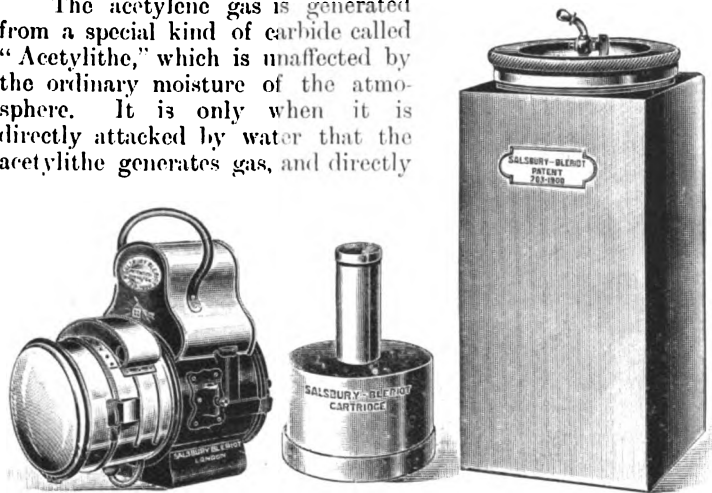
MR. J. CARMICHAEL FERRAL, J.P., Augher Castle, arrived at Tynan from Dublin on Thursday last week with a motor-car in charge of an engineer. After dark a start was made for home, but when a few miles had been covered, a thick mist came down, with the result that the car ran into the water-table between the roadway and the tram lines at Crilly station. The water-table at this place is nearly a foot deep, and it is a miracle that the car did not overturn. The car, after being righted, was abandoned for the night, Mr. Ferral and the *mécanicien* walking to Aughnacloy, where the latter stopped, Mr. Ferral proceeding home by car. The motor-car passed through the town on Friday and attracted much attention.

THE SALSBUURY-BLERIOT MOTOR LAMP.



MESSRS. SALSBUURY AND SON are now marketing the Salsbury-Bleriot lamp for automobile purposes the new system of acetylene gas lighting which has during the past few months been exciting much attention among automobilists and the owners of public vehicles of all classes. It is a light upon a new principle, which appears likely to revolutionise the present system in many important particulars. The lamp (Fig. 1) gives a very powerful light, which is said to be unaffected by the roughest roads, no matter how great the speed at which the car is travelling. It is supplied either to work from a small separate generator or the generator can be contained in the lamp.

The acetylene gas is generated from a special kind of carbide called "Acetylithe," which is unaffected by the ordinary moisture of the atmosphere. It is only when it is directly attacked by water that the acetylithe generates gas, and directly



FIGS. 1 AND 2.

the water is removed from the acetylithe the gas generation ceases. Advantage is taken of this in a very ingenious way. For the purpose of showing how the system works we give in Fig. 3 a section of a large generator on the Salsbury-Bleriot

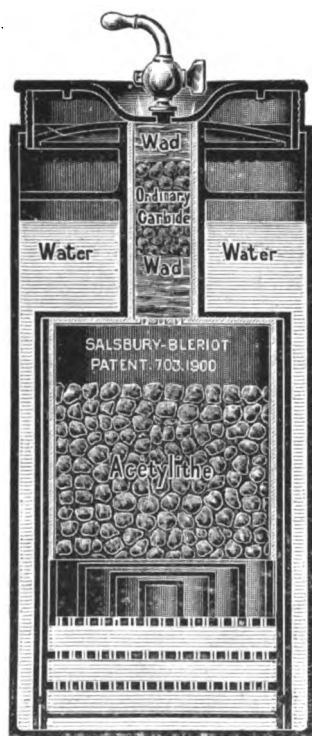


FIG. 3.

principle. The generator, which is the same as contained in the motor lamp, consists of a water container and a charge box. The charge box works on the principle of the diving bell, and it

somewhat resembles a bell in shape. The lower part contains acetylithe, the upper part is the gas chamber and the purifying chamber. The bell is immersed in the water with the gas tap closed, the water container being partly filled with water so as to leave a space at top for the water to rise, as explained later on. The water works up through the perforations at the bottom of the bell and attacks the acetylithe, which, immediately it comes into contact with the water, commences to generate gas, which passes through the bulk of the acetylithe to the gas chamber on top. Very soon gas is generated in a sufficient quantity to exert a pressure greater than the weight of the water. This pressure forces the water back away from the acetylithe, leaving it quite dry, and the water rises outside the bell as it is displaced by the gas pressure. The water being removed from the acetylithe gas ceases to generate. Now the gas tap is turned on and the gas lighted. As the gas is consumed the pressure on the water is relieved, and it returns and rising again attacks the acetylithe. When the pressure of gas again exceeds the weight of the water, it forces the water away from the acetylithe once more, and so the process goes on, automatically maintaining a uniform pressure of gas in the gas chamber.

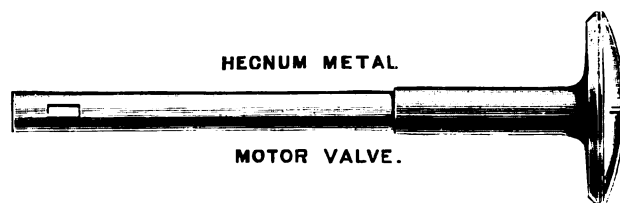
Another ingenious feature of the system is the way the purification of the gas is carried out. It is well known that ordinary carbide will absorb moisture, and that cotton wool arrests small particles of grit. The moisture and grit with which acetylene gas is charged generally acts so as to clog the burners of ordinary acetylene lamps. In the Salsbury-Bleriot the purifying chamber is filled with ordinary carbide between two wads of cotton wool, and the gas passing through these is cleaned of all moisture and impurities, so that the burners cannot get clogged.

Large numbers of motor lamps have already been delivered, and are, we understand, working perfectly satisfactorily, while the generator system has been installed in a number of public vehicles with good results. Fig. 2 shows the outward appearance of the generator and the cartridge, which has only to be dropped into the charge box or bell, and the system is ready for use. Owing to the perfectly automatic action of the system the charge can, it is stated, be left in the lamp for days without deteriorating.

HECNUM METAL.



HECNUM metal, well known in the form of hubs, pedals, etc., on account of its great strength and non-corrosive qualities is beginning to attract considerable attention in the motor industry. Amongst other things it is being introduced in the form of motor valves with marked success. Hecnum appears to withstand



heat and acids better than anything else for this purpose and keeps clean, thereby saving much trouble in grinding-in, qualities that cannot fail to be appreciated. Ignition tubes of Hecnum are also being substituted for platinum with very satisfactory results, and the firm anticipate an important business in both these lines.



ARRANGEMENTS had been made to run off a motor-cycle race near Barcelona, Spain, a few days ago, but at the last moment the governor of the province issued instructions that the race was not to be permitted.

THE Watch Committee of the Eccles Town Council have inspected a motor-car to carry fire-extinguishing apparatus and four or five men for the fire brigade, and have further postponed the consideration of the matter.

THE AUTOMOBILE CLUB'S ANNUAL GENERAL MEETING.



THE annual general meeting of members of the Automobile Club and of the Automobile Proprietary, Ltd., was held at the Club premises on Thursday, the 28th ult., Mr. Roger W. Wallace, K.C., in the chair. The annual report of the Club for 1900, as approved by the Club Committee, and accounts of the "1,000 Miles Trial of 1900," and the accounts and balance-sheet of the Club for the year 1900, as audited by Messrs. Andrew Barr and Co., were submitted.

The annual report showed that the membership at the close of 1900 was 710, as compared with 586 on January 9th of the same year; subsequent additions have increased the total to 756. The report further stated that the Club had been in communication with the Local Government Board with reference to the proposals which had been made to County and Rural Councils as to the imposing of further restrictions on the use of automobiles. An important letter, consisting of twenty-six pages of printed matter, had been sent to 4,412 County Councillors in England and Wales, protesting against these proposals. A warning had been issued by the Club to automobilists concerning the non-compliance with the law as to stopping when signalled to do so by the driver of a restive horse; and a letter on the same subject had been addressed to all County Chief Constables. A sub-committee was appointed to deal with the railway transport of petroleum spirit, and recommendations were made to the Home Office with satisfactory results. Four tours, apart from the 1,000 Miles Trial, had been held, covering a total of 1,196 miles. Three 103-miles trials and trials of electrical vehicles had also been held. The Committee had also approached the War Office with a proposal for the formation of a corps of Automobile Volunteers, and it appeared probable that this corps would be formed. The Club had been successful in getting the tolls for motor-carriages reduced by the authorities of Dulwich College, Durham Bridge, and Maidenhead Bridge. During the present year the most important work of the Club was likely to be directed towards the conversion of those who were seeking to bring about the imposition of further restrictions on the use of motor-vehicles.

In submitting the accounts of the 1,000 Miles Trial, the Chairman pointed out that the trial had not necessitated any call whatever on the funds of the Club. It had been originally estimated that the Club should be paid £250 from the Trial Account for use of offices and the permanent officers of the Club. As a matter of fact the trial account had only paid the Club £133. But against the £117 balance, there was the consideration of the advertisement the Club had obtained by sale and distribution of the programme of the trial, the public functions and the flags throughout England and a part of Scotland. He thought the trial had been the means of establishing the Club. He was glad, at a recent meeting, to hear representatives of manufacturers, who took no part in the administration of the Club, state that they thought that the trial had been the best and cheapest advertisement possible to manufacturers. The accounts of income and expenditure of the Club for 1900 showed a deficit of £70. The report was adopted.

The Budget for 1901 was submitted and adopted, and the Chairman explained that when the Motor Union is organised it would be necessary to pay over to it a sum representing 7s. 6d. per member, and at the same time the Motor Union would relieve the Club of certain expenditure.

The following members were elected as the new Club Committee for the ensuing year:—Mr. Worby Beaumont, Mr. W. C. Bersey, Mr. Alfred Bird, Professor C. Vernon Boys, F.R.S., Mr. T. B. Browne, Mr. Frank Butler, Mr. R. W. Buttemer, Mr. E. Calthrop, Mr. C. Cordingley, Colonel R. E. B. Crompton, R.E., Mr. Bryan Donkin, Captain the Hon. Cecil Duncombe, Mr. Henry Edmunds, Mr. T. W. Staplee Firth, Mr. J. M. Gorham, Mr. Walter Hancock, Mr. H. E. Sherwin Holt, Professor H. S. Hele-Shaw, F.R.S., LL.D., Major H. C. L. Holden, R.A., F.R.S., Mr. H. A. House, Mr. Ernest Hutton, J.P., Mr. A. H. Howard, Sir Edward G. Jenkinson, K.C.B., Mr. Edward Kennard, Mr. John Henry Knight, Mr. W. J. Leonard, Mr. Edmund Macrory, K.C., Mr. Edward Manville, Mr. Mark Mayhew, L.C.C., Sir Hiram S. Maxim, the Hon. John Scott Montagu, M.P., Mr. C. Harrington Moore, Mr. Richard Muirhead, Mr. Arthur Paget, Mr. Robert E. Phillips, Dr. Boverton Redwood, D.Sc., F.R.S.E., the Hon. C. S. Rolls, Sir David Salomons, Bart., Mr. Lyons Sampson, the secretary of the Cyclists' Touring Club (*ex-officio*), Mr. Frederick R. Simms, Mr. Paris Eugene Singer, Mr. Shrapnell Smith, Mr. Stanley Spooner, Mr. Henry Sturme, the Right Hon. Lord Suffield, K.C.B., Mr. John I. Thornycroft, F.R.S., Mr. Roger W. Wallace, K.C., Mr. Arthur J. Walter, and the Club Secretary (*ex-officio*).

Certain alterations in the rules with regard to the appointment of the General Council were then dealt with and adopted.

An extraordinary general meeting of the members of the Automobile Club was afterwards held, when certain alterations in the rules as to affiliated clubs were considered and adopted, as was also the proposal to form a Motor Union, details of which are given on another page.

AN electrical motor-tricycle is, we hear, being constructed by Mr. J. T. Kellet, of Stockwell, S.W.

THE Salon Automobile Belge will open in Brussels on the 16th inst. and close on the 24th inst.

THE *Velo's* correspondent at Nice reports that the Crown Prince of Sweden and Norway is going to make the trip from Paris to the Riviera on a 24 h.p. motor-car.

THE MOTOR UNION.



SINCE the formation of the Automobile Club the necessity for a combination of automobilists for the protection of the individual and opposition to attempts to bring about unnecessary restrictive legislation has daily become more apparent. The work of the Club has to a large extent been in these directions, with the result that the attention which has necessarily been given to these important matters has probably, in some measure, impaired the social functions of the club. In order to present an effective front to opposition, to foster the movement, and to properly protect the individual, the Club Committee hold the opinion that it is indispensable that all automobilists should be embodied under one banner. At an extraordinary general meeting last week, the formation of a Motor Union for this purpose was proposed and adopted.

The functions of the Union will be (1) to absorb and perform the work hitherto carried on by the Motor-Vehicle Users Defence Association, namely, the protection of individual automobilists against unnecessary or vexatious actions at law.

(2) To carry out the work hitherto entrusted to the Competitions Committee.

(3) To empower and enable the A.C.G.B.I. to set up effective opposition to attempts at unnecessary restrictive legislation.

(4) To empower and enable the A.C.G.B.I. to take such action as may be necessary to uphold and extend the rights and privileges of automobilists generally in the United Kingdom.

(5) To assist the A.C.G.B.I. in carrying out tests, trials and exhibitions which may be organised from time to time for the advancement of the industry.

(6) To advise and assist the A.C.G.B.I. in the provision of special facilities for automobilists in the United Kingdom, such as the appointment of hotels and repairers and the provision of petroleum spirit depôts.

(7) While maintaining the A.C.G.B.I. in its position as the recognised authority on automobilism in this country to relieve that body of the burden of the work hitherto carried out by it for the general advancement of automobilism as opposed to the purely social functions of the club.

Any person, lady or gentleman, may become a member of the Motor Union on payment of the subscription, without election, subject to the right of the Executive Committee to cancel the enrolment of a member at the end of any year. The subscription will be one guinea per annum, except for members of the A.C.G.B.I. and members of Automobile Clubs in the United Kingdom affiliated to the A.C.G.B.I., who will *ipso facto* be members of the Motor Union.

The following are the privileges of Membership.—(1.) Membership of a body which has as its object the advancement of automobilism in the United Kingdom.

(2) Defence: Every member of the Union shall have the privileges at present enjoyed by members of the M.V.U.D.A., namely, the right to have considered his claim for the necessary financial and legal assistance in respect of proceedings or actions at law, either civil or criminal, in connection with their motor-vehicles.

(3) A free copy of the Automobile Club *Notes and Notices*, the columns of which will be employed as a means of informing members of the Union of the proceedings of the Automobile Club and of the Union, and as the medium of inter-communication between the members of the Union.

(4) The right to apply to the Executive Committee for advice in connection with automobile matters.

(5) The right to wear the badge of the Motor Union.

The income of the Union will consist of:—

(a) Subscriptions of members of the Union who are not members of the A.C.G.B.I. or its affiliated clubs.

(b) 7s. 6d. to be paid by the A.C.G.B.I. in respect of every member of the latter.

(c) 5s. to be paid by the A.C.G.B.I. in respect of every member of affiliated clubs.

(d) Voluntary subscriptions by owners of motor vehicles and others.

The administration of the Union to be in the hands of the Executive Committee, which shall be composed as follows:—

(a) The Administrative Committee of the A.C.G.B.I. *ex-officio*.

(b) Two *ex-officio* representatives of the Committee of every affiliated club.

(c) Two elected members for every hundred members of the Union on the register of the A.C.G.B.I. The election of these representatives to take place at the annual general meeting of members of the Union on such a register.

(d) One elected representative for every fifty members of the Union on the register of a club affiliated to the A.C.G.B.I. The election to take place at the annual general meeting of members of the Union on such a register.

(e) The chairman and vice-chairmen for the time being of the A.C.G.B.I. to be *ex-officio* chairman and vice-chairman of the executive committee of the Union.

(f) The executive committee of the Union shall have power to delegate portions of its work to sub-committees composed of members of the executive committee.

The liability of members of the Union will be limited by registration under the Company's Act to the amount of their subscription.

THE DUNLOP COMPANY AND TIRES FOR HEAVY AUTOMOBILES.

THE users of heavy motor vehicles in this country have for some time suffered severely owing to the fact that the Dunlop Pneumatic Tire Company, whilst unable to supply English-made tires for use at high speeds on the heavier class for motor passenger vehicles, have refused to allow the importation of the Michelin tire which is made in France, and which has been considered up to now the best heavy motor vehicle tire, even though British automobilists have been willing to pay a heavy royalty to the Dunlop Tire Company in connection with these tires. Representations were made to the Committee of the Automobile Club that the action of the Dunlop Company in this matter was seriously impeding the development of automobilism in this country. The Automobile Club Committee therefore asked the Directors of the Dunlop Pneumatic Tire Company to consent to a Conference on this question with a sub-Committee of the Club, composed of Mr. Roger W. Wallace, K.C.; Sir David Salomons, Bart.; Colonel Crompton, R.E.; the Hon. C. S. Rolls; and Mr. Mark Mayhew, L.C.

It appears, however, that for some time past the Dunlop Company have been endeavouring to overcome certain difficulties which surrounded the sale of Michelin tires, and on the 1st inst. Mr. Harvey du Cros, the chairman of the Dunlop Company, most courteously communicated to the secretary of the Automobile Club particulars of these negotiations, and of the arrangement which has now been come to. It appears that the Dunlop Company had been in the habit of making their tires for bicycles by hand, and hoped to use the same process for the manufacture of heavy motor-vehicle tires. This proved to be unsatisfactory, and it was found that in order to make heavy motor tires it would be necessary to use a vulcanising process, which entailed in the first place that the Company should become rubber manufacturers, and in the second place that they should put up extensive buildings and purchase very expensive machinery. The demand for heavy motor tires was not at the outset sufficient to justify this expenditure. The Company, therefore, decided to import from France heavy motor tires which, by many users in France, were considered to be almost satisfactory, if not quite as satisfactory, as Michelin tires. Pending the erection of the new factory, it was not considered advisable to inform the public that the heavy tires sold to them by the Dunlop Company were of foreign manufacture. It should be clearly understood, therefore, that the Dunlop Company had never made a pneumatic tire for heavy motor vehicles.

Many motorists had asked them to permit them to import motor tyres on the understanding that they should pay to the Dunlop Company a royalty. An agreement to this on behalf of the company was rendered impossible owing to the fact that the company was under obligations to other licensees. There were also considerations which made it undesirable for the Dunlop Company to arrange direct with Messrs. Michelin. But for some time past Mr. Harvey du Cros, being extremely anxious that nothing should stand in the way of automobilism in this country, has been endeavouring to arrive at an arrangement whereby the Clipper Tyre Company will be permitted to have their tires manufactured for them by Michelin, of Paris, for sale in this country. The first difficulty which presented itself in connection with this proposal was that the Clipper Tyre Co. had given an "undertaking" to deal with another company, and Mr. Harvey du Cros said that the surmounting of these difficulties has only been brought about at considerable sacrifice. The terms asked by Messrs. Michelin in connection with the manufacture of tires for the Clipper Co. were at the outset prohibitive. Among the terms of the proposed contract were the following, viz. :—

- (a) Michelin to give the Clipper Company sole rights for Great Britain and Colonies.
- (b) The Clipper Company to sell no other tire.
- (c) Michelin to give no guarantee as to delivery or quality.
- (d) The Clipper Company to guarantee a turnover of £80,000 during the second year: £100,000 during the third and following years.
- (e) The Clipper Company to make a deposit in a French bank of £8,000 cash as a guarantee to Michelin of the carrying out of agreement.
- (f) The Clipper Company to order the entire £80,000 of tires at one time and to pay in advance.

The acceptance of these terms being absolutely impracticable, the arrangement of the contract has necessarily caused considerable delay. Mr. Harvey du Cros, however, authorised the Secretary of the Automobile Club to say that Clipper Tires manufactured by Michelin will be sold by the Clipper Company at prices hitherto charged for Dunlop tires. The Clipper Tire Company will sell nothing but these tires. All the tires to be specially marked at the London Depot of the Clipper Company, of which Mr. Jarrott is to be the manager. Automobiles purchased in France for use in the United Kingdom may be fitted with similar tires obtained from the Clipper agents in Paris, viz., Clément-Gladiator Company; but the purchase of tires from Michelin otherwise for use in England will be prohibited and the users of such tires will be proceeded against with even more rigour than hitherto.

In the meantime, the Dunlop Company have for some time been engaged in the preparation for the manufacture of heavy motor tires in this country; the Company has become rubber manufacturers, has put up extensive works, and has bought the necessary plant for the proper manufacture of motor tires for large high-speed cars in this country. The Company, however, will not sell heavy tires of their manufacture

until they are satisfied that they have secured the same high efficiency as that established for their cycle and voiturette tires, but they believe that they will arrive at this stage in relation to heavy tires very shortly. In the meantime, Mr. Harvey du Cros emphasises the statement that up to now neither the Dunlop Company nor the Clipper Company has ever made heavy motor-vehicle tires.

NOTE.—The above statement has been submitted to the chairman of the Dunlop Pneumatic Company, and has been corrected by him. In publishing it the Automobile Club Committee wish it to be understood that they cannot take any responsibility for the assertions or opinions contained in the statement.—*Automobile Club Notes.*

LEAVING A MOTOR-CAR UNATTENDED.

AT the City Police Summons Court last week, Mr. D. M. Weigel appeared to a summons for leaving a light locomotive without a competent person in charge. Police-constable James said that he saw the motor-car in Gresham Street; no one was in charge. He stood by it for nearly an hour. Then he made inquiries, and shortly afterwards the defendant came out of an office near by. Defendant's solicitor contended that it was absolutely essential to the proving of an offence that the machine should be in actual use. Not only was it impossible for the motor to be in use while he was away, but under no circumstances whatever could it be used, as at the time stated the defendant had in his pocket the mechanical appliance that united two wires which caused an electric spark to ignite the gas in what was technically known as the explosion chamber. Had they been summoned for obstruction he would have had to meet the case very differently. At the same time the car, which was a very small one, could easily be pushed out of the way. Defendant went into the box, and gave evidence which satisfied Mr. Alderman Smallman that the words "in use" did not apply in the present case. At the same time, the Alderman said, it was a technicality the police could not be expected to know. Defendant's solicitor said the case was highly technical, and highly important to motorists, and, if it were construed that the motor was actually "in use" when it was left by the owner outside any place, it would mean that they must take engineers with them. The Alderman ordered the summons to be dismissed.

La Course du Catalogue, which was to be run off last Sunday, had to be postponed owing to wretched weather. It will take place on Sunday next, the 10th inst. About forty entries have been received.

THE Aberdare Valley Motor Service Company, Limited, Gloucester Street, Aberdare, have been appointed official repairers to the Motor Manufacturing Company, Limited, and De Dion-Bouton, Limited.

THE Gesellschaft für Motorfahrzeugbau, Cudell and Co., of Aix-la-Chapelle, has issued its balance-sheet for last year, which shows a net profit of £5,702, out of which a dividend of 4 per cent. is being declared.

JOHN WANAMAKER'S two stores—at New York and Philadelphia—have started to sell motor-tricycles and quadricycles on the time payment plan. These machines are sold at the regular list price, plus interest at the rate of 4 per cent. per annum on the unpaid part.

MR. JOHN D. HILL, of Finsbury Park, writes that in giving the list of cars present at the demonstration before the County Council at Chelmsford, in our last issue, we stated that his 8 h.p. Panhard car was Mr. F. F. Wellington's 6 h.p. Panhard. The mistake arose owing to the fact that Mr. Wellington drove Mr. Hill's car.

THE Touring Committee of the A.C.F. have decided that in order to preclude any idea of a speed contest between the participants in the tourists class in the Paris-Berlin race, they shall not be timed except at the start from Paris and the arrival at Berlin. Moreover, the tourist class will not follow the same route as the racing contingent.

THE British Automobile Commercial Syndicate, Limited, has been registered with objects sufficiently indicated by the title. The capital is £15,000, divided into £1 shares. The subscribers are Mr. E. P. Daniell, 259, Ladbroke Grove, Notting Hill; Mr. A. Vahid, 259, Ladbroke Grove, Notting Hill; Mr. S. Lombardi, 36, North Road, Highgate; Mr. R. Proto, 53, Paul Street, Finsbury; Mr. B. Weigel, 25, Maxilla Gardens, North Kensington; Mr. F. Strudwick, 6, Loris Road, Shepherd's Bush; Mr. S. Weiner, 25A, Hatton Garden, E.C. The first chairman is the Earl of Shrewsbury and Talbot.

THE AUTOMOBILE MANUFACTURING Co., Ltd., 48/49, Long Acre, and North St., Manchester Sq., all cars in stock. Garage, Repairs.

THE Motor-Car Journal.

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COMMENTS.



AFTER a week of miserable weather, Saturday opened fine and bright, and the Automobile Club's initial run of the season promised to be more attractive than was first anticipated. The journey to Virginia Water being only a short one of twenty-two miles, it was not expected many would remain to dinner, consequently the small party staying behind did not cause disappointment. Outside the Club only about half-a-dozen cars were assembled at two

o'clock, and the owners of several of these only came to see the start. The journey to the "Wheatsheaf" needs no description; half the way the road consists of wood pavement and the other half macadam, the latter very bumpy, but otherwise not heavy going. At Virginia Water, where we arrived about five o'clock, there were the following cars drawn up:—a Delahaye voiturette with Messrs. Moore, sen., and jun.; Mr. Pierce, 9 h.p. Napier; Mr. Owers, Daimler, with Estcourt cooler and valves; Mr. Estcourt, Daimler, ditto; Mr. Peal and party, Daimler; Mr. and Mrs. Fuller, De Dion voiturette; Mr. Manville, with Mr. Johnson and party, Daimler—the one, by the way, used by Mr. Pitman throughout the 1,000-mile trial; a Darracq, with Mr. Bruce and party; Mr. Cordingley, Mr. Burgess and party on a M.M.C. Panhard; and Mr. J. Scott Montagu, M.P., on his new 20 h.p. Daimler. After dinner many returned to town: Mr. Montagu and party to Ditton Park; and others to Hampstead, there being no incidents either going or returning. The next afternoon run will take place on Saturday, the 23rd inst., the destination on that occasion being Sevenoaks.

The Turgan-Foy Steam Caravan "Quo Vadis."

We are this week able to reproduce a photograph taken by M. Turgan during his recent tour in Algeria and Tunis on his steam caravan "Quo Vadis." This huge vehicle is fitted up in a most complete way, there being a kitchen, sitting-room, and sleeping accommodation, etc., the various compartments being lighted by electricity. We are pleased to be able to announce that there is every likelihood of this interesting vehicle being on view at the forthcoming motor-car exhibition at the Agricultural Hall, where it is sure to create a good deal of attention.

Another End-to-End Trip.

MR. WARREN SMITH, the well-known actor and a keen yachtsman, has no doubt by this time completed his trip on an Argyll motor-car from John o'Groat's to Land's End, for on Monday he had only seventy miles further to cover. We hear that Mr. Smith, who undertook the journey in a purely sporting spirit, has had some novel experiences and many difficulties to overcome. For one hundred miles on each side of Inverness he was practically cutting his way through the snow, and we know that one day he was eight hours doing fifteen miles purely owing to the state of the roads.

Not Yet.

THE Borough surveyor of Kensington, Mr. Weaver, included in a number of proposals which he submitted to the Borough Council, in reference to an improved method of street cleansing, one that the night foreman should be provided with a motor-car, at an estimated cost of £110, to enable him to get round the borough more expeditiously at night. The Council, however, rejected the suggestion, and decided that a bicycle, at a cost of about £10, would meet the requirements of the case. The time is, however, not far distant when different views will prevail, for the economics and practical advantages of the motor-car are slowly but surely being recognised.

Brakes.

AT the present time the subject of brakes is receiving serious attention both from the Committee of the Automobile Club and from manufacturers, and a suggestion has been put forward, that unless a machine has brakes—applicable either backwards or forwards—sufficient to "pull up" the car on a gradient of 1 in 4½, it should not be allowed to take part in Club events. Such a condition we consider unnecessarily severe, but at the same time there must be borne in mind the grave risks run daily by drivers having on their cars faulty brakes, which are unable to prevent cars from travelling backwards. It should be a *sine qua non* that every car be fitted with effective and properly tested brakes, and that the dependence on sprags alone or similar devices should be discountenanced.

Some French Devices.

IN our issue of September 8th, 1899, we illustrated that Cuenod emergency brake, which is largely used by French automobilists. This brake consists of two iron shoes carried near the ground, one at each side in the space between the rear wheels. In addition to acting as a brake, the device can also take the place of a sprag. When in Paris recently we noticed still another device to replace, or rather supplement, the sprag, to prevent the car from running back when ascending hills. It consisted of a couple of large wooden wedges supported one behind each wheel. In climbing hills these can be let down on the road behind the wheels simultaneously with the sprag, this and the wedges being controlled by one lever. While it cannot be said that they add to the appearance of the car, the wedges appear to be capable of preventing all chance of the car running back in a hilly country, and the safety of the passengers is of more importance than appearance.

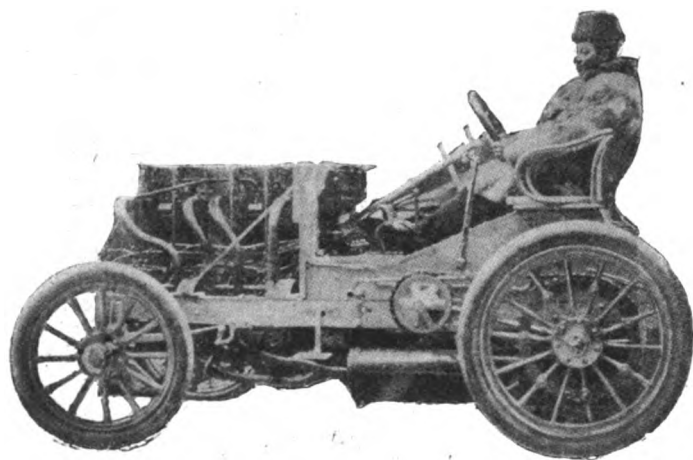
The Liverpool Heavy Vehicle Trials.

THE Liverpool Self-Propelled Traffic Association are busily engaged in completing the arrangements for the trials of heavy vehicles which are to take place in June next, and we understand that the entry forms will be obtainable from Mr. E. Shrapnell Smith, the hon. sec., on and after the 18th inst. The full conditions relating to the trials were published in our issue of June 13th last. Three classes of vehicles are therein provided for, but the Council, upon representations that a number of vehicles will otherwise be debarred from competing, have since

decided to add a fourth class. In this new class, to be known as "Class D," there are no restrictions upon the tare or platform area, and all the conditions published last year apply. The minimum load to be carried is four tons, but an excess may be declared in accordance with Rule 1. There is no alteration in Classes A, B, and C, the specifications for which remain unchanged. Entries will be received until the last day of April, and the Council of the Association are hoping that builders of petroleum-spirit cars for heavy traction will make a special effort to enter vehicles for the competition. A dinner in connection with the trials will be held on Monday, June 3rd.

The Darracq 80 h.p. Racing Car.

FOR some time past rumours have been rampant to the effect that many motor-car builders in France have been quietly engaged in constructing powerful machines, and in this connection it gives us pleasure to present an illustration of the Darracq racing car, which is fitted with an 80 h.p. motor and which has been built to take part in the forthcoming Paris-Berlin race. It is claimed to be the most powerful and fastest machine actually in Paris. The engine, which comprises four cylinders, is fitted with both tube and electric ignition. Lubrication is accomplished from a central box which is seen at the front of the *mécanicien's* seat. It will be noticed that the driver brakes with



both feet, and his position in the seat admits of the application of great power to the brake. The transmission is similar to that adopted in the Panhard cars; the rear wheels are shod with Michelin 5 in. pneumatic tires and the front wheels with 3 in. ditto. We are indebted to the *Automobile Magazine* for the illustration.

The C.T.C. and Motorists.

THE members of the Cyclists' Touring Club are just now engaged in a discussion as to whether the memorandum of association should be so altered that owners of motor-cars may become members of the club. How far the change may be necessary from the C.T.C. point of view we do not know, but looking at the matter from the motorists' side there is absolutely no necessity for the alteration. It has, we believe, been claimed that the requirements of both cyclists and motorists are identical so far as touring is concerned, and that motorists are largely recruited from the ranks of cyclists. While there may be a modicum of truth in both these statements, yet we believe that motorists will prefer to have their interests looked after by an automobile body purely rather than one whose primary object is that of the interests of cyclists. Were motorists unprovided with an organisation for the protection of their interests, the action of the C.T.C. might be viewed in a different light; but seeing that the users of motor vehicles have already their own organisations which are steadily working for their objects, the contemplated change by the C.T.C. is quite unnecessary.

Racing at Nice.

THE racing season at Nice has now commenced in earnest. The Brunetta d'Usseaux Cup Race was run off on the 5th inst., the route being Nice-Puget-Theniers-Nice, a distance of 128 kilomètres. There were only three starters—M. Chauchard, with a 20 h.p. car, M. Garibaldi, with M. Gondoin's 9 h.p. car, and Le Baron de Ville d'Avray. The start was given at 9.30 a.m., M. Chauchard arriving first at Puget-Theniers, the other competitors arriving five minutes later. The Baron's car broke down on the return journey, Chauchard arriving in 2 hrs. 22 mins. 3 secs., Garibaldi's time being 3 hrs. 19 mins. 3 secs. On Sunday the Lebaudy Cup was competed for, the course being Nice-Cannes-Sainte Maxime-Hyeres-Hassans-Le Luc-Nice, a distance of 280 kilomètres. Out of eight entries, only two—M. Pinson, on a 24 h.p. car, and M. Clerissy—started, so that there was little interest in the race, which was further curtailed by the fact that the latter of these retired shortly after starting. M. Pinson's time for the course showed an average speed of 34 miles per hour.

The Rothschild Cup Race.

TUESDAY was devoted to the Baron Arthur de Rothschild Cup race, a short course of nearly 9 kilometres between Nice and La Turbie for four-seated heavy cars. Out of six entries only three started, viz., M. Desjoyaux, driving a 35 h.p. car; Prince Lubecki, a 35 h.p. car; and M. Jellineck, a 28 h.p. car. The result was as follows: 1, Prince Lubecki, in 11 min.; 2, M. Desjoyaux, 12 min. 13 sec.; 3, M. Jellineck, 15 min. 23 sec. After the dinner Baron Arthur de Rothschild gave a *dejeuner* to the *chauffeurs* present.

The Automobile Club of America.

THE first run of the century, and the last from their old quarters, was undertaken by the Automobile Club of America a few days ago. Leaving the Waldorf-Astoria, in New York, at nine o'clock, over streets and roads covered with snow, eight brave members sailed forth for the Claremont. Four of the vehicles were petrol, three steam, and one electrical. Mr. A. C. Bostwick, vice-president of the club, set the pace in an electric car. The run was a great success, the snow not interfering in any way either with the running of the vehicles or the comfort of those in them.

The Lincolnshire Automobile Club.

THE Lincoln Automobile Club dinner is to take place to-day, the 16th inst. Among the motorists who have promised to attend dinner are Mr. Roger Wallace, K.C., Chairman of the Automobile Club of Great Britain, the Hon. J. Scott Montagu, M.P., Mr. S. F. Edge, Mr. C. Jarrott, Mr. J. W. Stocks, Mr. A. J. Wilson, Mr. A. R. Atkey, of the Nottingham Club, with a large party, and most probably the Hon. C. S. Rolls and Mr. C. Johnson, secretary of the A.C.G.B., with other well-known gentlemen. The guests are to be met per motor-car at Sleaford and Newark. The Mayor of Lincoln, Mr. Councillor C. W. Pennell, will take the chair.

Accumulators for Ignition Purposes.

OUR recent remarks concerning the cost of charging these in country districts are questioned by a contributor to an electrical contemporary, who is either unaware that from 1s. 6d to 2s. is not uncommonly asked for recharging a pair of 20 ampère-hour accumulators, or unable to calculate the energy contained by such, which, translated into terms more familiar to the non-electrical automobilist, is approximately that of one-tenth of a h.p. for one hour. It is obvious from this that the cost to the purchaser is not far from what we stated, theoretical ideas of the price of electrical energy notwithstanding. Our critic concludes with a brilliant suggestion for avoiding the difficulty of getting cells charged, namely, to carry one or

two spare ones. A point about electrical ignition not sufficiently appreciated yet is that to a certain extent a more energetic spark is followed by more energetic combustion. This can only be true to a certain limited degree, but there can be little doubt that in many motors the ignition appliances are cut too fine where accumulators and a coil are employed. There is a great difference between getting a sufficient spark for regular ignition and getting one sufficient to give the best results, and a little more liberality in the ignition apparatus of a motor would often be well repaid.

The English Motor Club.

THE week-end run of the English Motor Club to Ripley was favoured with a glorious day and good roads; consequently the attendance was good, and besides those who actually carried out the run to the full, there were several who took the opportunity of having a spin along the famous Ripley Road. Amongst those who reached the lunch table at the "Talbot" were Mr. A. J. Wilson, on a latest pattern De Dion-Bouton tricycle, with water-cooled head; another gentleman on a 6 h.p. De Dion-Bouton tricycle; Mr. Malthy on a New Orleans; Mr. Cousins on a racing De Dion-Bouton tricycle; Mr. Cecil Edge on a 9 h.p. Napier; Mr. S. F. Edge on a 16 h.p. Napier, accompanied by Mr. and Mrs. H. L. Clark; and Mr. C. Sangster and Mr. R. H. Fuller on a De Dion-Bouton voiturette, and Mr. Munn on a tricycle. Lord Russell and Mr. Jarrot, who started on a Panhard, experienced tire troubles, and completed the journey by other means. The Club are now concentrating their attention on their motor race meeting at the Crystal Palace on Easter Monday, which promises to be a notable fixture.

Electric Vehicles in France.

MR. HART O. BERG, of Paris, considers that the electric carriage in that country is pressing the petroleum vehicle hard, and will continue to do so. For some years past there has not been anyone who seemed inclined to take the risk of establishing central stations in the capital, which, of course, are necessary in cities where electric vehicles are to be much used. Recognising this condition, and feeling sure that the electric carriage would appeal to the Parisians, the Electric Vehicle Company have established a central station, which is equipped, not for the purpose of taking care of Columbia vehicles only, but all types of electrically-propelled carriages. This growing popularity of electric vehicles is said to be astonishing petrol enthusiasts.

Road Improvement.

At a recent meeting of the Committee of the Roads Improvement Association, it was announced that a scheme was in preparation for the extending the usefulness of the association. Now that the bicycle as an instrument of road travel is being reinforced by the motor-car, a new interest has been aroused in the maintenance of our highways, and the subject is one that requires to be kept constantly before the public, for, although many of our roads are good, the generality are nothing like what they ought to be, considering the money that is spent upon them and the ever increasing importance of locomotion facilities. The annual meeting of the Association is fixed for the 20th inst.

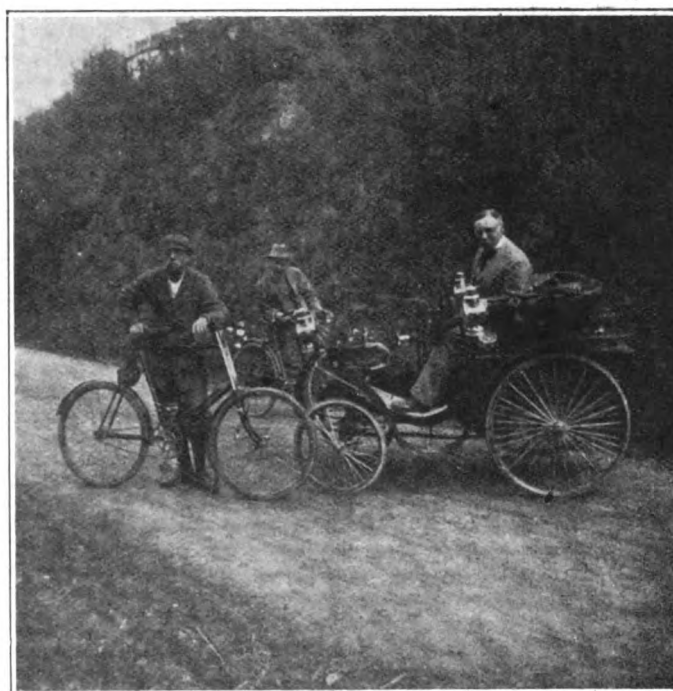
Fire-Engines and Automobilmism.

It is stated that the experiments of the London Fire Brigade with oil fuel which have been going on for more than a year are so far satisfactory that three more engines are to be fitted with appliances for its use on the Clarkson-Capel and another system. It may be hoped that the next advance will be in the direction of adopting a more efficient and modern means of propulsion. The self-propelled fire-engine has been tried and not found wanting in New York and elsewhere, and the forthcoming

exhibition of such appliances promised for next June at Berlin should afford an opportunity of information on the subject not to be neglected by the various bodies responsible for fire brigade management in this country.

A Striking Example.

A STRIKING illustration of the way municipal and provincial authorities in France do all in their power to encourage the automobile movement is to be found in the fact that at Poitiers a gentleman has been appointed by the municipality to give weekly public lectures on the subject of automobilism, in the town hall. The lectures will be historical, theoretical, and practical, and will, in particular, be devoted to technical explanation of different types of motors. They will also deal with the driving of cars, and the lecturer will give hints for travelling on the road. Dare we suggest that County Councillors in this country would do better in following the Poitiers example than in doing all they can to hinder the progress of the automobile movement in Great Britain?



A REMINISCENCE OF THE FIRST RUN OF THE AUTOMOBILE CLUB.

By Motor-Bicycle to Italy.

THE trip over the Alps on a motor-bicycle made last year by Mr. Joseph Pennell and the subsequent papers on the subject read by this gentleman will be still fresh in the minds of our readers. Mr. Pennell is again seeking adventure, for in a letter to us from Paris he informs us that he intended starting on Sunday last on a journey to Italy. He is using a 1901 Werner motor-bicycle, which he considers an enormous improvement over that of last year, and he is hoping to have a more comfortable trip.

Acknowledgment Wanted.

It is always pleasing for us to see articles and illustrations which appear in our pages reproduced in the columns of our American contemporaries, but it is also more satisfactory, and only what is really due, that proper acknowledgment should be given for the same. While this courtesy is extended by the majority of American motor-journals, *Automobile Topics*, of New York, is a notable exception. We have drawn their attention to the fact that illustrations are frequently reproduced

in their pages without any mention of the *Motor-Car Journal*, but so far without result. In the last issue to hand of our contemporary there appears a long illustrated article on the French motor-car exhibition which is supposed to be from a special correspondent in Paris. On reading through it we find that, with the exception of the opening paragraph, the first five pages are identical with those which appeared in our pages over a month ago. So much for American "special correspondence"!

Doctors and Motor-Cars.

THE great advantage of motor-cars to doctors cannot be overestimated, as, apart from the question of economy, they overcome all possibility of delay in time of emergency. One of the most commendable features of the automobile is its readiness to respond to immediate action. Oftentimes the loss of a few minutes would jeopardise the life of a patient, which by the use of a vehicle ready for immediate starting would save many in the throes of death. It requires from 15min. to 30min. to harness and prepare a horse for a journey, more especially at night; but with ready means at hand to start without delay at high speed the saving of time would be of incalculable benefit to the suffering one. Among metropolitan doctors who have been quick to recognise the advantages of motor-vehicles is Dr. A. H. Cook, of Hampstead, who, about four months ago, purchased a "Locomobile" steam-car. Finding the vehicle sufficient for his medical practice, the doctor, a month or two ago, sold his carriage and two horses. His coachman has turned *mecanicien*, and has studied the machinery sufficiently to enable him to do a good many of the minor repairs. Dr. Cook has used the car twice daily since the middle of November, and has been over 1,000 miles in it, and he reports that, although Hampstead is a hilly district, the car can manage the worst hill with ease.

The Coming Change.

COMMENTING on Mr. Balfour's suggestion in regard to radiating thoroughfares with a surface designed for motor-car propulsion, the *Onlooker* considers this a most provident proposal. Our contemporary adds, "Though we yield to none in our affection for the steed, it cannot be denied that the absence of the horse would make for the greater cleanliness of the streets; and, consequently for the purity of the atmosphere. A London street filled with a swarm of burnished, easily-moving horseless vehicles would in very truth be a pleasanter place in which to live and move and have our being than it is at present."

An Anti-Speed Crusade in America.

AT a mass meeting of taxpayers recently at Mineola, L.I., a strong protest was made against the excessive speeds at which motor-cars are run by well-known automobilists of New York and Brooklyn on the main roads of Long Island, and a Bill was prepared and indorsed giving the county supervisors power to limit the speed of automobiles within their jurisdiction. It was suggested in the Bill that the speed limit be fixed at eight miles an hour and that every automobilist be compelled to stop at a signal from a fractious horse. Leading members of the Automobile Club of America were up in arms when they heard of the proposed action of the Long Island community, and a conference was immediately held between members of the Law Committee, the result of which was the drafting of a Bill, to be presented at Albany and urged by the Club's representatives, as a substitute for the measure of the Long Island mass meeting. The Club wishes to discountenance excessive speed, but objects to promiscuous legislation on the subject such as would follow the enactment of such a law as proposed. The Bill which is being drafted by A.C.A. will, states the *Horseless Age*, provide for a speed limit of fourteen or fifteen miles an hour in country districts and considerably less in thickly settled districts, on the ground that motor vehicles can be stopped much quicker than horse-drawn vehicles. Following the example of the Automobile Club of Great Britain, the Board of Governors of the A.C.A. has passed a resolution to the effect that the abuse

of the highways by drivers of motor-cars should be and is disapproved by them, and that any member of the Club who can be proved to have committed such an offence shall be suspended or dropped from the rolls.

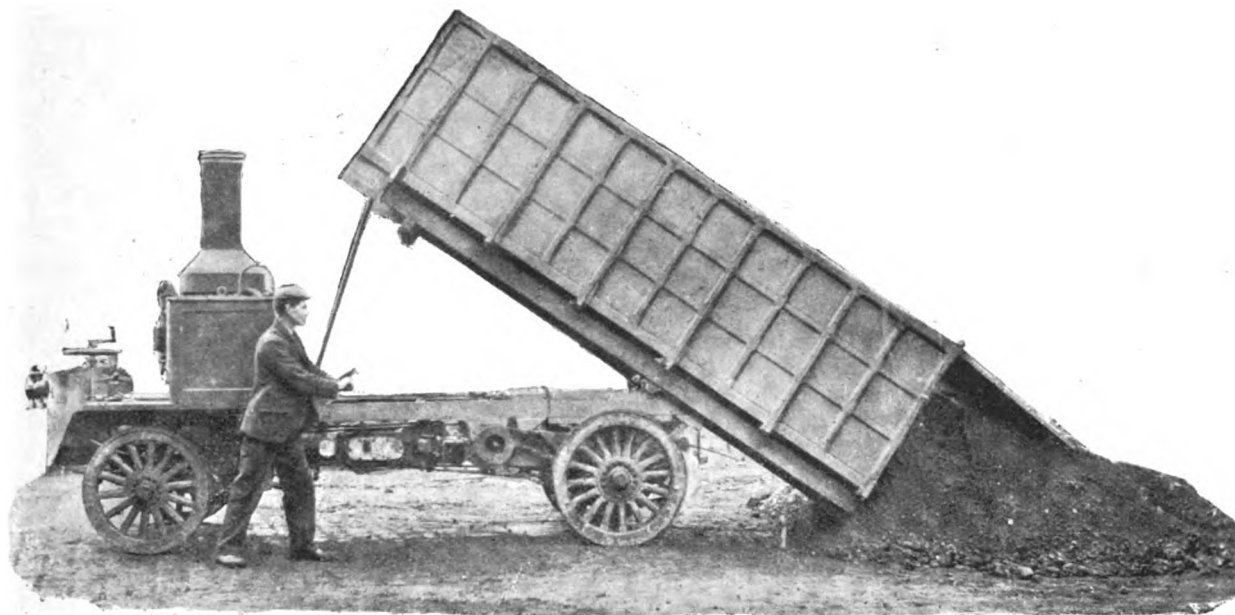
Automobile Club Competition Rules.

A CONFERENCE was held at the Automobile Club on the 6th inst. between the Competitions Committee of the Club and a Committee of the English Motor Club. Mr. R. Todd was in the chair, and there were also present the following members of the Competitions Committee:—Mr. Roger W. Wallace, K.C., Mr. Mark Mayhew, L.C.C., the Hon. C. S. Rolls, Mr. Campbell Muir, Mr. Harry J. Swindley, and Mr. C. Johnson, secretary. The following gentlemen represented the English Motor Club:—Mr. S. F. Edge, Mr. C. Jarrott, Mr. A. J. Wilson, Mr. F. W. Baily, Mr. G. H. Smith, Mr. T. Maltby, and Mr. A. J. Ilsley. Mr. A. J. Wilson first explained the proposals of the Committee of the English Motor Club. Mr. Edge, Mr. G. H. Smith, and others spoke. The Competitions Committee stated that they were prepared to recommend to the Club Committee the following variations in the Competitions Rules, so far as the year 1901 was concerned. (1) The free registration of riders in automobile races or competitions to be continued but to be embodied in the form of entry for events. (2) The rule requiring the registration of motor-vehicles to be suspended during this year, except in competitions held by the Automobile Club, and in any special case in which the Competitions Committee may in granting a permit for a meeting insist upon the registration of vehicles. (3) The employment of official handicappers to be optional during 1901. (4) National Cyclist Union timekeepers to be recognised by the Competitions Committee provided they apply every year for registration by the Automobile Club and are accepted by the Competitions Committee and placed on its register. (5) In cases where clubs holding a cycling or athletic meeting wish to include not more than two automobile events in their programme, the Competitions Committee will grant a permit for a fee of 2s. 6d. Permits for Club Meetings may also be obtained for the same fee of 2s. 6d. The general intention of these variations in the rules is that the Competitions Rules may be as little obstacle as possible in the promotion of competitions. The representatives of the English Motor Club expressed themselves as fully satisfied with the variations above referred to.

Speed and Distance Indicators.

THE plethora of cyclometers, tachometers, etc., pressed on our attention by dealers in cycle accessories finds no parallel as yet in the motor trade, and such apparatus has usually had to be devised by the ingenious automobilist for his own use. A very satisfactory device of the kind recently seen on a Decauville car consisted of an ordinary cyclometer attached to the steering pillar, and actuated by a striker pulled by a Bowden wire fastened at the other end to a lever, touched by a pin on the rear wheel. Another was a "Metroscope" cyclometer, driven by a small pulley on the countershaft instead of the usual friction wheel, while many of the old-fashioned patterns adapted to the large wheels of old-time cycles have had a new lease of life on modern automobiles. These, however, are usually of too short a range to be of much use, and a cyclometer suitable for 30 to 40 in. wheels, and capable of being read from the seat, is much to be desired. A more elaborate apparatus is Mr. Harrington Moore's ingenious "log," and we remember seeing a small mechanism of a similar kind on Sir David Salomons' Peugeot; but some inquiries we made in Paris about a year ago failed to discover any speed indicator suitable for an ordinary car. A gradient meter, of which several types are to be had, affords interesting indications; and it may be worth noting that we have usually found the gradients as given in the "Contour Road Book" about two points less than the actual steepest part of the hill; thus a hill marked 1 in 10 usually proves to have a 1 in 8 slope at its steepest, at any rate in the S.E. and E. counties.

The Coulthard Steam Tip Wagon.



THE above illustration shows the steam-tip wagon which has been delivered to Messrs. John Dugdale and Bros., of Lowerhouse, near Burnley, by Messrs. T. Coulthard and Company, Ltd., of Preston. The vehicle is one of Messrs. Coulthard's standard four or five-ton lorries. The tipping body, which is, of course, additional to the standard specification, is capable of taking a load of four or five tons of slack, and is so fitted that it can be tipped by one man. The leading dimensions are: length over all, 18 ft. 3 in.; width over all, 6 ft. 6 in.; height over chimney, 8 ft. 10 in.; platform, 12 ft. 6 in. by 6 ft. 6 in.; area of carrying platform, 80 sq. ft.; fuel bunker capacity, 4 cwts., equal to a run of 30 miles; speeds (fast and slow), 5 and $2\frac{1}{2}$ miles. The carrying capacity of the vehicle on fair macadam or paved roads, and on grades not exceeding ten per cent., is five tons. On bad roads or grades of more than ten per cent. the load must, of course, be reduced to suit the roads. The limit of grade which the makers guarantee the vehicle to safely ascend is ten per cent. with a five-ton load. The various handles for steering, starting, reversing, and brakes, also the main steam valve and boiler feed handles, are all in direct range with the driver, and the fuel used is either coke or coal. The main frame of the vehicle is of channel steel, braced and constructed so as to carry the whole of the machinery, boiler, and tanks, the frame itself being supported on the axles by long laminated springs. Steam is generated in a boiler of the vertical fire-tube type. It is built for a working pressure of 200 lbs. per square inch, and is inspected by the National Boiler Assurance Company, Messrs. Coulthard issuing a twelve-months' insurance policy in that company with each boiler sent out. In addition to a feed pump connected directly to the engine, an independent steam pump is fitted as an emergency feed. The engine is of twenty-five brake h.p., of the firm's well-known compound type. It is fitted with link reversing gear, and the whole of the motion is carried in an oil-tight case, which is extended so as to envelop all the reduction and compensating gear and shaft. This not only ensures perfect lubrication, but protects the mechanism entirely from dust. The drive is transmitted to the road wheels by means of Renold's Silent driving chains, and the wheels are of gun-carriage pattern, with steel hubs, oak spokes, and ash felloes, the rear tires being 6 in., and those of the steering wheels 5 in. A triangular attachment is fitted to the driving wheels, whereby the drive is taken direct to the wheel

felloes, and not through the spokes. The main control of the machine is by means of two hand brakes fitted to the rear wheels; these brakes are capable of holding the vehicle on any gradient. The makers have endeavoured to produce a vehicle which will work well on a small expenditure for repairs, and with a reasonably long life, and they undertake to renew any part of the vehicle which may fail or break within six months of delivery, provided, of course, that such breakage or failure be not due to neglect or improper usage or accident. Although the wagon has only been in use a short time, Messrs. Dugdale express themselves as well satisfied with its working.

THE French Automobile Club is organising an international electrical accumulator competition to begin on June 1st next.

THE Motor Manufacturing Company, Ltd., last week despatched one of their miniature Panhard voituresses to Lord Cadogan at the Viceregal Lodge, Dublin.

MR. AUSTIN, of the Wolseley Company, has promised to read a paper on the subject of automobiles before the Cycle Engineers' Institute in May. It is proposed to hold this meeting in London at the Agricultural Hall, during the period of the Automobile Club Show.

REFERRING to the 20 h.p. Daimler car, illustrated in our last issue, Mr. Sidney Straker, Assoc. M. Inst. C.E., informs us that the designing and arranging of this vehicle was entirely his work. It is accepted as one of the fastest cars in the country, being capable of travelling upwards of fifty miles per hour.

MR. SEYD, Managing Director of the International Motor-Car Company, Limited, of 106, Great Portland Street, W., informs us that they are exceptionally busy and have a number of orders in hand for their new voituress, the "Charette." The above premises having become too small, they are shortly removing to a much larger depot in High Street, Langham Place, W.

MESSRS. FRANK F. WELLINGTON, Limited, inform us that in consequence of the great demand for the Wellington Sparking Plug the rights for wholesale manufacture have been granted to Messrs. J. Lucas, Limited, of Birmingham, who later on will supply these plugs to wholesale houses. Messrs. Wellington have retained the right to manufacture what they require for their own retail customers.

THE GENERAL AUTOMOBILE AGENCY, D. Farman, Man., Carage open day and night, all cars in stock, 100-104, Long Acre, W.C.

THE BRIGHTON POLICE AND AUTOMOBILISTS.

A GREAT many automobilists have had to complain of the way in which they are persecuted by the Brighton police, but now this body of public servants are resorting to measures which are not only unfair, but do not seem to be straightforward. They have selected a piece of road outside Brighton, at Patcham, and there they pretend to have set up an apparatus by which they can time perfectly the speed of a motor-car. The result of this exploit is that Mr. S. F. Edge was summoned at the Hove Petty Sessions for not stopping when requested by two policemen, and for driving his car at a greater speed than twelve miles an hour; and for this purpose they took out two separate summonses.

The first policeman's evidence was to the effect that he had marked out the beginning and the end of one furlong with pieces of paper held fast against the ravages of the storm by a chunk of stone. He stated that he stood half-way between the two pieces of paper with a stop watch, and that when Mr. Edge got to the first one he started the watch; by that he estimated that Mr. Edge covered the furlong in $20\frac{1}{4}$ seconds. When he found that this was at the rate of twenty-two miles an hour, he signalled to the next man to stop Mr. Edge. The next man was in plain clothes, and declared that he shouted and put up his hand, but that Mr. Edge took no notice. Next came a police constable named Baker, who was in uniform, and he declared that, though he shouted and put up his hand, Mr. Edge took no notice of him also. Having exhausted the evidence, they called in a young man, whom the advocate for the police described in impressive tones as "an independent witness," who swore that Mr. Edge must have seen the two policemen put up their hands and heard them shout, but that he took no notice.

The defence was that at the place in question the car was running badly, and that the pace was very much under twelve miles an hour, and also that Mr. Edge was not driving at all, although he was in the car. The witnesses for the prosecution under cross-examination all distinctly swore that Mr. Edge was driving and that his hands were on the driving wheel, but they admitted under cross-examination that—though they recognised Mr. Edge as the driver, they could not recognise any other gentleman who was in the car; in fact, one policeman was led to ruin his evidence on cross-examination by picking out a gentleman in a row of six, who were asked to stand up in court, as one who sat next to Mr. Edge, and which gentleman was not on the car at all, but was the landlord of an hotel at Clawley. This ought to have been enough for any Bench of magistrates to displace the positive assertion on oath that Mr. Edge was driving; but while the magistrates were willing to make allowance for the constable picking out a man being on the car who was not there at all, they were not prepared to say that he was mistaken as to Mr. Edge being at the wheel.

For the defence, Mr. Edge gave evidence, as also did two gentlemen who were on the car with him. They swore that Mr. Edge did not drive during the journey from Brighton to London, and also gave explicit evidence as to the speed. After the evidence was heard and Mr. Staplee Firth had summed up the case to the Bench for the defence, they retired to consider their decision, and ultimately dismissed both cases against Mr. Edge. Mr. Firth then applied to the Court for costs, and pointed out that it was mere persecution for the police to amuse themselves by laying traps and summoning automobilists, whether there was any real ground for doing so or not, that his client had been put to considerable expense by the unwarrantable action of the police, and that an example ought to be made of such conduct; and, although the magistrates did not agree with these statements, they ordered the police to pay £5 to Mr. Edge for costs.

ARRANGEMENTS have just been concluded between Mr. Hans Renold, of Manchester, and the Ewart Manufacturing Company, of Chicago, whereby the latter will manufacture the Renold "Silent" and other driving chains for the American market.

CORRESPONDENCE.

MOTOR-BICYCLES.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—With all due respect to Mr. R. W. Buttemer, I must disagree with him as to the causes of side-slip on motor-bicycles. The "good old ordinary," true, was practically free from the evil, but was not this owing to the height of driving or pulling wheel, which was also the steering wheel? This was about twice the diameter of the motor-bicycle wheel. By reason of this height a less inclination was required when turning a corner than one requires on the modern safety. Again, the small solid tires took a better grip of the road than pneumatics do.

Having given the point some study, I am sure the proper place for the motor is round about the bracket, driving into bracket if possible, and in centre line of bicycle.

I have designed such a machine, and think it will be a success for the following reason:—The weight of motor low down will tend to counteract weight of rider and make the wheels bite the ground better. If you take a piece of wood about the size of a bicycle, and place a weight on top, it requires only a small tap sideways to knock it from under. If you place the weight further down, say about bracket height, you will find a much harder tap is required to dislodge the wood.

A brilliant future awaits the motor-bicycle, and it is worthy of more attention from designers. I am sure your readers would welcome further "motor-car experiences" from Mr. Buttemer. I hope he has not deserted his car for "the new love."

Yours faithfully,

GEO. GIBSON.

MOTOR-CYCLE MATTERS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Some of the troubles of many of your correspondents are so similar to some that I have experienced in the past, that a short budget may be of interest, if not of service. I have had in use more or less for nearly a year a Phebus-Aster $2\frac{1}{2}$ h.p. motor quad. With rare exceptions I always drive with a passenger on the front. The machine weighs about $3\frac{1}{2}$ cwt., or with two persons on about 6cwt. I can speak in high terms of the Aster motor and of its carburettor, and I believe if they were more known they would be much more used than they are at present.

I have experienced much trouble in driving up hills. This is, however, not to be wondered at. It is absurd to expect a small-powered motor to drive a highly-g geared machine weighing when loaded some six hundredweight up steep hills. The wonder is rather that the little engine is so powerful as it is. I am glad to say that my troubles as regards hill-climbing appear now to have disappeared. After a good deal of bother and inquiries I lately purchased, from Paris, a "Dupont" two speed gear apparatus, and had it fitted to my motor and machine. I believe the gear is not much known in this country, but I am informed on good authority that it is the best apparatus of the kind on the market. Whether this is so or not I cannot say, but I can say it most efficiently fulfils all the purposes for which it is intended. Its simplicity and moderate cost are also points that will commend it to many. To change from one gear to another is very easy—a slight movement of a small lever—involving no stoppage of the motor or machine. The same remark applies as to bringing into operation the free engine or the free running of the machine, apart from the motor. The roads being very heavy lately with mud I have found the gear of much advantage in all sorts of ways which its use alone can describe. In fact, without such an apparatus it would have been impossible to drive about with the roads in such condition as they have been lately, at least about Reading, as I know from experience during part of last winter and spring.

The conclusion I have come to is that no quad ought to be supplied without a two-speed gear. Personally I would under no circumstances take to a single geared quad again. I desire to recommend those gentlemen who have so freely in the past

advised against the use of two-speed gears, with air-cooled motors, to make themselves more familiar with the matter in a practical way before they venture to advise others against the use of an apparatus which has proved to be of such great advantage.

As regards loss of power or compression, this may be discovered at several points. I have found a leakage at the joint of the gas tube where the gas enters the motor. Of course leakages have been found at the points usually looked for, viz., compression tap, seat of inlet valve, round the joint of the cylinder head, and about the sparking plug. I have had great loss of power caused through the defective fitting of piston rings. In this instance the ends of the rings were too far apart, having been filed too much for the purpose of fitting easily into the cylinder. When loss of power has occurred, I have found the most satisfactory manner to discover leakages was to run the motor on the stand, and then test all likely parts and joints with a lighted taper or match.

A large compression tap, which can be fitted at quite a small cost, is a great improvement on the small tap usually fitted to the motor. With a large tap open there is no trouble in pushing a heavy machine, even up hill, compared to the work involved with a small tap and pushing against nearly half compression. Like many others I have found the best firing results are obtained when the points of the sparking plug are rather less than one-sixteenth of an inch apart.

Some time ago I had a short circuit very difficult to locate. It was caused by a very small defect, at one point, in the vulcanite covering the coil. This point was immediately under one of the metal bands attaching the coil to the machine. The result of course was that the current passed through this defect on to the metal band. I have had one of the Woven-glass accumulators for some time and can speak in high terms of its efficiency. Since its use the numerous sparking troubles I previously had, when using dry cells, have entirely ceased. I may, however, say I found a set of the "Meyra" very good and reasonable in price.

Yours truly,
G.

GEARS AND IGNITION FOR MOTOR-QUADS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—As an amateur I should esteem it a favour if any motorist who has an experience with motor-quads would inform me of the correct number of teeth to have on the sprocket wheel of a (Allard's) 3 h.p. motor, there being 112 on the large gear wheel. The one I have on now has eighteen teeth, which is all right for going on the level, but jibs at all the hills. I shall also be glad to know from users whether Van Raden's Woven-glass accumulators for tricycles and quads are reliable, whether they can be charged at any local charging station, and how many miles are they supposed to carry.—Yours truly,
CHUM.

THE BOLLEE VOITURETTE.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—With reference to Mr. Alan A. L. Hickman's letter in your last issue, can that gentleman or any other correspondent inform me who the makers are, and if there is more than one firm manufacturing them. I believe I have seen articles in some journal stating that bad workmanship had caused the owners of certain Bollées much trouble; also that the hind wheel should be fitted with a tire intended for a much heavier machine if it were expected to last. What is the price of the cars, and where could I obtain a detailed description of this machine with illustrations?—Yours truly,

INQUIRER.

ROYALTIES AND PATENT RIGHTS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Some short time ago an advertisement appeared in your columns stating that we were paying royalties for the use of patent rights covering the various parts of a motor-carriage. We have received, and are receiving, so many inquiries that we would be much obliged if you would give us an opportunity of

explaining the position this company occupies in regard to these patent rights.

Briefly, we hold the right without any payment by way of royalty or otherwise to make practically every known type of motor-carriage and consequently every part used in their construction. The principal types which are covered by these patent rights are Daimler, Panhard, De Dion, Peugeot, Werner. We, however, at present confine ourselves to the manufacture of the Panhard, Daimler, and De Dion types, and we are the sole agents in this country for Werner's motor-bicycle.

An important part of our business consists in the manufacture and sale to the trade of separate motors, and we are entitled to grant to our customers, should they desire it, a special licence authorising them to make any part of a motor-vehicle in which the motor is to be used, and which may be covered by any of the patents in question. In this case only a royalty equal to about 10 per cent. on the price of the motor, not the motor-carriage, would have to be paid. We supply any part of a motor-carriage, not only motors, carburettors, gear wheels, tanks, etc., but we have large wood turning, painting, and upholstering shops, and can supply wheels and carriage bodies of the very best materials and workmanship in quantities. To any part covered by the patents a licence plate is attached by us.—Yours faithfully,

The Motor Manufacturing Company Ltd.,

ALFRED BURGESS, Secretary.

A PUBLIC DENIAL.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Seeing Mr. Osborn's letter in your last week's issue, I enclose you a copy of the letter sent to Mr. S. F. Edge (who is a director of the British Motor Traction Company, Limited) and a copy of his reply. This letter appears to me to be something after the general system that the British Motor Traction Company have of all dealing with all the business they touch—if they do not want to recognise anything, each one tries to shuffle out of his responsibility by saying he does not know anything about it.—Yours faithfully,
C. FRISWELL.

[COPY.]

S. F. Edge, Esq.,

14, Regent Street, S.W.

DEAR EDGE,—At a meeting of the Executive Committee of the Automobile Mutual Protection Association, Limited, held this evening, I was surprised to hear that a report had been spread in automobile circles that I had agreed with your group to practically give away the Association in consideration of certain advantages to be given me. My only object in agreeing to meet you the other day was to hear what you had to say and report to this Association with a view to seeing whether such negotiations might be used to advance the interest for which the Association has been formed. I find, however, that apocryphal accounts of our negotiations have been spread (certainly not by me), which are damaging to me and to the interest of the Association: I beg, therefore, to inform you that I decline to discuss the matter further with you, except through the solicitor of the Automobile Mutual Protection Association, Limited—Mr. Firth.—Yours truly,

February 26th, 1901.

C. FRISWELL.

[COPY.]

C. Friswell, Esq.,

48, Holborn Viaduct, E.C.

DEAR FRISWELL,—I am rather surprised to receive your letter of the 26th; as the only people with whom the matter referred to has been discussed in the slightest degree has been with Mr. J. H. Adams and his chairman, as I could not very well speak to them about a license without telling them that we had discussed the matter together.

In no way would the conversation be interpreted in the way you suggest, and I am sending copy of your letter with copy of my reply to Adams, and I await a reply from him, which will make it very clear that no breach of faith on my side has taken place. However, your answer on the subject is perfectly clear and simple, and your action in fighting the matter for yourself should assuredly meet with much approval at the hands of the firms whose battles you will be fighting.—Yours truly,

February 27th, 1901.

S. F. EDGE.

MR. J. H. DAVIES, of the Crest Manufacturing Company, of Cambridgeport, Mass., U.S.A., writes: "I read with considerable interest your patent troubles. I shall soon put on the market a constant-level carburettor without a float, which is designed so that the present Longuemare can be altered to the new type. As soon as I get my English patent, I will send you an illustration of this device. I think it will be of interest to your readers, as it will remove the present litigation that must be a hamper to the automobile industry."

AUTOMOBILE NOTES FROM BELGIUM.

BY "AUTOMAN."

A MOTOR-CAR made anywhere near Brussels should at any rate have special virtues as a negotiator of hills—Brussels is nothing but "hills and rollers," and some of them mighty stiff ones, with narrow streets, awkward turns, and bad paving. Notwithstanding all these adverse conditions, the motor-car has taken on firmly here and can be seen gliding along all the important thoroughfares in numbers greater even, in comparison to the population, than in Paris itself. The types most in vogue are of Belgian make—Daimlers from the Ateliers Germain of 6, 8, and 12 h.p., some with the old high body, others with the latest low racing body introduced by Panhard and Levassor; little Vivinus cars (known as New Orleans in England), and the familiar light blue Pieper cars from Liège.

The question of the numbering of cars, which is the burning question with you in England, has long since been settled here. Every car is numbered and registered by the police and carries an enamelled iron plate, generally on the front axle. The plate measures about 9 in. by 5 in. with the number in black letters on a white ground. At the back of the car there is a lamp with the number painted on the glass in such a manner that when the lamp is lighted the number can be seen. The numbers are very disfiguring, and give one the impression that the cars are not private carriages, but are for hire. I interviewed the owner of a 12 h.p. Daimler the other day, and he told me that the numbering is very annoying, and gives rise to all kinds of petty interference with the rights of the subject. It removes the possibility of the owner of the car getting any independent

testimony, or even being able to reply guilty or not guilty to a charge made against him. A policeman who has nothing to do, and who feels out of temper with motor-cars in general, only needs to note down the number of a passing car, and the unhappy owner is summoned and fined on his unsupported testimony. It is monstrous to think that it should be proposed in England to interfere in such an arbitrary manner with the liberty of the subject, and it will certainly have a disastrous effect on the development of the industry, already so hampered with patent troubles and speed limitations. It is to be hoped that sound common sense will, on second thoughts, prevent the authorities from making such a retrograde step.

In the middle of next month the annual automobile charity fête will take place under the organisation of the Committee of Tours and Fêtes of the Automobile Club of Belgium, and to encourage the public to bring their cars, one of the big manufacturers has offered a silver chain and pendant to every participant driving a car turned out of their works. The A.C.G.B. and I. might take a hint from Belgium and help to overcome the public prejudice by organising a charity fête—say for the hospitals. There would certainly be a universal response from automobilists.

Petrol cars are being experimented with here for fire-engine purposes. Saint Gilles, one of the suburbs of Brussels, is

running experimentally a petrol car carrying four firemen, ladders, a drum with 150 metres of hose rolled on it, and the apparatus first required at a fire.

An automobile tour round Belgium is being organised; it will last five days and cover 300 kilometres (rather over 197 miles). To those who did the now famous thousand-mile tour in England this seems—and really is—nothing, but the roads in Belgium outside the chief towns are so execrable that speed is out of the question.

The annual International Automobile Exhibition opens at the Pole Nord in Brussels on the 16th inst. The opening ceremony will take place at two o'clock, in the presence of either the King or Prince Albert of Belgium, the heir apparent. Many of the Ministers will also be present, and it promises to be a brilliant affair. The exhibition will remain open until the evening of the 24th inst. A charity fête will be organised before the exhibition closes, and the profits on the sale of the catalogues will also be devoted to charity.

I went out the other day on a 12 h.p. Belgian Daimler, and had a chance of testing its hill-climbing capabilities and also of examining some of the points of difference between it and its twin sisters of Paris and Coventry. The change speed gear is the most salient feature, and is got at in a most satisfactory and

ingenious manner. The toothed wheels are always in gear with each other, the one set being, as usual, keyed to the shaft, and the other set being loose on a sleeve. They are put into gear by means of a slotted bush, into and through the slots of which a hollow shaft passes. On this hollow shaft are four keys solid with the shaft, which engage alternately the slots in the bushes.

The change of speed is smooth and easy, and produces no jerk. The wheel base of the Belgian Daimler is much longer than that of its English or French sister. The car is capable of attaining a speed of about thirty-seven miles per hour, and climbs 8 per cent. hills on the second speed. I hope to send you more details of this car in another letter.



Cliche de

THE TURGAN STEAM CARAVAN IN ALGERIA. (See page 17.)

[Le Chauffeur.]

AN international motor-car exhibition is to be held in Turin, Italy, in the spring of 1902.

WE hear that Messrs. De Dion and Bouton are shortly bringing out a new front-driving motor-bicycle.

M. G. FORESTIER delivered a lecture on the Heavy Automobiles before the Société des Ingenieurs Civils in Paris last week.

AT the last meeting of the Herne District Council, held at Herne Bay, a letter was read from Mr. Collett, of Southall, asking whether the council would license two motor-cars to ply for hire. The matter was deferred for consideration at the next meeting.

THE South Shields Corporation have had on trial a motor-van for the purpose of collecting and removing day refuse. After about ten days' working, a comparison was instituted between the cost of motor and horse vans, and the Borough Surveyor reports an estimated balance in favour of the motor-van, of £49 13s. 11d. per annum.

THE EMPRESS LIGHT CAR.

FIG. 1 of the accompanying illustrations gives a general view of the attractive light car with *tonneau* body which has just been put on the English market by the United Motor Industries, Ltd. The frame of the vehicle is of tubular construction; it carries the whole of the motor and transmission gear, and forms an independent chassis to which any type of carriage body—two-seated, spider, or *tonneau*—can be fitted. The engine, which is located under a bonnet in the forepart of the frame, is a $4\frac{1}{2}$ h.p. water-cooled De Dion, a pump and radiating coil being fitted in connection with the water circulation. A De Dion carburettor is employed, while the electrical ignition device is readily accessible.

Three speeds forward and a reverse motion are provided. The method of transmission and change speed gear is on novel lines, so that a brief description will not be out of place. The rear road-wheels are loose on the axle, and geared directly by spur wheels without the intermediary of chains. The variable gear box (Figs. 2 and 3) is located at the rear, the connection between it and the friction clutch being by a longitudinal shaft. For all the speeds, except the highest, the speed reduction is obtained by means of a reducing gear, but for the highest speed the motor-shaft drives the differen-

provided with clutch claws E. B is an intermediary shaft on which turns loosely a set of gears C' D' G', which cannot be displaced in an axial direction. The pinion G' remains constantly in mesh with gear G on the shaft H. It will easily be seen that by shifting the sleeve F by means of the lever Q, operated from the seat of the vehicle, the pinions C and C' may be thrown in mesh to obtain the slowest speed, and D and D' for the intermediate speed. In these two cases the motion is transmitted to the differential through the intermediary of the pinions G G'.

If the sleeve is pushed still farther, D and D' are disengaged, and the two sets of claws, or clutch teeth E E' engage, in which case the differential is driven directly from the motor shaft, and the pinions C' D' G' now rotate without transmitting any power. In the case of the two lower speeds, there is a quadruple reduction of speed between the motor and the rear road wheels, and in the case of the high speed a triple reduction. This permits of using pinions of small diameter, which are easily enclosed.

The differential shaft

J J' carries at its extremities two spurpinions M M' engaging with internally-toothed gears fixed to the driving wheels. The internally-toothed gears are entirely enclosed, the interior being filled with grease.

Ample brake power is provided, there being a band brake on the differential gear; this is operated by a foot pedal, the depression of which, to the extent of half of its movement, throwing out the clutch, the further depression putting on the brake. There are also emergency hand brakes acting on the cases surrounding the internally-toothed gear wheels; these are operated

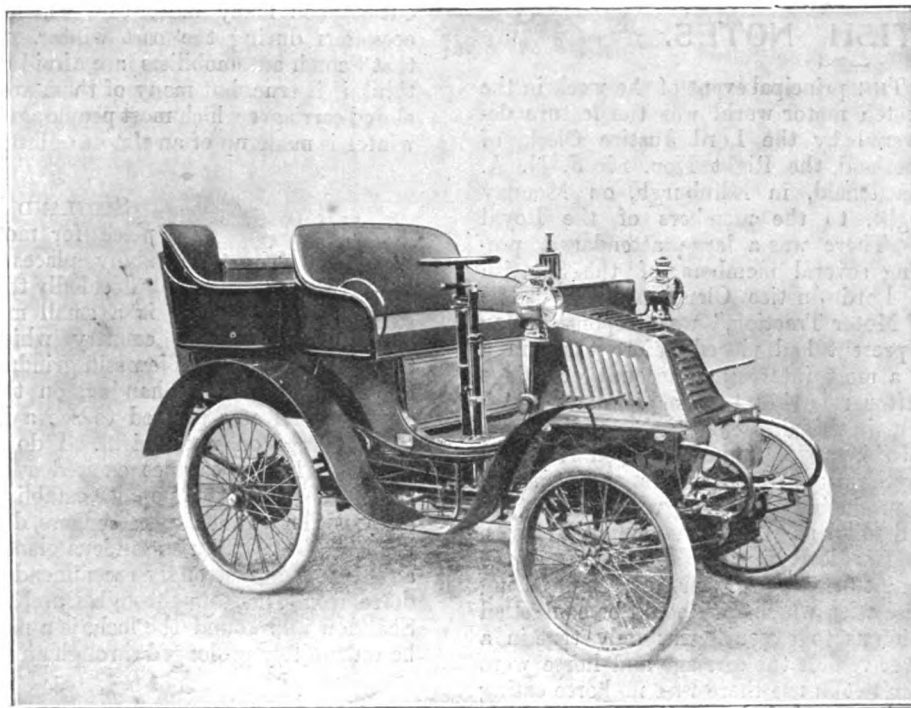


FIG. 1.—GENERAL VIEW OF EMPRESS LIGHT CAR.

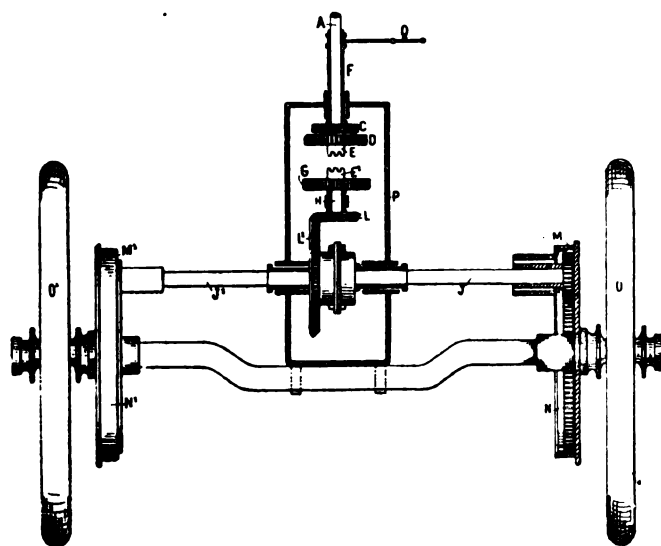


FIG. 2.—PLAN OF VARIABLE SPEED GEAR AND REAR AXLE AND WHEELS.

tial directly. The motor-shaft A passes through a sleeve F, which can be displaced in an axial direction by means of a lever. It is prevented from rotating by two feather keys in the bearing of the casing. When being displaced in an axial direction, this sleeve carries along the shaft A, which has keyed to it the two-spur gears C and D, and is

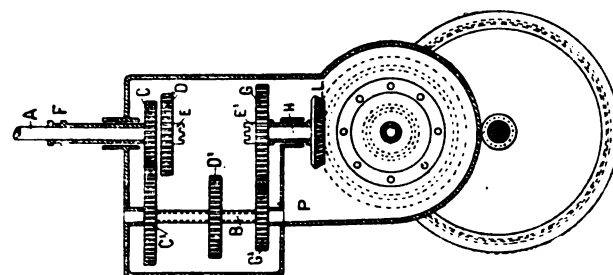


FIG. 3.—SIDE ELEVATION OF VARIABLE-SPEED GEAR.

by a hand lever. On applying either brakes, the friction clutch is first thrown out and the motor thus disconnected from the transmission. Steering is controlled by a horizontal hand-wheel, around the standard of which are grouped the various control levers so that the driver has everything convenient to his hand. The water tank is located in front of the dash board, while the petrol tank is placed under the front seat. A feature of the *tonneau* are the high backs given to the seats, rendering it very comfortable; the rear portion can be detached by removing four bolts, converting the car into a two-seated car with plenty of luggage room. The car we examined the other day was finished in dark and electric blue with yellow and black

lines and has a very attractive appearance. The body is very "roomy," and is spring suspended on the frame. Special attention has been paid to the upholstering, the seats, which are provided with springs, being covered in real leather. Cycle type wheels are fitted, and these can be shod with Dunlop, Clipper, or Michelin pneumatic tires as desired. The car, on which we hope shortly to have a trial run, weighs, complete, about 7 cwt.

SCOTTISH NOTES.

The Lord Justice-Clerk and the Society of Arts.

THE principal event of the week in the Scotch motor world was the lecture delivered by the Lord Justice Clerk of Scotland, the Right Hon. Sir J. H. A. Macdonald, in Edinburgh, on Monday night, to the members of the Royal Scottish Society of Arts. There was a large attendance, prominent among them being several members of the Scottish Automobile Club. The Lord Justice Clerk's subject, "The Present and the Future of Motor Traction," was responsible for this, and those who were present had placed before them in a clear and incisive manner a most interesting account of things automobile in general. After referring to the big start which France had obtained over us in this direction, the lecturer urged that if the present state of things was to be remedied it would not be by seeking to copy the productions of France, Germany, and America, but by producing vehicles which in style, build, machinery, and details should commend themselves to the British market. His lordship speedily dismissed the objections raised by ignorant people to motor-cars, emphasising among other things the ease with which they could be controlled and steered. The objection as to expense was only true in a sense, for in buying a power-vehicle the carriage and horse were purchased in one, and when not in use there was no horse eating its head off in the stable. As regarded the smaller size of vehicle it was quite certain the introduction of power traction would open up a way to persons of moderate means to provide themselves with an efficient road vehicle who could never afford a horse and carriage. While they could mend a broken cog-wheel or repair an exhaust chamber in a motor-car, they could not change a horse's leg or renew the inside of a "roarer." Speaking of the future of the power vehicle, on its bearing upon the social, sporting, commercial, military, and sanitary phases of life, his lordship said it might be regarded as a quite safe prediction that the next quarter of a century would see an extraordinary revival of roads as a means of communication, as distinguished from their merely local usefulness.

Utilitarian Possibilities of the Motor.

A STRONG point was made by the Lord Justice Clerk in his lecture, on Monday, in regard to the generally utilitarian possibility of the motor, and which should go a long way in helping some hesitating mortals to make up their minds to purchase a car. It would probably be found in the course of time, he said, that the possession of a motor might be of much greater usefulness in the country than was represented by its locomotive powers merely. It might be utilised to work a force-pump, run a dynamo, charge storage batteries for electric light, and, like the villa gardener, "make itself generally useful." As his lordship held, there is no reason why the motive power should be used for locomotion only, and once this aspect of the case is brought before the "canny Scot" (and Saxon, too, for that matter), who likes to get full value for his money, we may obtain a large increase in the ranks of owners.

The Effect of Weather.

THE weather in Scotland during the past week has turned a little more salubrious, and with drier roads, less piercing winds, and an occasional glimpse of sunshine, after one of the most miserable winters experienced for some years, the motor-car is once more in evidence on our highways. Having occasion to be on business in Hamilton this week, while passing

down the main street of that town, I noticed Mr. Roland T. Outhwaite, of Edinburgh, bowling merrily along on a powerful-looking Daimler, artistically painted in dark green, the business-like throb of whose engine appeared to indicate that the car in question was fit for a good hundred-mile spin; I did not know Mr. Outhwaite's destination, but as far as mortal eye could tell and the appearance of his car went he certainly looked as though he would "get there." The past few days have brought out a good many motor-cars which I have only seen on rare occasions during the past winter. I do not take this to mean that Scotch automobilists are afraid of winter driving. I do not think it is true, but many of them are also owners of comfortable closed carriages which most people agree are to be preferred when a winter is made up of an almost unbroken succession of rainy days.

An Ideal Touring Place.

SCOTLAND in many respects is an ideal place for motoring, while the roads in many places are what might be called "decidedly tough." With a good car this is a small matter, and the beauty of the country which may be traversed more than compensates for a few stiff grinds up hill. I drove up to the fine Hydropathic at Shandon, on the Gareloch, last week in a growler, and was pleased to see a horseless chariot standing at the entrance on my arrival. I do not know who the *chauffeur* was, but his appearance excited a good deal of interest among the residents at this popular establishment; and when he drove away with a load of fair passengers, doubtless for a spin round the beautiful loch, many an envious glance followed the car. This is a route I should strongly recommend to intending tourists, as the drive from Glasgow through Dumbarton and Helensburgh on to Shandon and round the loch, is a most picturesque one, and can be indefinitely prolonged through an altogether charming country.

The "Johnstone" Car.

THE "Johnstone" motor-car, the product of the Mo-Car Syndicate, is almost daily conspicuous on the streets of Glasgow. As far as I can gather there are very few of these cars about, but the one in question looks a remarkably serviceable vehicle. It runs with great quietness, and is built on somewhat different lines to the average car, a seat, on a chariot-shaped front, taking the place of the usual motor-hood. The makers experienced the usual difficulty in getting a thoroughly satisfactory working model for a pattern, but now they have got something apparently serviceable they should soon be in a position to cope with the demand, which is daily increasing for a good car.

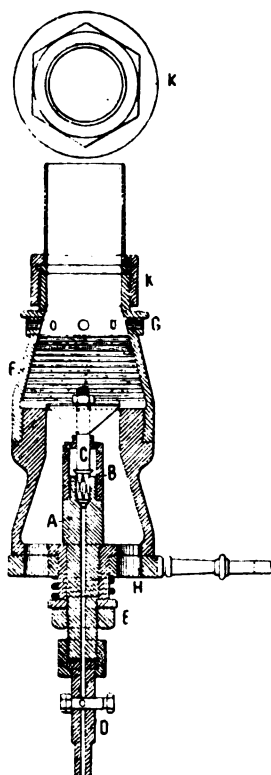
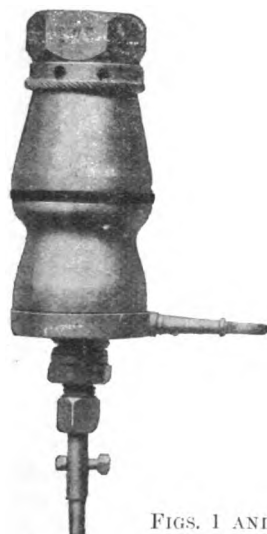
Wanted, More Enterprise!

It appears that English motor manufacturers awoke only a few weeks ago to the fact that the Glasgow International Exhibition, which has been in the course of preparation for the best part of three years, and will be opened in about six weeks' time, was to be a really important function, and one in which it would be advantageous for them to take part. At the eleventh hour an effort was made by the Secretary of the Automobile Club to get room for motor makers from the South, but the cost of erecting a special pavilion on the only remaining site was evidently too great for the limited number of makers and agents and the scheme therefore fell through. The responsibility of representing the British automobile industry at the great Exposition, therefore, falls upon a Scotch house whose name is sufficiently well known, viz., Stirling's Motor-Carriages, Limited, of Hamilton and Glasgow, who, I am informed, are the only British motor-carriage manufacturers who have secured space in the great Industrial Hall at Kelvingrove. I do not doubt that their display will be such as to suitably uphold the credit of British manufacturers. At the same time, in view of the fact that French automobile manufacturers will be represented in the special pavilion erected by the French Government, it is regrettable that a larger number of British makers are not included. I am not at liberty at present to send particulars of the special features of Messrs.

Stirling's exhibits at the Exhibition, but from what I have learned this week some new things will be shown for the first time which are certain to create a good deal of stir. BROWN HEATHER.

THE ROUBEAU CARBURETTOR.

A NEW carburettor for use on motor-cycles and voiturettes, which appears to possess certain features of merit, has lately been put on the market by La Société du Carburateur Roubeau, of Paris. A general view and section of the device are given in Figs. 1 and 2, and attention may be drawn to its small dimensions, its adaptability to any existing motor, while it is also capable of a very fine adjustment. To obtain the best result from an explosive mixture of gas and air two



FIGS. 1 AND 2.

conditions are necessary: (1) A perfect mixture of gas and air. (2) A mixture of the proper proportions. In the case of petrol motors,

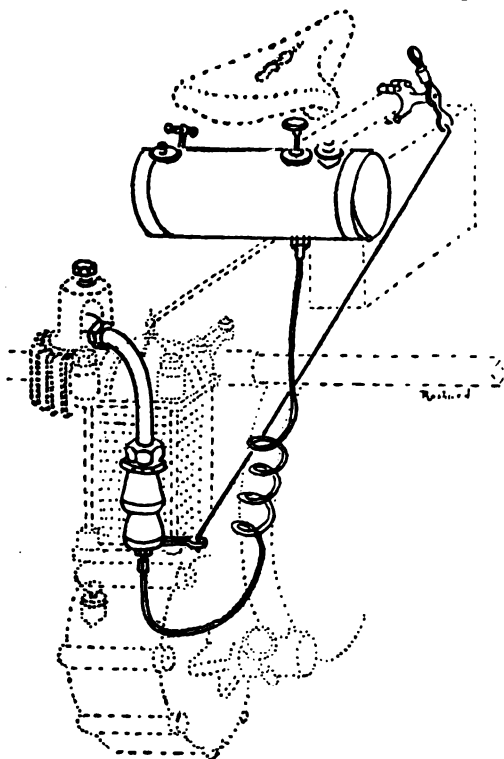


FIG. 3.—VIEW OF CARBURETTOR AS FITTED TO A TRICYCLE.

the best result is, states the designer, obtained with a mixture of 1 volume of gas with 8.340 volumes of air, or, in other words, 1

cubic centimetre of petrol with 8.340 litres of air. Any variation adversely affects the power explosion. If the proportion of petrol rises to 1 cubic centimetre for 4.5 litres of air, the mixture becomes non-explosive. On the other hand, if the volume of air is increased to 15 litres to 1 cubic centimetre of petrol, the same thing happens. The necessity of a correct mixture can thus be seen, and it is claimed that this precision of adjustment is obtained in the device under notice. M. Roubeau has utilised to the best advantage the powerful suction exerted by the petrol motor on the charging stroke, introducing simultaneously on a very small injector air and petrol in pre-determined quantities and subjecting them to complete pulverisation. The petrol flows from the tank through the pipe A into the chamber B, the upper part of which is pierced by small holes. A valve C closes the inlet pipe; it is held in place by a spring, the rod of which terminates in an inverted cone which deflects the air as it is drawn into the carburettor. Regulation of the flow of petrol is obtained by a tap, which is provided with suitable fixing arrangements, on the lower part of the pipe D. The base of the carburettor proper is pierced by six holes 7mm. in diameter, below which works a rotating piece H. The latter is provided with a similar number of holes, so that the air inlet openings can be varied or entirely closed. The top cone screws on to the bottom, and its interior is cut with a large number of circular grooves, for the more effective gasifying of the petrol. Just above the grooved part is a loose collar with eight holes 3in. in diameter, adjustable by hand. If air is allowed to enter here, suction through the lower holes is reduced, and as a consequence less petrol is drawn in. The weight of the apparatus is only about 13ozs. The company are anxious to arrange for the introduction of their device on the English market.

COUNTY COUNCILS AND MOTOR-CARS.

EAST SUFFOLK.

At a meeting of the East Suffolk County Council on Tuesday, in the clause of their report which related to motor-cars, the Committee recommended that all such cars should carry a number both in front and behind, and should be registered. Mr. C. A. Day proposed, as an amendment of the report, that this clause should be struck out.—Colonel Ward seconded.—Alderman R. L. Everett said he hoped the Council would not agree to this amendment. At the present moment many horses were very much frightened at motor cars, and, if there were no means of checking those who drive such vehicles at too fast a pace, the consequences might be very serious.—Alderman the Rev. C. J. Steward said that if this condition as to carrying a number were omitted, he hoped the Council would also omit the clause which practically removed all restrictions on pace. If there were to be no numbers on the cars, he would certainly restrict their pace to five miles an hour.—Mr. Gostling asked whether it was not the fact that in France the authorities had found that there were fewer accidents to motor-cars than to horse carriages.—Mr. W. Short thought the Council should be very careful before putting any restrictions upon new facilities of transit.—Alderman the Rev. J. F. A. Hervey considered that the carrying of numbers ought to be insisted upon as a fair return for the concession made by the Committee with regard to pace.—Colonel Buxton said the objection to carrying a number was a purely sentimental one, and Mr. George Fiske strongly supported the recommendation of the Committee.—The amendment was rejected, seven members voting for it as compared with thirty against, and the rule as to numbering and registering cars was consequently approved.

AN exhibition of motor-vehicles and accessories is to be held, under the auspices of the Reading Automobile Club, on Tuesday, Wednesday, and Thursday, the 26th, 27th, and 28th instant, in the Reading Corn Exchange, Market Place, Reading. We learn that all the available space has been taken, many of the best known motor manufacturing firms having arranged to exhibit. For the benefit of intending purchasers the committee is arranging for trial runs upon the day following the show.

THE FRENCH MOTOR-CAR EXHIBITION.

(From Our Own Correspondent.)



(Concluded from page 13.)

M. HIDIEN, of Châtillon-sur-Indre, exhibited a two-seated car, fitted with a two-cylinder horizontal motor running at 800 revolutions and developing 8 h.p. The power is transmitted to the rear road wheels by spur wheels and chains, the whole of the gear running in an oil bath. Three speeds, ranging up to 50 kilomètres an hour, as also a reverse motion, are provided. Wooden wheels and pneumatic tires are fitted, with the usual wheel steering. M. Hidien is, I understand, building an 18 h.p. racing car.

La Société des Automobiles et Moteurs Français, Courbevoie, Seine, exhibited a light carriage, which they claim can be placed in the hands of a lady or any inexperienced person. The motor is of the two-cylinder horizontal type, developing 6 to 7 h.p. at 800 revolutions per minute. The spirit is sprayed into the cylinder and fired electrically, but the company are at present not prepared to supply any details of their system. Power is transmitted by a belt from the motorshaft to the countershaft at the rear. The latter carries the differential and the change-speed gear, which gives three speeds and reverse. The weight of the car for four persons is about 11 cwt. The tanks have a capacity of twenty litres of petrol and thirty-five litres of water. The levers are conveniently arranged, the one operating the change-speed

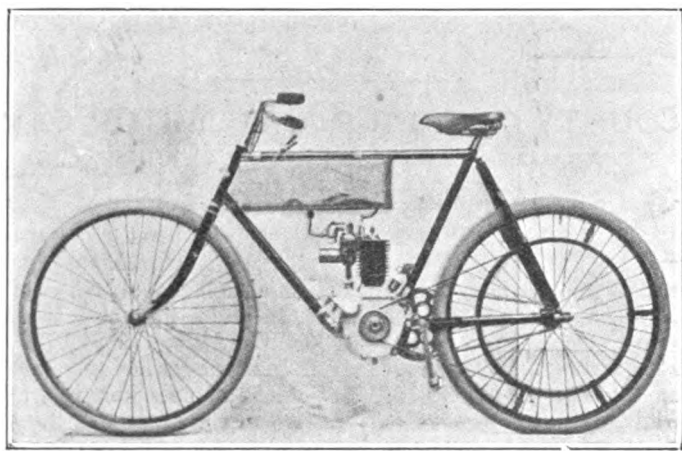


FIG. 1.—THE "SALVATOR" MOTOR-BICYCLE.

gear being behind the inclined steering wheel, while a side lever operates two hand brakes on the rear axle.

Two types of light cars were shown by Messrs. P. Morisse and Company, of Etampes (Seine et Oise), one with a horizontal motor and the other with a vertical engine, the latter running at 1,100 revolutions per minute and developing $5\frac{1}{2}$ h.p. The change-speed gear is arranged for two speeds, the third speed, or rather the first, being obtained by direct connection between the universal jointed shaft and the engine shaft.

M. E. Goujon, Neuilly sur Seine, had on view a four-seated *vis-à-vis*. Power is supplied by a low speed single-cylinder horizontal motor located at the rear, and developing $5\frac{1}{2}$ h.p. The engine is water-cooled, a pump and radiator being provided. The motor-shaft is geared directly on to the change-speed gear, and the second intermediate shaft is connected by a chain with a countershaft carrying the differential, and there is a further chain drive to the rear road wheels. Four speeds forward and reverse are provided, while the cycle type wheels are shod with pneumatic tires.

The Amiot and Peneau fore-carriage or *avant-train* system, about which so much was heard a few years ago, turned up again on the stand of M. L. Comber, of Asnières (Seine). In this case the *avant-train* is an electrical one, which can be fixed under the front part of any existing horse-drawn vehicle. This case carries a battery of B.G.S. accumulators, which are said to be able to

allow of the vehicle running from eighty to a hundred kilomètres on one charge. The motor is geared down on to a shaft above the front axle, with which it is connected by chains.

A car which comprises several interesting features was that shown by Messrs. Gillet, Forest and Co., of Saint Cloud. As I hope to send you a full description of this for a later issue, I will only mention that they claim that their motor is the most economical on the market. Power is supplied by a single-cylinder horizontal motor, the normal speed of the 5 h.p. engine being not more than 800 revolutions a minute. The rate of running is varied in the usual way by advancing and retarding the ignition, and in this way the speed can be regulated from 100 to 1,200 revolutions. The change-speed gear consists of the usual fixed and sliding trains of wheels. From the gear box the power is transmitted by a shaft to the differential on the rear axle. All the parts are enclosed in aluminium cases with oil baths. The underframe of the car is of tubular construction, and is mounted on wooden wheels. Special advantages are claimed by the firm for their radiating coil, which is composed of vertical corrugated copper tubes placed around the front part of the motor bonnet.

Considerable attention was centred on the stand of La Société des Automobiles Vallée, of Le Mans (Sarthe), who exhibited a frame carrying the propelling mechanism all complete, arranged to be drawn in and out from the channel section steel underframe of the car, so as to facilitate cleaning and repairs, and also to allow of the mechanism being used for several carriages if desired. The engine is of the four-cylinder horizontal type, developing 10 h.p. No change-speed gear is provided, power being transmitted by two belts running on flanged steel pulleys at each end of the motorshaft. Heavy jockey pulleys are provided to tighten the belts, the pulleys being raised or lowered by a pedal. One of the claims for this arrangement is that it greatly simplifies the driving gear, as the speed is varied entirely by the engine regulator.

Messrs. Caron and Co., Rue Saint Ferdinand, Paris, exhibited a four-seated *vis-à-vis*, in which the motor bonnet, of a peculiar shape, is entirely separated from the carriage body. The vehicle is propelled by a water-cooled Ardent motor developing 8 h.p. The change-speed wheels are always in mesh, and are connected as desired by a couple of clutches. From the gear box the power is transmitted by a shaft and bevel gearing to the differential on the rear axle. The firm also exhibited several air-cooled motors, which are claimed to develop $3\frac{1}{2}$ i.h.p. when running at 1,500 revolutions per minute.

Something entirely new in motor-bicycle construction was shown by the Ateliers de Construction Mécaniques Ducommun, of Mulhouse, Alsace, in which the makers have endeavoured to combine the advantages of the motor in front with rear driving. In the "Autobicyclette," as the new machine is called, the motor is fixed to the head tube, so that it does not move with the steering handles, and power is transmitted from the motor shaft by a long belt to the rear driving wheel in the usual way. The rider's leg is protected from the belt by a guard made of metallic gauze. The motor develops $1\frac{1}{2}$ h.p. at 1,500 revolutions per minute. Its power is varied by means of a lever which acts on the exhaust valve. The machine is fitted with a two-speed gear which is operated by a lever on the top tube. The petrol tank is suspended from the horizontal tube, and has a capacity sufficient to allow of the machine running a hundred miles.

La Compagnie Française des Moteurs et Automobiles "Salvator" of Rue Amelot, Paris, exhibited a new motor-bicycle (Fig. 1), in which the motor is built as part of the machine, instead of being fixed to any kind of frame. The engine is fixed on a bed connected between the bottom bracket and the end of the down tube, and is held vertically by means of bolts, so that it can be easily removed if necessary. It develops $1\frac{1}{2}$ h.p., and the transmission is by means of a belt from the motorshaft to a pulley on the rear driving wheel. The motor is cast with cooling ribs having a very large surface, and the exhaust valve is in front, so as to have full advantage of the air. A feature of the bicycle is a new method of magneto-electric ignition, the device used being said to weigh less than a pound. The petrol and induction coil are carried in the tank supported from the top bar of the frame.

Most of the motor-bicycles in the show were, with one

or two exceptions, fitted with motors with a maximum of 1½ h.p. One of the exceptions was the Cyclette Jochum, manufactured by M. Gabriel Jochum, of Nancy. The motor is the old pattern 1½ h.p. De Dion, which has been fixed on the bottom bracket by an attachment to the diagonal tube. Its novelty lies in the fact that it has been entirely enclosed in an aluminum case, which is intended to facilitate cooling of the motor by creating a strong draught of air that will enter the case at the bottom, and, after circulating around the ribs, will issue from the case at the top. For this reason a special form of fly wheel has been fitted, which draws in the air through the case. The machine is fitted with a free wheel and change-speed gear operated by a lever on the top tube. Another feature of the bicycle is the carburettor, which, it is said, will allow of the motor running equally well with alcohol or petrol. The maker claims that this machine will go up any hill without the aid of the pedals. It may be added that the weight of the machine is 99 lbs.

THE BOLIDE ELECTRICAL IGNITION.

WE are now able to give illustrations of the ingenious devices in connection with the electrical ignition of the new Bolide cars of Messrs. Leon Lefebvre and Co., of Paris, to which reference was made in a recent issue. From Fig. 1 it will be seen that the ordinary flat spring trembler has been dispensed with, its place being taken by a spiral spring arrangement somewhat similar to that now in use by the Decauville Company. Fig. 2 illustrates the small apparatus employed for verifying the state of the electric ignition. The method usually adopted is to try the sparking plug in open air by with-

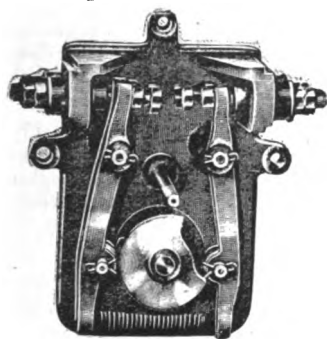


FIG. 1.

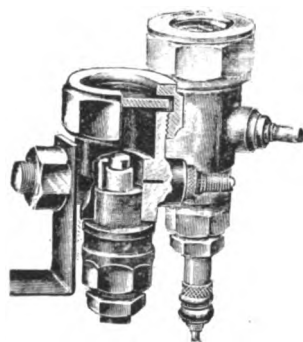


FIG. 2.

drawing the induction valve. But this system is entirely wrong, for the conditions are totally different. When in work there is a very considerable pressure existing in the cylinder, which, with the removal of a valve, entirely disappears. Without pressure the spark will often appear quite effective, but subject to some eight or ten pounds of pressure it cannot be produced. The "Bolide" apparatus permits of the testing of the sparking plug under conditions approaching those existent during its actual work, and by means of a small glass one can see whether or not the spark is produced as it should be. The arrangement is small and light, and can be used in connection with any sparking plug and any make of tire pump, for an air pump has naturally to be used to create the necessary pressure.

DE DION-BOUTON, Ltd., is the new title adopted by the De Dion Bouton British and Colonial Syndicate, Limited.

THE Schwanemeyer Motor Manufacturing Company, Limited, has been registered with a capital of £7, to carry on the business of cycle and motor-car manufacturers and merchants, engineers, etc.

A DECISION of importance to French automobilists was delivered in the Paris courts recently, when President Baudouin declared illegal the interdiction placed by the proprietors of a handsome property in the fashionable Monceau quarter, on the entry of an automobile into the courtyard of the building. After the question had been argued by counsel for both parties, the judge declared that automobiles had the same right of access to courtyards as other vehicles.

HERE AND THERE.

WE understand that the Easter tour of the Automobile Club will be to Salisbury.

WE hear that it is probable a motor service will shortly be started at Weymouth.

MESSRS. S. BROWN AND CO., New Street, Brompton Road, S.W., inform us that they have accommodation to store cars of any country motorists visiting London.

MAJOR H. C. L. HOLDEN delivered a lecture on Automobiles and their Use for Military Purposes before the members of the Royal Artillery Institution on Thursday last.

MESSRS. ORMISTON AND GLASS, the well-known pen manufacturers, have for some time past had two motor vans in use. They have now ordered a third one from the Motor Manufacturing Company.

THE employees of the Daimler Motor Company held a smoking concert on Friday last in Coventry Cross for the purpose of presenting Mr. W. Patterson, their late works foreman, with an illuminated address.

IN a circular to the shareholders, Mr. A. Burgess, the secretary to the Motor Manufacturing Company, Ltd., states, "that the sales made and orders taken from the beginning of November to the end of February were exceedingly good, i.e., £32,000."

MESSRS. HEWETSONS, Ltd., the British agents for the Benz cars, are moving into larger premises. They have purchased the lease of a commodious shop and warehouse in the Tottenham Court Road, which is being equipped with tools for the purposes of repairs, a lift from basement to the fourth floor, etc.

MOTORISTS passing through Ashford will be glad to know that petrol supplies can be obtained from Messrs. Brenchley and Davis, 1, Norwood Street. They are also well equipped to carry out any necessary repairs.

THE police authorities at Nice are looking for a *mecanicien* named Champion, who was employed by an attaché to the Russian Embassy in Paris. Champion took out his employer's car for a little jaunt with his friends and smashed it badly. He then left it at a *garage* for repairs and disappeared.

THE Council of the C.T.C. have petitioned the President of the Local Government Board in opposition to the suggested restrictive measures affecting automobilists. The President of the L.G.B. has caused an acknowledgment of the receipt of it to be sent to the C.T.C. with the promise that it shall be duly considered.

MR. NEVILLE GRENVILLE has been busy educating the members of the Somerset County Council with a steam carriage he built in 1875, and later with a motor-tricycle and trailer. The consequence was that at the last meeting, when the proposed restrictions came before them, the Council resolved to have nothing to do with them.

IT is announced that a novel system of pacing is about to be introduced at the Friedenau cycle track in Berlin. A number of electric motor tandems are to be acquired, but, instead of the electrical current being furnished by accumulators carried on the machines, an overhead wire, the same as used in connection with electric tramways, is to be erected around the track, the machines taking the current from this by a trolley.

THE following is a list of firms who have signed the memorial of manufacturers to county councillors in addition to those already published:—Aberdare Valley Motor Service Company, Limited; Brooke and Co., Limited, Lowestoft; E. H. Clift, Kensington; Dougill and Co., Limited, Leeds; George Dower, Wick, N.B.; Durham, Churchill and Co., Sheffield; Ideal Storage Battery Company, Church Passage, London, W.C.; Morris Bros., Pontypridd; H. J. Mulliner, London, W.; New Century Motor Syndicate, Limited, London, E.C.; Oxford Motor-car Company, Oxford; Steam Vehicle Company of America, London, E.C.; Shippey Bros., Limited, London, E.C.

A MOTOR FIELD BATTERY.*



By MAJOR H. A. BETHELL, R.F.A.

WE sometimes hear it suggested that in a few years' time our horses will be done away with, and our guns pulled by motor-cars. Such statements are not usually taken seriously. Yet more unlikely things have come to pass. People who deride the idea have possibly never even seen a modern steam car. It requires only a short acquaintance with steam motor-cars to dispel one's vague notions of the absurdity of a steam engine careering across country, and to make the most hardened conservative admit that there may be something in the idea. But whether it is practically possible or desirable, in the present stage of development of the motor-car, to replace our horses by motors is quite another question. It may help to answer it if we set forth the principal facts about steam-motors as now made, the objections to the steam car, and the advantages to be gained by its use.

Steam cars are made by six or seven principal firms in this country. They are largely used as heavy lorries and brewers' drays, and to a less extent as pleasure carriages. There are few places in England inaccessible by road, so that the demand has hitherto been principally for road cars. But orders are now coming in from abroad for cars capable of getting across country, and a type of car is being developed to meet the demand. The steam motor has no connection with the old road engine, with its cylinder and crank shaft on top and its huge fly wheel. Imagine instead a steel box about the size of a uniform case. Inside this a small high-speed engine is running at perhaps 600 revolutions per minute. It runs in an oil bath, so that it requires no oiling, and it has no loose or adjustable parts. Silent-running toothed wheels reduce the speed to convenient limits and convey the motion to the driving wheels. The boiler consists of a nest of small tubes surrounded by flames. The water is forced through these tubes either by a pump or automatically by the action of the steam. There is very little water in the boiler, and as fast as the steam is used water is pumped in to replace it. Steam can be raised in one of these boilers, starting with everything cold, in about half an hour from the time of lighting the fire. But for the chimney, the whole engine and boiler as turned out by some makers might be stowed away under the driving seat of a brougham. The chimney is certainly a nuisance. Its top is usually about 8 feet above the ground, and the height cannot well be reduced, as a good draught is necessary to make the fuel burn without smoke. It is quite possible to do away with the chimney and obtain the necessary draught by means of a fan, but this would spoil the simplicity which constitutes the chief advantage of the steam motor over the oil car. It will be noted that these objections to the steam car as a pleasure vehicle are not of great importance from the military point of view. Neither a steam car nor a gun limber can be considered a perfect pleasure vehicle. The military objections to the motor are more serious, and will be considered later on.

The carriage to which the motor proper is applied varies in build according to requirements. For military purposes, and generally for travelling over rough ground, the carriage would either have three wheels or a so-called three-point suspension. This means that the framework rests on the hind axle at both ends, but only on the centre of the fore axle, which turns upon a fore-and-aft horizontal pivot, so that the fore axle is capable of oscillating vertically through a considerable angle. This enables the wheels to adjust themselves to irregularities of the surface. I am not aware, however, that this system has yet been tried over really bad ground. The three-wheeled type would appear better adapted to going across country, but is open to two objections. One is that owing to side-slip it steers badly on muddy roads; the other is that on uneven ground the whole weight is liable to come upon the single wheel and bury it in the ground, unless the wheel is made abnormally broad in the tire. Moreover, as a three-wheeled vehicle has to make three tracks in the dirt as against two for the four-wheeler, the former runs heavier and requires more power to attain the same speed. None of these objections can be considered conclusive, and it can only be determined by experiment whether the three-wheeled type is better than the four-wheeled type, and how far either of them is applicable to military purposes.

In addition to the ordinary gearing for running on the road, a military car would be fitted with powerful slow-speed gearing for use in bad ground, and a winding drum with 100 yards (25lb.) of wire rope for warping itself out of difficulties. For artillery purposes, a motor would be constructed to carry 100 rounds of ammunition and six men, and the gun would be limbered up to it in the ordinary way. Presumably the gun would be a heavy high-velocity 15-pr. quick-firer with axle-tree shields, similar to the guns now being issued, but more powerful. Wagon bodies similar to the present ones, but carrying 100 rounds instead of 64, would be drawn by motors exactly similar to the gun motors and interchangeable with them. This would give 300 rounds of ammunition per gun in the first line, and detachments of 12 men per gun besides the drivers. Five other cars, similar in construction but different in fittings, would carry the five officers, with the range-takers and battery staff. These cars would be capable of pulling guns if required. A battery travelling kitchen, officers' mess car, and an advance and rear guard of cyclist scouts would complete the turn-out.

Now if the motor-car will do what its advocates claim for it, a battery equipped as above would have many advantages over a horsed battery. It would have more powerful guns, twice as much ammunition,

and would carry its own baggage; it would, in fact, be complete in itself. Such a battery could march 12 miles an hour, or 100 miles a day. It could move nearly as fast as a horsed battery over ordinary European fighting ground, i.e., cultivated fields; it could move at 3 miles an hour over ordinary rough ground; and only really bad ground, such as a field battery traverses at a walk with detachments dismounted, would be impassable to it. It would require a less number of men than a horsed battery, and cost considerably less; it would also occupy less space on the road when marching.

OBJECTIONS TO THE MOTOR.

Such being the advantages claimed for the motor, let us consider the objections.

Want of Mobility.—In the first place, it is doubtful what a motor of the proposed "flexible" design would be able to accomplish off the road. We know that a motor is all right on the turf, and we may fairly expect that over heavy but not broken ground, such as standing crops or a ploughed field, the motor will be able to get along by using its low gear, giving treble power* and one-third speed. But we do not know whether uneven ground will stop the motor; if it does, this will be a serious objection, as much good ground will be closed to the motor by the necessity of having to pass an occasional difficult bit. It is hoped that this point will shortly be cleared up.

Several cars for the foreign market, specially designed to move across country, are now being built, and we may hope to learn a good deal from the manufacturers' trials. It would be more satisfactory if the War Office would order an official trial, say in the Long Valley at Aldershot, to determine the capabilities of steam motors. Several leading firms—among others Messrs. Thornycroft, of Chiswick, and Messrs. Simpson and Bodman, of Manchester—are anxious to build vehicles to Government specifications, specially designed for military purposes.

It is to be hoped that the example of the French and Austrian Governments, who have carried out extensive and successful experiments this year, will induce our Government to make a move in the matter. Taking the most unfavourable view, and supposing that the motor is practically restricted to roads and cultivated ground, a very good case may be made out for its use for home defence. There are very few places in England (or indeed in Western Europe) which are not within a hundred yards of a road or track of some sort, and those places are not likely to be the scene of real warfare. No general would be likely to select Dartmoor or Salisbury Plain as a theatre of war. Warlike operations in Europe will be confined, as in the past, to populous districts affording food for men and horses and roads for the transport of supplies; and in such districts rough uncultivated land is rarely to be met with.

Liability to Break Down.—The next objection to be considered is the liability of the motor-car to break down. We are accustomed to regard the ordinary petroleum car as a most unreliable vehicle, constantly getting out of order, jibbing at starting, and otherwise misbehaving. This, however, does not apply to steam cars. Purchasers of steam wagons are not apt to let them stand idle, and they are usually worked quite as hard as a military motor would be worked in war time. Under these conditions experience shows that the steam motor is comparatively free from break-downs, and that casualties, when they occur, are almost invariably due to mistakes made by the drivers.

Liability to Sink in Soft Ground.—Another objection is, that the great weight of the motor would cause it to sink in soft ground. Now a motor to carry 100 rounds of 15-pounder ammunition, and six men with their kits (say 3,000lbs.) and to pull a gun in addition, would weigh about 3 tons. The weight of the driver, fuel, water and accessories, would bring the weight up to about 5 tons in all. This is two and a half times as heavy as the present ammunition wagon. Therefore, if the wheels, being of the same diameter, are made two and a half times as wide in the tire (say 8-in. driving wheels and 4-in. leading wheels), the motor will be no more liable to sink than our present field artillery carriages.

Vulnerability in Action.—If one horse of a team is struck, the gun can go on with the remainder; but if the motor is disabled the gun must stop. Now the boiler and machinery of a motor-car, taken sideways, offers just about the same target as a horse, or some 2 square yards. Therefore the motor-car is three times less likely to be struck than a team of three pair of horses. Seen end on, the car offers about 1½ square yards of target as against, say, 3 yards for the team, and is, therefore, half as likely to be struck. Set off this against the fact that three horses of a team may be killed without permanently stopping the gun, there is not much to choose in point of vulnerability. Moreover the boiler and machinery of the car are only penetrable at short range by rifle bullets, and as a rule the car if struck is easier to repair than a horse.

I attach an extract from a specification submitted by Messrs. Simpson and Bodman of Manchester:—"The vehicle is so designed that the penetration of a bullet will in very few cases affect the working of the car. The boiler tubes being so constructed that it is almost if not quite impossible to penetrate them, and in the event of this being done, it is only a matter of a few minutes to blank a tube off (as every joint is outside the boiler, there is no necessity for cooling down). In the event of one side engine being disabled the other side engine is of sufficient size to run the vehicle with scarcely any loss in speed."

While on this point it may be noted that the number of motors of similar power proposed for the equipment of a battery gives considerable flexibility. Thus in case of a breakdown each of the five officers' cars could pull a gun, and by reducing the road speed to eight miles an hour

* From the Proceedings of the Royal Artillery Institution.

* Or six-fold power for a short distance, by admitting steam direct to the low pressure cylinder.

each of the wagons could limber up a gun behind it, leaving the six gun-motors spare.

Danger from Fire.—It may be objected that it is dangerous to carry ammunition on the same carriage as a furnace, especially when the latter is liable to emit sparks from the chimney. The answer is, that in the first place there is no danger from the direct heat of the furnace, as the water tank may be placed between it and the ammunition. As to the sparks, cordite or ballistite cartridges carried in closed brass cases, as in the new equipment, may be considered fairly safe from accidental ignition.

Delay in getting up Steam.—Starting with everything cold, it takes from twenty to thirty minutes, according to the pattern of boiler, to light the fire and get up working pressure of steam. Two thirds of this time is taken in getting the fire to burn, and by adopting extreme measures—such as firing up with a truss of straw and a tin of gun-grease—steam might be raised in ten minutes. On service there would be no difficulty in banking the fire so as to keep the boiler hot and raise steam in a few minutes. Comparing this with the time taken to harness up and hook in a battery, we may estimate the difference at only from five to ten minutes in favour of the horses.

Visible Smoke.—This would be a serious matter on service. When using wood or miscellaneous fuel it would be impossible to prevent the position of the motor from being disclosed by clouds of smoke. To obviate this it would be necessary to carry a store of coke or charcoal, to be replenished whenever possible, for use in the presence of the enemy.

Comparative Expense.—The following table shows the comparative cost of the motor-car and of a team of six horses. The cost of a complete battery equipped with 18 motors (including officers' cars and spare motor) would compare in the same proportion with a battery horsed with 108

Tactics of a Motor Battery.—The special qualities of the motor-car would entail some minor modifications in the tactics of a battery. In the first place, owing to the high road-speed of the motor and the reduced space occupied, the wagons would always be able to accompany the guns. The effect of this would be, that a gun would always have its full detachment of twelve gunners close at hand. This enables a gun to be unlimbered under cover, and run up by hand to the top of a ridge, without exposing the motors to view or to fire. When retiring guns from action it would often be possible to halt the motor under cover behind the battery, run out the wire rope, and haul the gun back to the motor, instead of bringing the latter on to the crest to limber up. Each car, though only provided with seats for six gunners, would carry eight more standing without risk of breaking down; this provides the means of carrying into action an infantry escort of 96 men, besides the 40 that could be carried on the officers' cars.

As the motors could only conveniently carry a supply of fuel for 40 miles and water for 20 miles, a portion of the advance guard would be constantly occupied in commandeering baskets of coal and buckets of water from the houses along the line of march, ready to hand up to the motors to enable them to replenish bunkers and tanks without stopping.

Distribution of a Motor Battery.—Taking the battery in column of route on the road, the distribution would be as follows:—

1. Advance guard of twelve cyclist scouts, relieved every hour.
2. Battery commander's car, carrying the major, sergt.-major, range-takers, pay-sergeant and cash-box, and the major's servant.
3. No. 1 gun motor, carrying sergeant and five gunners.
4. No. 1 wagon motor, carrying corporal and five gunners.
- 5-6. No. 2 gun and No. 2 wagon.
7. Leading section commander's car, carrying subaltern, sergt.-



A LOCOMOBILE IN THE SNOW.

horses. But there would be a considerable additional saving in peace time on the motor battery, as probably only 12 out of the 18 motors would be in use.

COST OF A TEAM OF SIX HORSES FOR SIX YEARS.

The annual cost of a driver is	£51
The annual cost of a horse, including stabling, saddlery, shoeing, and veterinary attendance, is £44 19s. 7d., say	45
[The average of our Home Establishment provides 0.75 driver per horse, therefore a 6-horse team has 4½ drivers.]	
6 horses 6 years at £45	£1,620
4½ drivers 6 years at £51	1,377
Total	£2,997

COST OF A MOTOR-CAR FOR SIX YEARS.

Cost of car	£600
1 driver 6 years at £80	480
½ spare driver at £70	210
Fuel and oil for 12 hours a week under steam	205
Renewal of boiler tubes and refit after 3 years	50
Annual refit and painting, 5 years at £30	150
Barrack accommodation 6 years at £10	60
Total	£1,755

This estimate is on the supposition that the car is under steam about twelve hours a week. The driver's pay is reckoned at 2s. 6d. a day and his clothing at £7 a year, with the rank of artificer-corporal. From the above figures it will be seen that by using the motor-car a saving of £1,242, or £207 per annum, is effected.

major's clerk, battery office box, second-class artificer, subaltern's servant, and spare driver.

8-17. Centre and rear sections, similar to leading section, except that one subaltern's car carries the tailor instead of the sergt.-major's clerk, and the other the shoemaker.

18. Captain's car, with captain, Q.M. sergeant, Q.M. sergeant's clerk, chief artificer, wheeler, and captain's servant.

19. Officers' mess car and mess sergeant.

20. Men's travelling kitchen and three section cooks.

21. Spare gun-motor, with assistant wheeler, storeman and Q.M. sergeant's stores.

22. Rear guard of six cyclist scouts, relieved every hour.

Road space occupied at 4 yards interval, excluding advance and rear-guards, 221 yards. This is a good deal less than is occupied by a horsed battery, which with its five spare carriages takes 335 yards, besides the space occupied by spare horses.

(To be continued.)

"By Automobile to Paris" is the title of an interesting article in the current number of the *Argosy*.

RETURNS just issued shew that during last year motor-cars valued at £20,360 were imported into France as compared with £18,906 in 1899. The importance of the French automobile industry is well shewn by the fact that last year cars valued at no less than £376,400 were exported from the country, this total contrasting with £170,374 in 1899, and only £69,974 in 1898.

PUBLIC MOTOR-CAR SERVICE IN SOUTH-WEST LONDON.



THE South-Western Motor-car Co., Ltd., has been formed to run a service of light motor-cars between Streatham, Upper Tooting, and Clapham Junction, via Tooting Bec, Trinity, and Windmill Roads. The communication between these important districts has hitherto been of the worst description, and it has been arranged that the cars will complete the entire distance in twenty-five minutes, a little less than half the time taken by ordinary buses. The fares will be at popular prices, and the directors feel certain that as soon as this method of rapid transit becomes more widely known, the system will be assured of popularity.

The inauguration run took place on Wednesday last, and a large crowd assembled at Balham to see the start. There were lined up outside the Company's depot in Balham High-road, seven vehicles, six of them high-class and serviceable wagonettes manufactured by the Motor Manufacturing Company. Mr. Burgess, on a M.M.C. Panhard, led the procession, and a cold but pleasant run to Staines was enjoyed. At the lunch Mr. Hooper, chairman of the company, presided, and was supported by a large and distinguished company.

The Chairman (Mr. A. Hooper) read a letter of apology from Mr. A. J. Balfour, who was obliged by the invitation, but regretted that his Parliamentary duties prevented him from attending. Mr. Councillor Hunt also wrote to the effect that if they could prove that it was unnecessary to cut up our roads, and put down tram lines at a cost of £3,000 per mile, they would have done good service. Continuing, the Chairman said that the credit for establishing the service belonged to Mr. French, whose practical knowledge they counted on for the success of the new venture. Their Secretary, who was the largest shareholder in the company, was an American, who would bring the push and energy of his countrymen to the service of the company.

Mr. W. F. French said that this was the pioneer venture of its kind for London, but one which, he believed, would be a thorough success. The public were only too ready to support them, a fact of which he had had ample proof in the last few days. The company could carry them as cheaply as any present system, and in less than half the time usually occupied by a bus or tram. The experience he had gained up to the present showed that most of the companies running in provincial towns had been organised by professional gentlemen who were in the hands of their employees, and there had been failures where there should have been successes. He was going to run this company on commercial lines. He had had considerable experience in locomotive work, and it was his intention to run the service on similar lines. There would be a certain number of breakdowns, no doubt, but the proverbial stitch in time would save many of these. They would endeavour to run to schedule time as soon as they got their full complement of cars. They proposed to run four cars and keep one as a reserve; perhaps they would have to keep two. In locomotive shops they always reckoned to have the same number of engines standing as were running, and though the company could not afford to do that, they would, he hoped, be able to keep schedule time. It was the intention of the company also to job cars for business services, as they felt sure that their value for advertising purposes, as well as for quick despatch, would ensure a large demand. He had had several inquiries already for cars for jobbing purposes, and there was no doubt that motor-cars would eventually become very popular. They also intended to run cars for private purposes, as they could give customers a run of twenty-five miles into the most beautiful parts of Surrey on a Wednesday or Saturday afternoon, and bring them back again, at a charge of 3s. 6d. to 4s. a head, and with great profit to the concern. If they could run these cars faster than the bus, they would command all the patronage they could take, and if they found that the fares they were now prepared to accept did not pay, they would raise them, and so command the cream of the traffic even then. He believed they were fully justified in their new undertaking.

The Rev. Mr. Anderson, an alderman of the Wandsworth Borough Council, said that he most cordially agreed with the point made by Mr. Hunt in his letter to the chairman of the company. One of the greatest difficulties that they as Borough Councils had to deal with was the constant way in which their roads were invaded by all sorts of companies—gas, water, and telephone—who had monopolies and rights of way over those roads. Their progress was constantly blocked, and it was further impeded when they had a system of tramlines laid down. If the company could in any way prevent this terrible invasion, and give them speedy means of communication from point to point, they would do an amount of good work which, he was sure, would not only command the support of such public bodies as he represented, but that also of the public at large. He would venture to predict that it would not be long before the new undertaking was a great success; in fact, he regarded their departure that morning as one of the best that had been made in the neighbourhood for many a long day. The speaker quoted instances of foolish opposition to railways that had been displayed in the Tooting district, and added that they would now welcome anything that would tend to promote better transit. The nimble vehicles they had come along in that day were far more suited to the requirements of the public than the ponderous tram-cars.

Dr. Lucas said that the journey down had certainly opened his eyes as to what would be the locomotion of the future.

Mr. Alfred Burgess said that they had heard something about the failures that had been made with motor-buses in the past. In nine cases out of ten those failures had been due to the inexperience of the people

who had undertaken the work. While they could point to failures, however, they could also point to successes, as at Bournemouth, where twenty more cars were to be introduced to extend the business. If public service cars were only kept clean they would give no trouble whatever.

Mr. C. Cordingley said that Mr. French had anticipated Mr. Balfour's proposals as to the solution of the difficult problem of moving the population from London to great distances.

Mr. H. J. Swindley hoped that the Councillors present would remember, when some motion was brought before them as to speed restrictions, that no harm had resulted from the speed at which the cars had travelled that day.

The Chairman thanked the visitors, and the gathering broke up.

HE'S STILL A MOTORIST!



They said you wouldn't balk or plunge or rear;
Yet home I'll have to walk and leave you here.
As gentle as a lamb, they said you'd be;
As vicious as a ram you've been to me.
They said you wouldn't shy or run away;
Yet here lie you and I, both wrecks to-day.
They said you'd never try to "take a fence";
You took it on the fly and moved it hence.
The horse's fastest gait was slow for you;
You had the ass' trait of meekness, too;
You were with ease controlled, or so they said;
Yet here but now I rolled out on my head.
Oh, once more let me feel that I'm astride
The good old horse or wheel I used to ride.
They never left me sore as here I'm seen,
Preserved, with bumps galore, in gasoline.

—Chicago Post.

FURIOUS DRIVING CASE.



AT the Hove Petty Sessions on Monday, Mr. J. H. Gladding, of Clapham, London, was summoned for that, being the driver of a light locomotive on the London Road, Patcham, he did drive at a greater speed than twelve miles an hour on February 16th. Mr. Staplee Firth defended. Defendant did not appear, but a letter was read from him explaining that he was unable to attend. P.C. Leverett stated that the measured furlong was covered in 29½ seconds, which was equal to a rate of 15 miles 2 furlongs an hour. Corroborative evidence was given by P.S. Dalmon and P.C. Baker. Mrs. Pawley, a lady who was travelling with the defendant, said she did not think they were going at more than ten miles an hour. They were "crawling along," as she was nervous. Mr. Firth disputed the accuracy as to the time in which the furlong was covered, urging that a mistake might have been made, but the magistrates convicted, imposing a fine of 5s. and costs.

NOT A LOVER OF MOTOR-CARS.



BEFORE the Brighton Borough Bench on Monday, Astley Metnerell, on bail, was charged with being drunk while in charge of a horse and cart in Ship-street.—P.C. George Tucker said on Saturday evening about 7.45 he saw prisoner driving a horse-drawn vehicle in New-roid. He turned into North-street, and as he did so witness noticed that he was swaying about on the seat. Seeing that he was drunk witness took him into custody. Basil Eyles, an electrical engineer, in the employ of the Corporation, said about 6.30 on Saturday evening he was riding a motor-quadracycle in New-road, when prisoner, who was driving in a reckless way, cut across him very sharp, and afterwards tried to pass him on the wrong side of the road. Had not witness pulled up very sharply there would have been a collision. Prisoner afterwards followed him round Grand-parade, up North-street, and into Bond-street, and witness lodged a complaint as to his reckless driving. Prisoner said he was more obstinate than drunk, and was very sorry for what had occurred. He was not a lover of motor-cars, and supposed that the sight of one spoilt his temper.—Fined 10s. and costs, or 14 days.

USING A MOTOR-CAR WITHOUT A LICENCE.



AN adjourned Justice of the Peace Court was held in the Sheriff Court, Dundee, on Wednesday, last week, for the purpose of considering a complaint at the instance of the Excise authorities against Mr. Alexander Ross French, dentist, who it was alleged was using a motor-car without having a licence. It will be remembered that the case was adjourned some time ago pending the decision of the Sheriff regarding the ownership of the car now in dispute. Mr. James Magowan, supervisor, Brechin, stated that the case was still in exactly the same position as at the previous J.P. Court. The supervisor having, in response to the Bench, stated that he had no objection to adjournment, the case was fixed for the first Wednesday in December.

MR. MARK MAYHEW, L.C.C., passed through Paris on Saturday last with his 16 h.p. Napier car. He was en route for Nice, where he takes part in the tourists' race on the 25th inst., as a kind of preparation for the Gordon-Bennett Cup race.

THE Motor-Car Journal.

VOL. III.]

LONDON, SATURDAY, MARCH 23, 1901.

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COMMENTS.



AS briefly mentioned in our last issue, Major H. C. L. Holden, Superintendent of the Royal Gun Factory, Woolwich, gave a lecture to the members at the Royal Artillery Institution at Woolwich on Thursday last week, on "The Automobile and its Possible Uses in Warfare." He described various types of steam and petrol motor-cars, referring to electric vehicles as outside the range of practicability. The work done by steam tractors at the French manoeuvres was illustrated by lantern slides, and the speed and other qualities of petrol cars were also enumerated. He believed that the automobile would yet become an important factor in tactics, and the transport of infantry at a very high rate of speed was even now practicable. The cars could be protected from rifle fire by plates of nickel steel, and could carry defensive weapons, such as Maxims, which would render them formidable adversaries if attacked. Among less obvious applications for the automobile was the carrying of search lights, which had hitherto had to be dragged into position by horses. For the crossing of rivers quicker means of hauling boats could also be arranged by means of automobiles. The Röntgen rays apparatus could be easily worked, and for wireless telegraphy automobiles could be fitted up with the necessary appliances. The Hon. J. Scott Montagu, M.P., Colonel Crompton, Major-General Sir F. Maurice, and others also spoke, and the officers present were afterwards taken for rides on several cars provided by members of the Automobile Club.

The Gordon-Bennett Cup Race.

THE forthcoming International Cup Race is beginning to form the topic of conversation in motoring circles both at home and on the Continent. As is already known, the race is fixed for May 29th, the start probably taking place at Ville d'Avray at 3.30 in the morning. The five German vehicles entered for the race comprise a 32-h.p. Benz, a 70-h.p. Cannello-Durkopp, and three 35-h.p. Daimlers (Mercedes), one of these being probably driven by Herr Tischbein, director of the Cannstatt Daimler Company, another by M. Albert Lemaitre, and the third by M. Loraine Barrow. The eliminating race, under the management of the Rhenish Automobile Club, will take place on May 12th, on the Mannheim-Pforzheim road, over a distance of about 168 kiloms.

County Councils and Motor-Cars.

INCLUDED in the proceedings of the Highways Committee presented to the meeting of the West Riding County Council last week was the following recommendation:—"That this County Council are of opinion that all motor-cars should, for the purposes of identification while travelling, be numbered or otherwise marked and registered, and that the drivers should be under obligation to stop when signalled to do so." Alderman

Sheepshanks objected to putting a light motor-car in the same category as a traction-engine. There was a distinct difference between them. He did not think that any vexatious restrictions should be put upon motor-cars, which had come to stay. They might almost be put in the same category as electric tram-cars. Horses, it was true, might be, and were, extremely frightened at first; but horses had got to get accustomed to these things. He moved that the paragraph containing the recommendation stop short of the final suggestion. Mr. Morris seconded. Eventually the matter was referred back to the Highways Committee, with the object of having the matter further considered and the recommendation differently worded.

The Irish Automobile Club.

THE Irish Automobile Club held their annual general meeting in Dublin last week. The chair was taken by Mr. W. G. D. Goff, J.P. The club officials and executive committee for the ensuing twelve months were elected as follows:—Chairman, Mr. W. G. D. Goff, J.P.; hon. secretary, Mr. R. J. Mecredy; hon. treasurer, Mr. C. W. Grimshaw. Committee: Lord Louth, the Hon. Leopold Canning, Colonel J. Magrath, Mr. E. O'Connor, Mr. C. C. Yeldham, Captain H. R. Langrishe, Mr. J. H. Glenn, Mr. W. Bexton, Dr. Pryce Peacock, Dr. J. F. Colohan, and Mr. A. J. Orr. It was announced that the A.C.G.B.I. had decided to hold a fortnight's tour round Ireland in August next, terminating in Dublin immediately before the Horse Show. The management of all details was left in the hands of the committee. Messrs. Goff and Mecredy were elected as representatives of the Club on the council of the Automobile Club of Great Britain and Ireland and also on the executive council of the Motor Union. It was decided to take steps to form an Irish Motor Union, the matter being left in the hands of the committee. The rules of the Club, as revised by the committee, were approved.

The Italian Auto- mobile Tour.

WE have received a copy of the programme of the Automobile Tour of Italy, which is being organised by *Il Corriere della Sera*. The start will take place on the 27th April, from Turin, and Genoa, Spezia, Florence, Siena, Civita Vecchia, Rome, Terni, Perugia, Rimini, Bologna, Padua, Brescia, and Milan will be visited, the tour extending over 15 days. On May 12th the competing vehicles will be placed on exhibition in Milan. The distance is 1,642 kilometres, or about 1,020 miles; the daily runs range from 69 kilometres to 208 kilometres.

Postal Motor-Cars in Paris.

WE announced a few weeks ago that an electrical delivery van was being experimentally tried in connection with the postal service in France. An official trial was organised last week by M. Dubois, director of the vehicle service of the French Post Office, for the benefit of M. Mougeot, Under-Secretary for Posts and Telegraphs. The electric van was filled with letters and despatches and sent from the General Post Office,

THE GENERAL AUTOMOBILE AGENCY, D. Farman, Man., Carage open day and night, all cars in stock, 100-104, Long Acre, W.C.

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Rue Jean Jacques Rousseau, to the Rue Erard, in the far east of the city. The vehicle carried nearly 16cwt. of letters, or 6cwt. more than the average horse drawn cart. The start from the Central was at 3.29 in the afternoon, and the car was at the Rue Erard, 12th Arrondissement, at 3.44, beating the horse-drawn cart by eight minutes. At a dinner, which followed the trial, M. Dubois announced that he had five more vans on order—three electric, one petrol, and one steam—which augurs favourably for the prompt collection and distribution of letters in Paris in the near future.

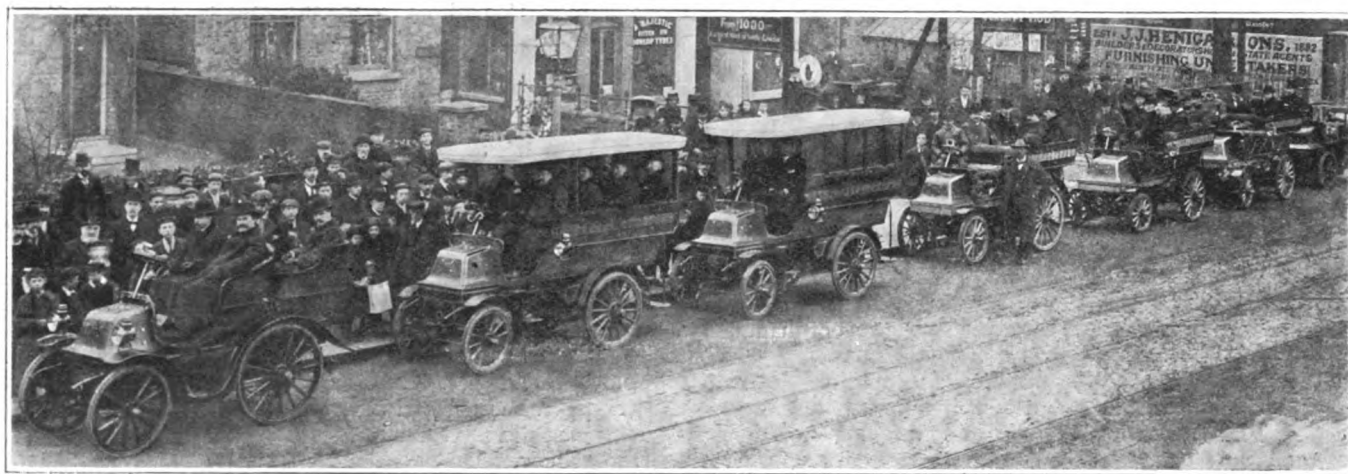
Motor-Cars in Madagascar.

AT the invitation of the Governor-General, the British Consul took part in the formal opening of the road between Antananarivo and the village of Mahatsara, which took place recently, making the journey by motor-car from Antananarivo to Mahatsara (245 kilometres) in 28½ hours, 14 of which were employed in the actual travelling. Prior to the completion of this road the same journey, made in a palanquin, usually occupied five days. The completion of this road will, it is considered, entirely revolutionise the existing method of inland transport in Madagascar. Numbers of motor-cars are being ordered to take the place of the native porters hitherto employed in carrying goods and passengers between the coast and the capital.

He hopes that some members of the Automobile Club will write short papers on the subject to be read at the meetings of his section.

Lincolnshire Automobile Club.

THE Lincolnshire Automobile Club had a great success in its inaugural banquet, under the presidency of the Mayor of Lincoln (Mr. C. W. Pennell), at the Saracen's Head Hotel, Lincoln, on Saturday. The visitors were met per motor at Newark and at Sleaford. Among the guests present were Messrs. Roger Wallace, K.C., E. Shrapnell Smith, S. F. and C. Edge, C. Jarrott, J. W. Stock, J. Thropp, A. R. Atkey, G. H. Kirk, W. D. and E. W. Wells, A. H. Niblett, H. Belcher, M. Ross Browne, R. Harbridge, J. G. Hamerton, of the Nottingham A.C., Capt. J. A. Cole, Alderman A. L. Jessopp, Councillors J. D. Goy, W. S. White, and J. H. Foster, G. J. Wilkinson (secretary), R. B. Wrenford (treasurer), Alderman J. G. Williams, Parsons Wright, Dr. W. G. Gilpin, W. B. Jevons, G. Godson, Dr. J. H. Pim, A. A. Padley, F. Allbones, J. R. Richardson, W. R. Pennell, C. H. Gilbert, C. Nelson (hon. secretary), C. Hannan, C. H. Hole, A. J. Percival, W. S. Foster, C. J. Parker, J.P., F. Jecock, R. M. Wright, and other well-known automobilists, over one hundred being present. "After the toast of 'The King,' Mr. Roger Wallace, K.C., gave 'The Lincolnshire Automobile Club.'" He said he was pleased to see



A FLEET OF M.M.C. CARS IN BALHAM. THE INAUGURATION OF THE STREATHAM, TOOTING, CLAPHAM JUNCTION SERVICE.
(Photo by) (Dorrett & Martin, Wandsworth Common, S.W.)

The Manchester Automobile Club.

AT a meeting of the Manchester Automobile Club, last week, the hon. secretary announced the receipt of a letter from the secretary of the A.C.G.B.I. to the effect that as the Manchester Automobile Club was affiliated with the A.C.G.B.I., by virtue of an arrangement recently entered into, its members had become members of the Motor Union, which had lately been formed. A report on the question of the desirability of increasing the maximum weight of light locomotives beyond that authorised by the Locomotives on Highways Act, 1896, to be submitted to the President of the Local Government Board for their consideration, was laid before the meeting, and after deliberation the Manchester Automobile Club decided to support it.

Automobilism and the British Association.

COLONEL CROMPTON has been elected president of Section G, which is the Mechanical Engineering Section of the British Association, a meeting of which is to take place in Glasgow early in September. He has taken for the subject of his presidential address, "The Development of Automobilism."

such branches springing up and doing so much good as the Lincolnshire Club had done. It was the only way a new pleasure, a new sport, and a new industry like this could be fostered and made free of undue restrictions. He thought the membership need not be confined to one social class, but be equally open to dukes or mechanics. There was much to learn and to assist in, and much experience to gain. He was sure they in London would give any assistance in the way of lectures or asking others to come down and address them. Until the law was altered, he counselled them to observe it with caution, and should they be going faster than they were aware (laughter), never to go to the danger of the passers-by. If they were sportsmanlike they would get all they wanted. In responding, the Mayor of Lincoln, Mr. C. W. Pennell, chairman of the Club, referred to his spill while reading the Proclamation. The horses drawing the vehicle on which he was standing refusing to stand still, the suggestion had been made in the papers by their secretary that next time he should use his car. He believed the motor-car had come to stay, at least a "horsey" man told him so when he was three-quarters of an hour starting. There was plenty of prejudice to overcome, but in time they would do it, but must, for the time being, be courteous to all. He was pleased to see that the Club was in a healthy state, there being over

THE AUTOMOBILE MANUFACTURING Co., Ltd., 48/49, Long Acre, and North St., Manchester Sq., all cars in stock, Garage, Repairs.

fifty members, including some very influential people. They were arranging demonstrations before the Holland and Lindsey County Councils, and hoped to do much useful work. Mr. W. T. Page, jun., proposed "Automobilism" and referred to the over-cautious way of the legislature by which industries were stifled. He, however, believed England was rapidly making up the few years it had been handicapped. Mr. E. Shrapnell Smith responded and congratulated the Club on its successful start. He remembered the handsome treatment of them on the 1,000-Miles Tour last year by Lincolnshire automobilists. He thought the Lincoln machinery works should take up heavy motor vehicles, for which there was such great scope in the county, it being possible to take five tons a dozen miles for 12s. 6d., thus enabling the producer to get his produce to the market quickly and cheaply, and he hoped the farmers would soon be able to produce alcohol for use in internal combustion engines, and so derive a profit out of the movement. He assured them that motors would be very beneficial to the farming industry and would break down isolation. Mr. S. F. Edge also responded for the toast, and gave a very interesting account of his run up, mentioning that he had found it more pleasurable to drive a small car than a large one. He would, however, bring his 70-h.p. car down, and allow some of them to know what it was like to go at sixty miles an hour on some quiet road. Mr. Jarrott also responded, and referred to the pre-red-flag days, when they took out enough spare parts to make a car.

Other Toasts.

ALDERMAN J. G. WILLIAMS proposed "The Visitors," and Mr. A. R. Atkey responded. He said he was sure the members of his Club would be pleased to visit Lincoln again. Lincoln always had been a popular place with Nottingham people, and he hoped the Lincolnshire Club would visit them. Mr. J. W. Stocks, after referring to the time when he was heavily fined seven times in the county in connection with road-record breaking, extended an invitation to meet his Club, the Midland A.C. Mr. Councillor W. S. White and Mr. W. B. Jevons, the two vice-chairmen, responded for "The Chair and Vice-Chairs." Songs were contributed between the toasts by Mr. C. Woodward, of the Cathedral Choir, Mr. P. Andrews, and Mr. Parsons Wright, a member of the club.

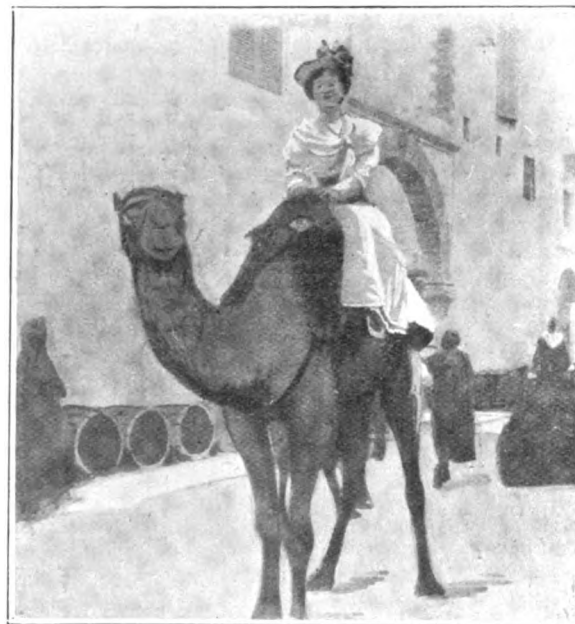
The Tire Question.

It is a melancholy reflection that despite the able and successful efforts of English motor builders, their ambitions for the Gordon-Bennett Cup may be thwarted by the tire question. One prospective competitor has suggested that the rules should be relaxed so far as these essential components are concerned; but any such concession to insular incapacity can hardly be seriously wished for. It is no new thing for a discovery of home origin to be appropriated by foreign manufacturers by right of their superior energy and ability, as witness the aniline dye trade; but for such a distinctly British invention as the pneumatic tire, fostered, moreover, under the aegis of a wealthy group of monopolists, to fail to make even a show of competing with its foreign developments, is a more than usually lamentable sight.

The Tare Limit of Heavy Motor Wagons.

THE Council of the Liverpool Self-Propelled Traffic Association have printed their report upon the tare limit of motor vehicles for goods traffic, which is now being circulated as a petition to the Local Government Board for signatures. The Association admit that, as a tentative measure, the act of 1896 remains satisfactory in most particulars, but for heavy traffic purposes—for loads of four tons and upwards of merchandise carried in the vehicle itself—it has been found to impose too severe a restriction as regards the tare weight. They therefore suggest that

the President of the L.G.B. should introduce a new Bill—"To allow light locomotives, which shall otherwise conform with the requirements of the Locomotives on Highways Act, 1896, to be constructed and used under the provisions of that Act, provided the weight per inch width of tire on any wheel shall not under any conditions of running exceed twelve cwt., the legal minimum, viz., four inches, remaining as at present. This weight is already exceeded both in motor and horse-drawn traffic. It is pointed out that such a regulation as that suggested in the proposed clause of a new Act would protect the roads against undue total weights. The present limit affects the tare, and, therefore, appears defective in the direction named, for the spirit of the Act undoubtedly is to protect the roads from damage.



A CHANGE IN LOCOMOTION. MRS. S. F. EDGE IN MOROCCO.

Demonstrations at Worcester.

ON Saturday last a demonstration of motor-vehicles was given at Worcester by members of the A.C.G.B.I. and the Midland Automobile Club before members of the Worcester and Staffordshire County Council. Among the vehicles present were Mr. Alfred Bird's 12 h.p. Panhard, driven by the owner; Mr. J. A. Holder's new 16 h.p. Napier, driven by the owner; a Lanchester car driven by Mr. Frank Lanchester; a 6 h.p. Daimler, lent by Mr. Alfred Harmsworth, and driven from London by the Club Secretary; a Motor Manufacturing Company's 6 h.p. car, and a 6 h.p. Daimler car. Dr. Fernald rode his motor tricycle from Cheltenham, and, later, Mr. Tangye and Mr. A. Tangye each drove a Peugeot voiturette from Birmingham. Among the County Councillors who took drives were Mr. Woodward, the vice chairman of the Worcester County Council, Mr. T. R. Bayliss, of Birmingham, Mr. Owen Gibbons, Mr. F. H. Lloyd, Mr. Pelham Lane, Mr. George Hill, Mr. William Somers, Mr. John Amphlett, Sir Harry Vernon, Mr. Bowen, General Davies, and the Rev. J. B. Wilson; Mr. Seacombe (the acting clerk to the Worcester County Council), Mr. Barker, Mr. Carmichael, and the County Surveyor of Worcester also took drives. The members of the Club and members of the Council were afterwards entertained at luncheon at the Shire Hall by Mr. Willis Bund, the chairman of the Worcester County Council, who was absent owing to the funeral of his son. Mr. Alfred Bird, on behalf of the Club, expressed thanks for the entertainment. On Sunday night, Mr. Thomas H. Parker arrived at Worcester with Mr. Young (of the Wolverhampton Club) on the latter's De Dion voiturette, which Mr. Young placed at the

disposal of the Automobile Club for a further demonstration which took place on Monday last.

The King of the Belgians' New 20 h.p. Panhard.

MESSRS. CHARRON, GIRARDOT, AND VOIGT, have just delivered to the King of the Belgians, at Nice, what is claimed to be one of the most improved, comfortable, and stylish motor-cars in existence. The car is of the same type of Panhard and Levassor racer as those driven by MM. Charron and Girardot, who arrived first and second in last year's International Cup contest. Although of nominally 20 h.p., this can, if necessary, be increased to 30 h.p. The body, by Rothschild et Fils, is of hammered aluminium painted red, the lower part (the chassis) being royal blue. The wheels, too, are blue, picked out with red. The wings over the front wheels are semi-circular, and twisted in such a manner as to act as wind-cutters, while those over the back are flat, and are arranged to carry light luggage. All the visible woodwork is of highly-polished mahogany, and the fittings are of brass throughout. The seats are of an altogether new design, resembling comfortable office chairs, and are covered with red morocco cow hide, His Majesty's *fauteuil* on the left being much more spacious than that of the driver beside him.

Cost of Repairs.

MR. H. EDMUNDS, Chairman of the Touring Committee of the Automobile Club, bought a car at the Paris Exhibition last year. On it arriving at his residence something was found wrong with the differential gear case. He sent it to a local engineer who advertised as a bicycle maker and repairer, also as a manufacturer of scientific instruments. While the car was in his shop Mr. Edmunds made several slight alterations by way of improvements, such as altering the cooling arrangement and other minor details. The work to the differential gear case was unsatisfactory, and the engineer failed to turn the car out so that it would run. He was not, however, deficient in making out his invoice, for he made a charge close upon £90. The work actually done was examined by experts, who valued it upon a liberal valuation at £37 12s. This amount was paid into court. The engineer was dissatisfied and proceeded with an action in the Queen's Bench, which, upon application, was referred to be tried by Mr. Referee Pollock. The case occupied two whole days, and the engineer called about twelve witnesses in support of his case. In the result a judgment has been given to the effect that the amount paid by Mr. Edmunds is ample, and the court has ordered the engineer to pay the whole of the costs of the action. Mr. Staplee Firth had the conduct of the action for Mr. Edmunds.

The Brake Question.

WITH reference to the comments in our last issue on the subject of brakes, the Right Hon. Sir J. H. A. Macdonald writes that he is quite in accord with our views that the "devil" or "sprag" is most objectionable, and sometimes inefficient. In his letter he calls attention to the device used on the Delahaye car. This consists of a disc with ratchet teeth at the hub of the wheel. A cord is kept suspended above it by a cord with a ring, the ring lying in a hook close to the driver's hand. By unhooking the ring a pawl falls on the ratchet, and whenever the motion of the wheel is reversed the pawl falls into the teeth and the wheels cease to revolve. It thus takes effect the moment the wheel moves an inch backward. So far as our experience goes even the Delahaye device does not meet all requirements, for, to act, the cord must be dropped instantly there is any tendency for the car to run back on a hill. If the car is allowed to gain the least momentum, the general experience is that the pawl fails to catch the ratchet. Evidence is not wanting that a good many active minds are at work on the question of devising a reliable device to prevent

motor-cars running back on steep grades, and we have no doubt that ere long these efforts will be crowned with success.

The Gipsy Up to Date.

THE example of Messrs. Turgan, Crawhez, etc., has not been followed here, so far as we know, though in this land of dear and often third-rate hotel accommodation it would appeal to those of vagrant and open-air proclivities. We recollect hearing, though, of an automobilist discovered encamped on Southsea Common inside a small car which he had fitted as a *dormeuse*; but, whether on account of the weight limit or not, the motor caravan has not yet appeared. It would not appear to be difficult with the aid of aluminium, Willesden paper, etc., to build a caravan body with accommodation for a couple of bunks and other necessary appliances, on, say, a six or eight-horse frame, somewhere near the 1½-ton limit. High speed would not be necessary, and in fact, with the limit fixed, would probably be impossible; but we commend the idea to those who seek relaxation in a leisurely manner.

The Brighton Police and Motorists.

IN our correspondence columns this week, Dr. Mühlkamp, of Brighton, gives particulars of his summons for driving a light motor-car at a greater speed than was reasonable and proper, having regard to the traffic on the highway. One inspector stated that at 4.50 on the day complained of the defendant was driving a motor-car at the rate *he thought* of fourteen miles an hour. He and another policeman stopped the defendant. The policeman corroborated as to the probable rate at which the defendant was travelling, and he volunteered his opinion that the pace was too fast. Then came another champion of police, who stated the speed at which the car was travelling to be at from fifteen to eighteen miles an hour. There was no evidence at all to support a conviction in a Court of Summary Jurisdiction, and it is astonishing that any magistrate should convict upon what is obviously guess-work and in the absence of positive evidence.

Education on Legal Points Needed.

THERE are many well-known cases laid down by the High Courts in which it has been distinctly held that it is incompetent for witnesses to give evidence of mere guesswork or calculation, unless it is admittedly expert evidence such as a scientist's. The next great difficulty in the case was, that defendant was driving at too great a speed having regard to the traffic on the highway. It has been held in the High Court that where there are qualifying words of this kind there must be a *bona fide* complaint representing such qualifying words, and in order to justify a conviction legally and properly in this case there should have been evidence by some person or persons representing the traffic on the highway that they were incommoded, inconvenienced, or interrupted in their free passage in some manner or other. The evidence absolutely failed, and can only be described as an ignorant administration of law and turning the machinery into an engine of persecution, the fine of £5 being a vindictive penalty. The same learned representative of the law had before him a day or two previously a case in which a drunken man had driven his horses to the danger of the public, and had wilfully annoyed a motor-cyclist, his only defence being that he hated motor-cars, and that his temper was more to blame than drink. He seemed to appreciate this man's efforts, and only fined him the paltry sum of 10s. These cases, we think, prove the need of a Criminal Court of Appeal, for it seems a monstrous thing that the property of the public should be at the mercy of the animus of such incompetent judgments.

MR. C. G. HAMBLETON, of Cheadle, Staffordshire, has now a stock of petrol, and, having a well-equipped workshop, is able to undertake all kinds of repairs.

THE AUTOMOBILE CLUB EASTER TOUR.

IN order to avoid the inconvenience and worry of changing quarters daily the Automobile Club have decided to make Salisbury the headquarters for Good Friday, Saturday, and Easter Sunday. Salisbury being within a day's drive of London, members who cannot go throughout the tour can join the tour party without difficulty. Salisbury is an excellent centre for touring to Stonehenge, through the New Forest, etc.

ITINERARY.

THURSDAY, April 4th. (Half-day.)

LONDON TO WINCHESTER—67½ MILES.

Via Guildford (29½ miles) C.T.C. Vol. I., Route 120.

Hogs-back to Farnham (10 miles), Route 138.

Alton ("Swan Hotel" for tea) (9½ miles), Route 153.

Alresford to Winchester (18½ miles), Route 168.

SLEEP AT "GEORGE HOTEL," WINCHESTER.

GOOD FRIDAY, April 5th.

WINCHESTER TO RINGWOOD (lunch) 30½ miles.

RINGWOOD TO SALISBURY (sleep) 17 miles.

Via Romsey (10½ miles), Route 171.

Lyndhurst (8½ miles), Route 171.

Emery-down and Picket Post to Ringwood (11½ miles), Route 176.

Luncheon at "White Hart Hotel," Ringwood.

Via Fordingbridge, Downton Wick, to Salisbury (17 miles), Route 189.

Sleep at "White Hart Hotel," Salisbury.

[NOTE.—Those who wish to take a longer drive in the afternoon can do so by driving from Ringwood through Christchurch to Bournemouth (14½ miles) and back, making a total of 46 miles for the afternoon.]

SATURDAY, 6th April.

SALISBURY TO WEYMOUTH (46½ miles).

WEYMOUTH TO SALISBURY (56½ miles).

Via Thickthorn (15½ miles)

Blandford (6½ miles)

Puddletown (11 miles)

Weymouth (13 miles)

Route 188.

Lunch at Weymouth.

Via Preston and Wareham (18½ miles)

Lythett Minster and Wimborne (12 miles)

Ringwood (9½ miles)

Route 196.

Fordingbridge, Downton Wick, to Salisbury (17 miles), Route 189.

Sleep at "White Hart Hotel," Salisbury.

[Note.—Those who wish a shorter journey can leave the outward road at Blandford (22½ miles) and proceed by Route 191 to Bailey Gate (6½ miles) to Wimborne (4 miles) and home by Route 196 to Ringwood (9½ miles) and Route 189 to Salisbury (17 miles). Total for the day, 59½ miles.]

EASTER MONDAY, April 8th.

Salisbury to Basingstoke, 35½ miles.

Basingstoke to London, 45½ miles.

Via Andover and Whitechurch to Basingstoke (35½ miles), Routes 251 and 206.

Luncheon at "Red Lion Hotel," Basingstoke.

Via Blackwater, Bagshot, Virginia Water to London, 45½ miles, Route 206.

The start from the Club on Thursday, April 4th, will take place at 1 p.m.

It is announced that the Pennsylvania Automobile Club will hold a race meet for motor-cars during the coming summer on a Philadelphia track at least a half mile in circumference.

WE are requested by the Committee of the Automobile Club to announce that the quarterly 100-miles trial will be held on Tuesday the 2nd April. Entries must be in the hands of the Club Secretary not later than Saturday, the 30th inst.

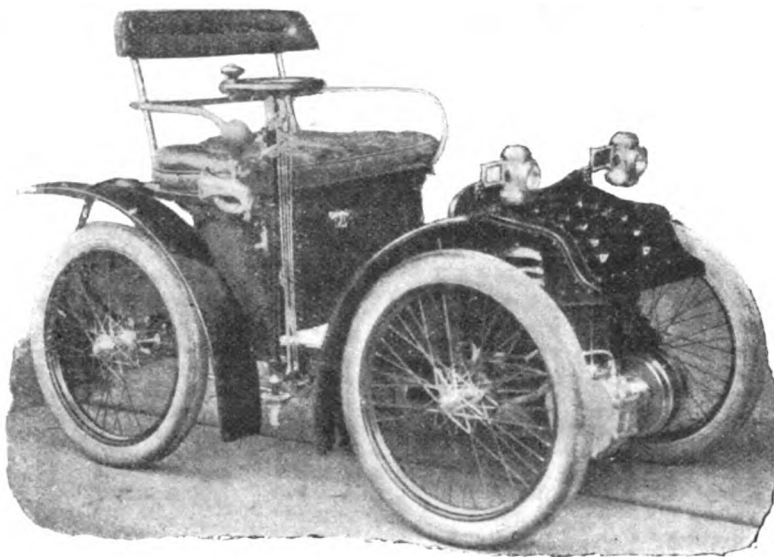
MR. JOSEPH PENNELL had reached Antibes by Saturday evening last on his Werner motor-bicycle. He reports that he had experienced an "awful week but was at last going all right."

ONE of the noteworthy features of recent development in New York has been the erection of fine buildings where stables once stood. The new electric automobile stables in West Forty-ninth Street, occupying a whole block, have relieved the region of the horse taint and odour and dust, and have made it possible to put up handsome buildings on ground that once was hardly deemed fit for the very poorest of the poor.

FROM PONTYPOOL TO BRYNMAWR.

MR. R. J. E. WOOLLEY, of Pontypool, sends us the following interesting account of a run he recently made on his Humber M. D. Sociable, to which he has fitted a new body in front with small detachable hood, improving the appearance, allowing more air to get to the engine, and affording additional space for luggage or parcels.

On Thursday morning, February 21st, I met my client at Pontypool Road Station, and after making short calls at four of our local collieries, we started on our journey to Brynmawr (Breconshire), with a stiff climb in front of us of 1,000 feet, through the town of Blaenavon. Leaving the large iron and steel works of the Blaenavon Company behind us, we soon came to the land of snow, remnants of the last fall which had drifted deep in places, and, with a sharp N.E. wind blowing, were thankful for warm clothing and rugs. A run of about four miles over the top of Coyty mountain, passing Waenavon station on the London and North Western Railway—the highest station in Wales, 1,800 feet above sea level—brought us in sight of our next halting place, namely, Brynmawr. Here the road was in a bad condition, and we had a descent of at least 1 in 4 for about a mile, which very soon landed us in the centre of this Welsh town. For some reason, which I shall



MR. WOOLLEY'S HUMBER "M.D. SOCIABLE" CAR.

never be able to explain, I pulled up in the central square, which is perfectly level, and while my companion went to make inquiries as to the whereabouts of his customer, I kept my engine running. This is a most unusual thing for me to do, for the starting gear being so simple I nearly always stop the engine, when even only a minute or less to wait. He returned in a few minutes, and we had to go up the main street, a sharp rise of about 1 in 8 for 500 to 600 yards. After another stop of some ten minutes or more, I altered my steering wheel to start the engine, when to my amazement I found we had lost the starting chain since our departure from Blaenavon; evidently during the bumping of the last mile's descent the connecting pin had shaken out of the chain, and the latter had dropped off. We had about thirty-four miles to go and four stoppages to make. Time was flying, and I felt sure that if a cycle agent were found who could supply a chain, valuable time would be wasted before one sufficiently long enough could be fitted. Explaining matters, I suggested we should risk it, and try to reach home without a chain. Of course, as we had to descend the street, returning towards the square, I was able to let the car run down by its own weight and throw the engine into gear from the free-wheel towards the bottom of the hill. If I had stopped the engine when we first halted in the square we should have been in an awkward fix, and probably obliged to push behind for about 200 or 300 yards in the most prominent part of the town, an ignominious occupation

to say the least. It was certainly in our favour that the next twenty-five miles were nearly all down hill, descending the western valley of Monmouthshire to Newport. Our little 2½-h.p. De Dion seemed to know we wanted good behaviour, and she simply romped along through Blaina to Abertillery, a growing town in this coal valley, where we stopped about five minutes, while I tried to find Dr. Leon Vint (of Vint Choir fame), who was there with a new 6 h.p. Daimler. I was not, however, successful.

Having been careful to stop on an incline which would be sufficient to give us a start, we soon left behind the vast crowd of inquisitive youngsters, who seemed to drop from the clouds. For about five miles now we had stiff ups and downs, especially one ascent out of Aberbeeg over the railway, which must have been at least 1 in 3, the road being covered with large loose stones. Fortunately it was short, and giving the necessary helping hand here and again in the next village, where we encountered a similar gradient, which, although a smoother surface, was much longer, we were soon gaily spinning away to Crumlin, and passing under the well-known viaduct, which looked like a piece of delicate lattice work, being over 200ft. above us, made our next halt at Newbridge, another colliery village about two miles below Crumlin. After making our last visit to a customer about a mile further on we returned to Newbridge, and dipping under the G.W. Railway by means of a subway recently made, turned our wheels for Newport and made a good run of twelve miles just under the hour, having to halt once to light lamps.

Leaving my client near his residence at Newport, I was not long (about forty-five minutes) running home to Pontypool, a journey of nine miles and all against the collar. The run from Brynmawr, I think, was all the more enjoyable because of the extra excitement of having no starting gear, and I venture to send you this little account for that reason, which may be unique in the motor world.

THE BEST ROUTE FROM PARIS TO ROUEN.

(From our own Correspondent.)

AT a time when many English automobilists are passing through Paris *en route* to or from the South of France it may be of service to trace a route by following which the capital may be left on the north-east side without encountering any very bad stretches of road. The Saint Germain route is that usually patronised by English motorists, but by following it one not only encounters the big hills at Suresnes and La Pecq, but in addition one is required to tackle long stretches of bumpy *pavé*, alternating with patches of truly, villainous macadam. The suburbs of Rueil, Chatou, and Le Vésinet all vie with one another to give the motorist a real good jolting, and in this endeavour I am bound to confess that they succeed to admiration. The automobilist comfortably ensconced among luxurious cushions and cradled on the easy riding springs of a car, receives a thorough shaking, while the unhappy motor-cyclist is literally slaughtered, and for some days after his excursion over this route he cannot sit down without a groan. A considerable portion of the *pavé* may be avoided, it is true, but this means *détours* to right and to left, thus tending to confusion when one does not know intimately the geography of these Parisian suburbs. Now the route which I have always found to be the most practical is that by way of Maisons Lafitte. True, there exists from end to end the "tramway de la mort," as motorists and cyclists call the line of tramcars connecting the capital with its horsey suburb, but personally I consider the danger considerably exaggerated. The only really awkward place is at Sartrouville, just before reaching Maisons Lafitte. There the route crosses the Seine by means of a bridge so narrow that the two lines of tram rails occupy the whole of the available space, and a vehicle might be nipped between a couple of tramcars. Then, too, after traversing the river, the route turns sharply to the left, and one is apt to overlook the existence of a raised portion of the road, upon which the tram lines are laid. Once mounted upon that the car has to be backed off, or bumped directly down on to the roadway.

These places are undoubtedly awkward, and one or two accidents have already occurred upon the bridge. The most recent of these happened about a month or so ago, and it might well have given rise to serious results. It was the old story over again. The driver of a carriage, seeing a tramcar at rest upon the further side of the river, proceeded to cross the bridge, expecting to get over before the car re-started. But the tramcar unfortunately did not remain long enough at rest, and entering upon the bridge it eventually nipped the carriage, there not being sufficient room for the latter to pass. By a miracle the driver was not hurled over the parapet into the river, but the vehicle was smashed up pretty considerably. But the bridge is the only dangerous spot, and the route presents a surface considerably better than those of the majority of main roads running out from Paris. To utilise it one should pass by the Porte Maillot either through the Bois de Boulogne or the Avenue de Neuilly to the Seine. There, without crossing the river, turn to the right and proceed straight ahead until the Pont Bineau is reached. Cross this and then follow the tram lines through Colombes, Bézons—where one again crosses the Seine—Houilles, and Sartrouville. Throughout the route is quite easy to follow. Immediately after crossing the bridge at Sartrouville, Maisons Lafitte is reached, and after climbing the hill which leads to the centre of the town one turns to the left and heads for the railway station. After negotiating the railway bridge the route branches off to the right, and leads the motorist through some of the lovely scenery of the forest of Saint Germain, past the Croix-des-Noailles, famous in motor annals as the scene of the Paris-Roubaix race accident. Driving straight ahead one enjoys a delightful run all down hill into Poissy, the railway level crossing on the outskirts of the forest and a bad *caniveau* at the entrance to the town being the only places calling for the driver's particular attention. At the railway station in Poissy turn to the right, under the railway and over the river bridges, and a straight road leads to Triel. The intricacies of this quaint old place call for slow driving, and in the heart of the town one turns sharply to the left and crosses the suspension bridge, pulling up for a moment to pay the toll. One then traverses Verneuil, where there are two *caniveaux*, and half a mile further on a nasty turn to the left requires careful negotiation.

The road then leads through a pretty wood, upon emerging from which Meulan is seen in the distance. A mile from the town the road bisects and that to the right should be followed. A very awkward bridge has then to be passed, but, once over it, a very short run brings one to Meulan. Upon entering the town turn to the right, cross the two bridges, and after the second turn immediately to the left, as by this means a stretch of *pavé* is avoided. From Meulan to Mantes is a straight run over a grand stretch of road, and once in the latter town the route to Rouen is readily ascertained. Such is the route which I have found to be the best, and by following it English motor men will avoid much of that terrible road surface which abounds on every side of Paris.

AN Easter tour, to extend over five days, is being organised by the Liège Automobile Club.

MR. WILLIAM LEA, of Birkenhead, Liverpool, reports that the car he has placed on the market has proved itself in the hands of purchasers what he claims it to be—a thoroughly reliable and good hill-climbing machine at a comparatively low price.

THE General Automobile Agency makes the fourth show-rooms opened in Long Acre, W.C., by motor-car makers and dealers. Long Acre will, considers the *Coachbuilders' Journal*, eventually be the mart for motor-cars as it is for horse-drawn carriages.

A GENERAL meeting of the members of the Lincolnshire Automobile Club was held last week. It was reported that the Club had been affiliated to the Automobile Club of Great Britain and Ireland, and it was decided that Mr. W. R. Pennell and Mr. W. B. Jevons were elected representatives on the Motor Union. It was decided to meet with the N.C.U. in respect to the improvements of guide-posts, etc. It was decided to take action in connection with the removal of the tare limit on heavy vehicles.

CORRESPONDENCE.

A PERFECT TRICYCLE.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—My previous letter described a motor-carriage for one person that was to defy the elements and afford protection in bad weather and in exposed situations to the occupant—in fact, a motor bath chair, which to a country doctor who has to turn out of bed and go out in all weathers would be invaluable. My present letter, however, refers only to a motor that would give the most satisfactory results as regards speed, security from breakdown, and general handiness. Is there any well-known and reliable firm of bicycle and tricycle manufacturers prepared to make a motor-tricycle answering the following description:—

The front wheel to be a Singer motor wheel, procured, of course, from Messrs. Singer, of, say, $2\frac{1}{4}$ or $2\frac{1}{2}$ h.p. The fork to be a duplex fork, similar to many motor-tricycles, and the head to be a Referee head, and the frame to be a combination of the Referee and Marriott frames, that is, it must be a triangulated frame like the Referee is now advertising, but must be forked over the gear case, as in the case of the Marriott tricycle, so as to bring the pedalling gear into the centre of the machine. It must also have Marriott's double band brakes, operating on drums on either side of the gear. The machine to be an optional free wheel machine, that is, it can be used as free wheel or not, as the rider pleases. The tires to be Palmer tandem tires with non-puncturing inner tubes, with non-puncturing bands not only against the outer cover, but also against the steel rim. The saddle pillar must be a Vincent non-vibratory saddle pillar, and the handle bars must also be non-vibratory. The motor wheel must be made to take in and out so that an ordinary wheel can be substituted when the motor is not required. This wheel can be sent on when touring, so that when staying at the sea-side, for instance, where only short rides are taken and exercise is desirable, the machine could be used as an ordinary tricycle.

The advantage of such a tricycle as I have mentioned is obvious. The duplex fork and double head give great strength and rigidity. The Referee frame gives a like result. The Marriott system of forking the frame centralises the gearing, reduces friction and side pull. The double band brake operating on either side of the gear is very powerful in action and very true. Non-puncturing tires afford an immunity from deflation. The saddle pillar reduces vibration, and the power of removing the motor wheel allows the machine to perform a double purpose. Such a tricycle would, indeed, be perfect. Would any manufacturer make one, and, if so, what would be his price?

It must be understood that the motor wheel when not in use must run absolutely free; the machinery must, in fact, be disconnected from the tricycle, so that the tricycle would descend hills of its own momentum, and when the tricycle was worked with the pedals the motor wheel would revolve without operating the engine, the tricycle would, in fact, be equal to one having the De Dion clutch. A motor which has to work down hill is an absurdity. This tricycle should not be very heavy; the frame, since it is scientifically planned, need not be cumbersome; the heaviest part would be the motor wheel. It should be easy to pedal.

Trusting to hear that some of your readers who are manufacturers, consider it feasible to produce such a tricycle,

Yours truly,

ATHOL MAUDSLAY.

GEARS AND IGNITION FOR MOTOR-QUADS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—In reply to "Chum" in your last issue, I should say there is no such thing as the "correct" number of teeth to have on the pinion of the motor-axle. That point should be determined by experience, showing what is best for all round work of different powered engines. I have in use the smallest pinion made for Aster $2\frac{1}{2}$ h.p. motor (twelve teeth). But with two riders on my quad I could not get comfortably up hills, described in the Contour book as 1 in 17, until I had a two-speed gear fitted. "Chum" may be quite sure that these small motors cannot

negotiate hills at all steep, when driving a quad with two on, unless with the attachment of a two-speed gear—and that is the proper and only solution of the problem.

I should like to give a word of warning here as to the danger of over-straining when assisting a quad up stiff hills by pedalling. I know a man who ruptured himself last summer in this manner. I have done away with my pedals, chain, etc. There is no real necessity for them with a two-speed gear in use, besides their being a source of bother and annoyance in all sorts of ways. There are more advantages without them than with them, at least, so I find now.

Van Raden's woven glass accumulators are very good. At any rate mine is very reliable, and judging from experience, I say mine would work for quite 700 miles, if not more. As to recharging, all electric supply stations will not charge accumulators. But there should be no real difficulty in the matter, wherever the continuous current is in operation. One can charge it oneself from a switch, when one has once been shown the way. I find it takes about four minutes to fully charge mine, costing about 2s.

I am thinking of having a small dynamo fixed to my quad, to be driven by a belt from the end of the motor shaft, so that as the motor works it would drive the dynamo, and so keep the accumulator constantly charged up. Can any of your readers kindly give experience in this particular matter?—Yours truly,

G.

A SUGGESTED NEW CLUB.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—As motor-cars are a luxury "to the many," would it not be a good idea if some enterprising persons, preferably yourselves, formed a motor-car club in London (to start with), all members to pay a yearly subscription and a small sum to the repairing fund of the club, in return for which members should be entitled to use a car, say, four or more days a month, and as members increased, motors and the number of days (if possible) allowed per member shall be increased also?—Yours truly,

NOVICE.

THE BOLLEE VOITURETTE.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I am obliged to Mr. Hickman for his kind information. In reply to "Inquirer," I do not think there are any English agents for the car, but full particulars could probably be obtained from the maker, Leon Bollée, 163, Avenue Victor Hugo, Paris. I do not know the price, but secondhand cars can be picked up at very reasonable rates at many of the big dealers', and it is this fact and the neat appearance and cheap maintenance that strike me so favourably. I shall be glad if Mr. Hickman or some other reader would give further particulars, such as: (1) Is the braking effective? (2) Is the driver's view interfered with by the front rider? Both seats seem to be on the same level. (3) Is the car given to bad side-slipping? (4) Does the belt driving give trouble?

Mr. Hickman seems to consider the running cost of .6d. per mile as very cheap; it does not compare very favourably, however, with the cost of .3d. claimed by the Benz people.—Yours truly,

ZERO.

MOTOR-BICYCLES.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I think it would be a very great improvement if motor-bicycles could be made with a jockey pulley, controlled from the handle-bar, for the purpose of starting the bicycle by means of the motor, when one is mounting the cycle half-way up a slope. It seems to me doubtful whether the motor-bicycle can compete successfully with the motor-tricycle, owing to the latter's ability to climb very steep hills slowly, when fitted with a hill-climbing gear. I should also like to see motor-tricycles made narrower, now that the necessity of running back, and turning sharp round when starting on a hill, is being done away with by the introduction of the free motor. Yours truly,

CECIL JACKSON.

BRIGHTON POLICE AND MOTORISTS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I should be pleased if you would publish the particulars of the following iniquitous fine imposed on me by the stipendiary of Brighton for alleged furious driving, viz., fourteen miles an hour, on Saturday, the 9th inst.

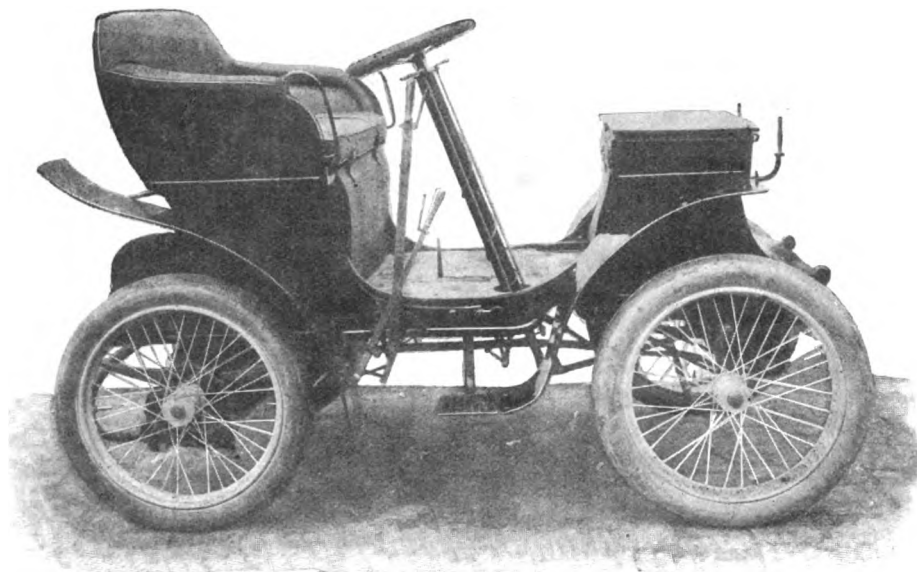
The case came on Thursday last week at Brighton Police Court. I did not trouble to have Mr. Staplee Firth to defend me, for which I am now truly sorry, thinking the case was such a simple one, and having seen a similar case disposed of at Hove only on Monday, the 11th (viz., Mr. Gladding's), for 5s. and costs. The facts of the case were these:—I had only taken my car from the carriage builders' hands that day, and it was the first time that it was out. I was quite unaware that any policeman had noticed me or that I was driving any faster than usual (I have driven a motor-car for the last eighteen months and never been spoken to before) till they stopped me on the Sea Front, and asked me whether I was aware of the time I had taken to do a certain distance. They informed me they had timed me, and that I was travelling at fourteen miles an hour, and that they would report me at the Town Hall.

Now you have often held up to ridicule the way the policemen have timed unfortunate motorists, but I think that the following is unique. At the junction of Madeira Road and

THE ROCHET VOITURETTE.

AS a kind of intermediary between their motor-quadracycle and their 6 h.p. light car, La Compagnie Générale des Cycles et Automobiles (Rochet-Petit), of Paris, have lately introduced a two-seated voiturette, of which we are able to give an illustration. The frame is of tubular construction, suspended, fore and aft, by springs on the axles; on the frame is fitted a comfortable body having seating accommodation for two persons. The motive power is supplied by an Aster water-cooled motor of 4 h.p. Ignition is, of course, electrical, while the carburettor employed is of the well-known Rochet spraying type. The circulation of the cooling water is maintained by a small pump, a radiator being also provided.

As regards the transmission gear, this is very similar to that adopted in motor-quadracycles, the engine being located at the rear, and geared direct to the rear axle through the medium of a friction-clutch and a two-speed gear. The latter is entirely enclosed in a dust-proof oil-containing case, and it is pointed out that on the high speed the engine drives the car direct, none of the additional pinions being in gear. Steering is controlled by an inclined hand-wheel, on the standard of which are mounted three little handles for regulating the gas mixture and for varying the ignition. A hand lever at the side controls the clutch



THE ROCHET VOITURETTE.

Marine Parade is the Brighton Aquarium, on the tower of which is a notoriously bad time-keeping clock. The policemen watched me drive along the Madeira Road and stopped me on the Marine Parade. They were standing at least 200 yards from the afore-said clock when they stopped me, and they took my time from this clock and at that distance, and moreover the magistrate accepted this as proof of my furious driving, and imposed a fine of £5 11s. 6d.

This magistrate had a day or so previously imposed a fine of 10s. only on a drunken man whom it was acknowledged had driven to the danger of the public and also had annoyed a motor-cyclist, but whose defence was that he hated motor-cars, and that his temper was more to blame than drink. This case was reported in your last issue.

I have since written to this gentleman (the magistrate) offering to give him a run on my car to cure him of his prejudice, but, as might be expected of such a man, he has not had the politeness to answer.—Yours truly, FRITZ MÜHLENKAMP.

THE British Motor Traction Company write:—"We are pleased to note that Mr. Friswell has been frank enough to explain that the letter which appeared in a recent issue purporting to be a copy of a letter sent to the British Motor Traction Company, had never been written to that company, nor did the original of Mr. Friswell's copy exist. My Board appreciate his straightforwardness in telling your readers the truth of the matter, and thank him accordingly."

and change-speed gear, the second hand lever actuating band brakes on the hubs of the rear wheels. The foot pedal seen in the illustration operates a hand brake on the differential gear. The road wheels are of the cycle type, 23 in. diameter, and are shod with 65 mm. pneumatic tires. The car measures 7½ ft. by 3½ ft., and weighs about 5 cwt. On the low gear it will, it is claimed, mount any ordinary hill, while any speed from five to twenty-five miles an hour can be attained.

THE Automobile Club propose to appoint a sub-committee to prepare schemes in connection with the demonstration of motor-vehicles before County Councillors on Thursday, Friday, and Saturday, 6th, 7th, and 8th June.

MR. A. BURGESS, of the Lightning Motor Works, of Barnard's Green, Malvern, informs us that he has arranged to keep his premises open day and night. He keeps a stock of petrol and motor accessories of all kinds, and is well equipped to carry out any necessary repairs to motor-cars.

THE English Motor Club evidently intends to give the holiday crowd at the Crystal Palace on Easter Monday plenty of excitement, and if we mistake not there will be a general rush for the track at the hour fixed for the motor meeting. One of the most interesting events should be the five-miles pursuit match between Messrs. Jarrott and Maltby, each driving 10 h.p. De Dion racing spiders.

THE BELGIAN MOTOR-CAR EXHIBITION.

(From Our Own Correspondent.)

THE annual exhibition of automobiles, motor-cycles and cycles was opened on Saturday last, the 16th inst., at the Pole Nord, Brussels. The building, which is a hall connected with the market, is of very respectable size, but every inch of available space, both down stairs and in the galleries, has been filled up, and it really looks as if there were not room for a single car more. I have analysed the list of exhibitors and find there are 63 Belgian and 43 foreign firms.

The exhibition was inaugurated by H.R.H. Prince Albert of Belgium, who arrived at two o'clock accompanied by his aide-de-camp, and was received by M. de la Charlerie, the president

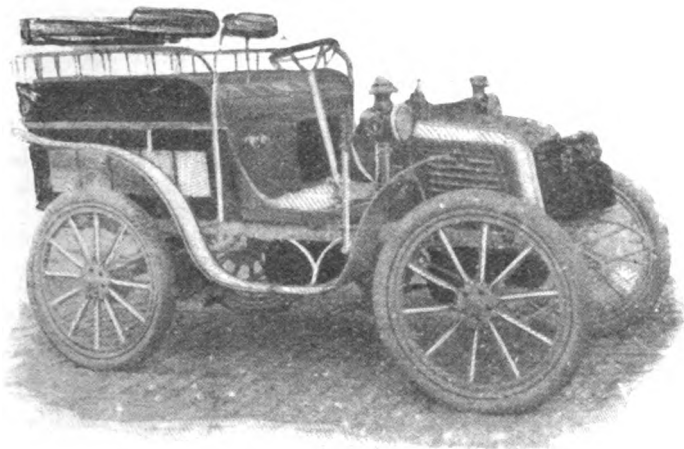


FIG. 1. THE DECHAMPS TONNEAU.

of the Société Royale Union Auto-Vélocé de Belgique, under whose auspices the exhibition is held. The Minister of Industry and Labour and his First Secretary were also present, as also M. de Motte, the burgomaster of Brussels. The inauguration consisted of an official visit by the Prince to all the stands, at each of which he was received by the representative manufacturer. In this interesting little country the King and the Prince are personally acquainted with nearly all the heads of firms, and as I passed round with the official party I was struck with the evident familiarity and friendly terms on which the Prince seems to be with his people. One big maker remarked to me, "The only thing that makes him a little shy is that he is afraid one of us will sell him a car." M. Verstraetan, the president of the Belgian Automobile Club, received the Prince in the room set apart for the Club and had a cordial interview with him, and after spending two hours in the show the Prince drove away at four o'clock, expressing great satisfaction at what he had seen. I asked a manufacturer why the King slighted his own countrymen by buying his motor-car in Paris, when he could buy one just as good, if not better, at home. He replied, "Oh, he always likes an excuse of some kind to go to Paris." It strikes me there are many others besides the King of Belgium who like to have an excuse for a trip there now and then! The show shows a decided progress over the one held in this same building last year. The advance is most noticeable as regards the higher-powered cars—what I may call the mastodons of automobilism. This time last year the 12 h.p. was almost unknown, whilst this year I noticed both Belgian and French 12 h.p. Daimlers, and at least five other makes of 12 h.p. cars, and even a 40 h.p. motor.

The most important exhibit is undoubtedly that of the Belgian Daimler Company, or as it is called La Société des Ateliers Germain, with all the well-known forms of 6 h.p. and 12 h.p. cars, both open and closed. The great feature of their exhibit is, however, a new 12 h.p. racing car weighing about 18 cwt., very rakish in appearance. Great things are expected

of this car, and I hope to have an opportunity of describing to you my experiences of a run on it, as the owner has promised to take me out as soon as the car is in thorough trim. Amongst the mastodons I noticed a 12 h.p. Mors, a combination petrol-electric car by Jenatzy, with accumulators to start the engine and help it along, whilst in its turn the engine charges the accumulators; a new 12 h.p. Pipe car by the Compagnie Belge de Construction d'Automobiles on the lines of Panhard and Levassor; and a lorry and a very heavy-looking six-seated car by Vincke, of Malines. The Société Generale Belge des Automobiles exhibited also a Daimler. In a corner just behind the exhibition of the Ateliers Germain I noticed the novel and ingenious incandescent platinum tube without a burner which was exhibited at the Paris Salon, and which has already been referred to in the *Journal*. The incandescence is maintained by carburetted air impinging on a thin wire of spongy platinum. All danger of the wind blowing out the burner is done away with, as also all danger of fire, for petrol may be poured on it without ignition. A good show of batteries and electrical accessories is made by the Meyra Electric Company, Ltd., of London. The company are establishing works over here for the manufacture of batteries for the Belgian market.

In smaller petrol cars the would-be purchaser is spoiled with choice—all more or less approaching the same outlines—engine in front, wheels of equal diameter, a universal joint to replace the chains, and above all a *tonneau* body. Amongst the smaller cars I noticed Pieper's new 6½ h.p. light carriage, with two cylinders, Panhard gear, and, of course, *tonneau* body; but Pieper continues to use chains, and does not believe in the universal joint. Les Usines Delin, of Louvain, have a good little two-seated car, fitted with two speeds and reverse and 2½ h.p. engine, for £112. La Société la Metallurgique, of Marchienne-au-Pont, has quite an assortment of cars, and a new motor which promises great things.

Dechamps, who is at present giving a series of lectures under the auspices of the Moto Club, has also made great progress. Fig. 1 shows the new Dechamps *tonneau*. It is fitted with a two cylinder 6 h.p. motor, three speeds and reverse. Among the larger cars I should have mentioned the Gobron-Brillie, which seems quite a favourite in Belgium.

I noticed a very handsome covered vehicle made by the Fabrique Nationale d'Armes, Herstal, in which the driver is quite inside the car and behind bevelled glass windows, and surrounded with very luxurious fittings. This firm have already supplied the Shah of Persia with a handsome landau. In electric carriages Krieger's is the only stand of importance, showing all his well-known forms of open and closed vehicles, with the motors on the front wheels.

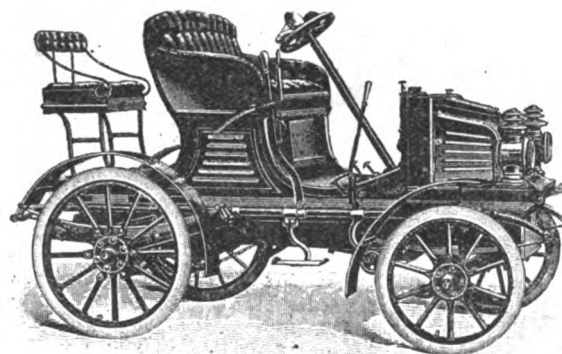


FIG. 2.—THE PEUGEOT NEW LIGHT CAR.

Messrs. Antoine Fils and Co., of Liège, make a big display of Kelekom petrol motors, ranging from 2½ h.p. to 10 h.p. Les Ateliers Lion, of Enival, Verviers, has on view a number of little belt-driven motor-cars, already well-known in England. The Peugeot Company show several of their latest types of vehicles, including the 5 h.p. car with engine in front (Fig. 2). A new 6 h.p. light car is shown by M. E. Pinart, of Brussels. I hope to send you particulars and illustrations of this later on.

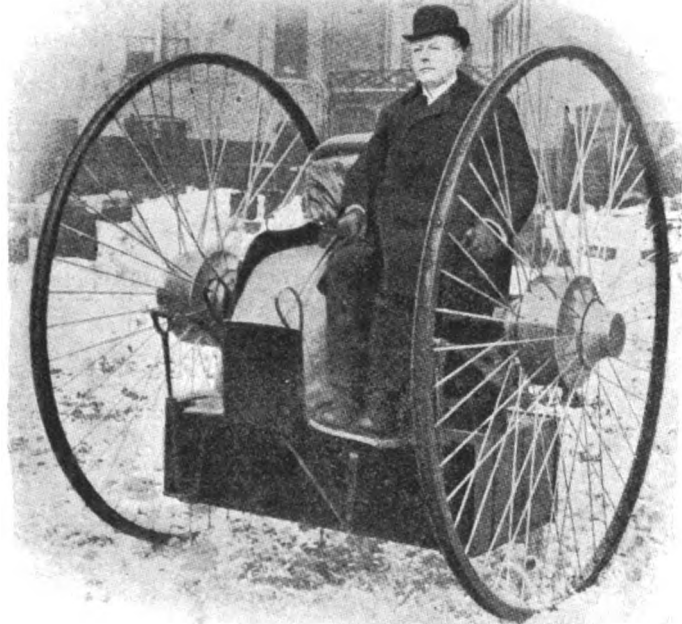
THE GENERAL AUTOMOBILE AGENCY, D. Farman, Man., Garage open day and night, all cars in stock, 100-104, Long Acre, W.C.

A 5 h.p. air-cooled engine and a new carburettor are to be seen on the stand of M. Fordart, of Cureghem.

I noticed a Locomobile steam-car and also a steam-car of the Serpollet boiler type made by Miesse and Co., of Brussels. It was this car which last year made a record run at the speed of 74 kilos. an hour. This vehicle is very elegant in design, and I shall watch its future development with considerable interest. The Minerva motor-bicycle made by an Antwerp firm, and very compact and well finished, figures as an important exhibit. The motor is in the frame below the rider and drives the hind wheel by means of a thong of untanned leather. I did not see a single motor-tricycle or a quadricycle. Bicycles were very poorly represented too, and, as this used to be a cycle show entirely, it is quite a sign of the times to see how the motor has quickly absorbed a great part of the attention which used to be devoted to the bicycle and has taken its place. Altogether the Belgian *salon* is well worth a visit and fully demonstrates the fact that the motor trade is getting now into practical grooves taught by actual experience and which promise to lead to a satisfactory and steady future trade.

A NOVEL TWO-WHEELED ELECTRIC VEHICLE.

AN electric vehicle that possesses some interesting and rather unique features, and which reminds us of the old Otto bicycle, has recently been constructed by Mr. A. B. Holson, of Chicago. It consists of a seat and carriage frame



suspended between two large wheels, and a good general idea of its construction may be obtained from the accompanying illustration, which shows the vehicle and its inventor.

Mr. Holson believes that the main improvement in his vehicle over other automobiles is the fact that he uses such large wheels. In passing over rough roads the jar of the battery of accumulators is greatly lessened. The inventor says:—"The reason that batteries give out so quickly in automobiles is that the vehicle shakes the batteries so badly that the active material drops out, and there is a tendency to short-circuit the battery. I overcome this by having such a large wheel. When I am driving my machine fast the wheels are turning comparatively slowly, as the vehicle advances 20ft. during every revolution of the wheels. On ordinary dirt roads each wheel makes contact with the ground for a distance of about 11in., which makes the car run steadily and steer easily. In testing the machine I passed

over a 6in. by 6in. block of wood very easily, hardly noticing any swinging to one side, as one would naturally expect a two-wheel vehicle of this sort to do. Other advantages of my vehicle are that it only occupies a small amount of room; it is harder to tip over in rounding a curve or surmounting an obstacle; it can be manufactured more cheaply, and there is no noise heard from the gearing, as the motors are in the hub."

Probably the most important part entering into the construction of the two-wheeled car is the motor. Each wheel contains an electric motor in its hub, and the mounting and gearing are of new and unique design. The motor is placed crosswise of the axle, with a pinion on each end of the motor shaft. The pinions operate on opposite sides of a two-faced bevel annular gear, fastened to the hub of the wheel, and is turned by the revolution of the motor, the field frame of which rests in ball bearings in the hub frame. The conducting wires from the battery are run through the hollow axle to the motor, and the latter is entirely encased in a malleable iron case. The gearing is thus not exposed to the elements and dirt. The motors are multipolar and series wound, and while each is designed to develop one horse-power under normal operation, the inventor asserts that they can be forced to give a maximum of four horse-power each when necessary. The diameter of the entire hub casing is 13 inches, while the wheels of the vehicle, which are of cycle construction, are 6ft. 3in. in diameter. The rim is of iron, built with a groove for a 2in. solid rubber tire. When the photograph was taken no tires were in place on the wheels. The inventor had been using tires formed of rope as a temporary expedient.

The storage battery weighs 1,200lbs., and being suspended below the axle and at the lowest part of the frame, serves to keep the seat right side up. In fact the bulk of the weight is at such a distance from the axis of the wheels that it steadies the vehicle and there is scarcely any tilting of the seat. In this way the weight of the storage battery is made use of for a good purpose, and, in fact, is indispensable to the successful operation of the machine. The battery at present used in the vehicle consists of forty cells of the Helios-Upton type, having a capacity of 30 amperes at a three-hour discharge rate. The motors are operated in series, and by means of a controller four speeds are obtained. Mr. Holson has driven his vehicle at a speed of sixteen miles an hour, and says that one charge of the battery will propel it for forty-five miles. The motors take from 15 to 23 amperes of current under normal operation.

The vehicle is steered by means of a pair of mechanical brakes of the friction type, one on each hub. These brakes are operated by means of a leather strap held in the right hand of the operator. The action is similar to that used in guiding a horse by means of reins. By pulling on the right hand portion of the strap the brake on the right wheel is tightened, thus slowing down that wheel and permitting the vehicle to turn to the right. The machine is turned to the left by pulling on the left line in a similar manner. Pulling equally on both lines will set the brakes on both wheels and stop the vehicle. The vehicle is said to be steered admirably in this manner. When the power is first turned on the front of the vehicle is lifted a trifle and held there while the power is on. There is said to be no pendulum movement to the vehicle when in motion. When the vehicle is stopped an iron rod is let down under the front platform to hold it while the passenger is getting in or out. The brake mechanism is described as being such that the operator can stop the vehicle within a very few feet when going at full speed. The entire car weighs about 2,500lbs. with two persons in the seat. Steps are, it is stated, to be taken immediately to manufacture the vehicles and place them on the market.

THE members of the Cyclists' Touring Club, at their meeting last week, rejected the proposals that the articles should be altered so as to include automobilists.

THE East Coast Automobile Co., Ltd., has been registered with a capital of £2,000, to carry on the business of motor-car and automobile owners, hirers, and letters on hire of automobiles, etc. The registered office is The Gables, Mill Road, Cleethorpes.

THE AUTOMOBILE MANUFACTURING Co., Ltd., 48/49, Long Acre, and North St., Manchester Sq., all cars in stock, Garage, Repairs.

HERE AND THERE.

M. SERPOLLET left Paris for Nice on Saturday last on a special steam racing car, one of three that have been entered for the race meeting at Nice.

THE Cross of the Legion of Honour has been conferred upon M. Bouton, the veteran automobile mechanic, and partner in the firm of De Dion et Bouton.

THE *Course du Catalogue* has again had to be postponed owing to the bad state of the roads. It will now be run off in April, after the Nice week.

THE Union Automobile de France has resolved to organise an excursion to the Loire, starting from Paris on May 15, and returning on May 20.

THE Austrian Automobile Club have unanimously elected Mr. Roger W. Wallace, K.C., the Chairman of the A.C.G.B.I., an honorary member of the A.A.C.

EFFORTS are being made to induce the Comte De Dion to read a paper on Automobiles at the Engineering Congress in connection with the forthcoming Glasgow Exhibition.

THE Truck Automobile Company, of New Haven, Conn., has been incorporated to manufacture and deal in vehicles propelled by compressed air or electricity. The capital is £200,000.

VISITORS to the recent motor-car exhibition in the Grand Palais, Paris, will be interested to learn that the beautiful building was last week the scene of a cattle show. The Agricultural Hall over again!

MESSRS. ELDIN AND LAGIER, of Lyons, have sent us a copy of their new catalogue, which gives illustrations and particulars of their 20 h.p. car, four cylinder petrol motor and two-cylinder ditto, change speed gear, carburettor, pump, etc.

IN connection with the projected corps of Automobile Volunteers, the following additional names have been received:—Mr. John Bolton, 12 h.p. Daimler; Mr. Ballin Hinde, 12 h.p. Benz; Mr. Noel B. Kenealy, 10 h.p. Delahaye; Mr. F. R. Simms, 20 h.p. Berlin Daimler; Mr. Ernest de Wilton, 3 h.p. tricycle.

THE Sirdar Rubber Company appear to be meeting with considerable success with their Irel Buffer solid rubber tires, which are being used by several public service companies. The tire is so made that the rubber cannot get cut on the edges of the rim, and so waste away; all the rubber acts as a cushion without interruption from the edges of the rim, thus giving longer life to the surface.

THE opening of the exhibition of motor vehicles and accessories which is being held under the auspices of the Reading Automobile Club is fixed for Tuesday next, the 26th inst. The show, which is being held in the Reading Corn Exchange, Market Place, Reading, will remain open until the 28th inst. It should give a filip to the automobile movement in the Reading district.

SIR COURTANEY BOYLE has an entertaining article in this month's *Macmillan's Magazine* on "The Coinage of Words," and incidentally refers to the nomenclature of automobilism. He says that "motor" is better than "auto-motor," and suggests "kion" or "auto-kion" as a substitute for "automobile," "auto-car," "motor-car," or other methods of indicating a self-moving vehicle.

THE Gorton Cycle and Motor Company Earlsdon, Coventry, have secured the whole of the stock and patterns of the Beeston motors, and are now in a position to do repairs to motors and motor-tricycles of this description. The business is being managed by Mr. Gorton, jun., who rode from London to Brighton on the first English-made motor-tricycle.

A MEETING of the creditors of J. H. Swift, of Whitwick, retired licensed victualler, was held at Derby last week. The liabilities amount to £145, and the assets to only 10s. The debtor states that his failure is due to his having purchased a motor-wagonette, which was not capable of working and being let out on hire as represented. The sellers refused to take it back and refund the £50 deposited.

MESSRS. R. J. Meccredy and Co., Ltd., of Dublin, have sent us a copy of the little booklet they have lately issued, entitled 'The De Dion Voiturette: Its mechanism, and how to drive it.' It is a reprint of a series of articles which appeared in the Irish

motor magazine, the *Motor News*, and is written in simple, non-technical language for the benefit of beginners. A number of pages are devoted to instructions, "Before Starting"—how to start—and "How to Drive." Then follow chapters on "Care of the Car," "Roadside Troubles," "Electrical Ignition," etc. The little work is one that can be recommended.

IN their report laid before the London County Council last week, the Fire Brigade Committee gave some details of the progress of their experiments in the use of liquid fuel for fire engines. On Oct. 24, 1899, the Council authorised the expenditure of a sum not exceeding £100, to enable the chief officer to try with a steam fire-engine the fittings invented by the Clarkson and Capel Steam Car Syndicate (Limited), for the use of oil fuel. The committee are of opinion that, with a view to a proper comparison being made, the Clarkson system should be tried with a second fire-engine, and they have received from the firm an



REDUCTION OF THE AUTOMOBILE CLUB EXHIBITION POSTER.
(PRINTED IN FULL COLOURS.)

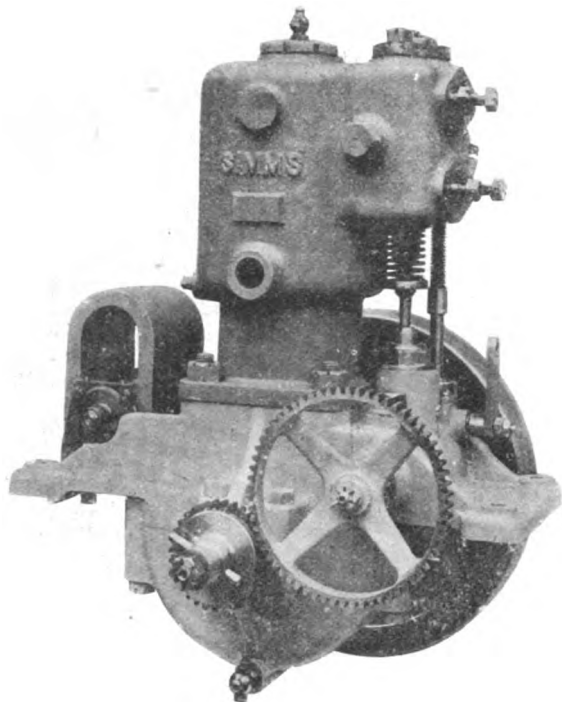
offer to supply and fit for £80 oil fuel apparatus to No. 73 steam fire engine. They accordingly recommended this expenditure being incurred.

A WAGER which is interesting because it involves two important questions in motor-car construction—weight of machine and maximum speed, has been arranged between M. Charron, the well-known French *chauffeur*, and M. Canello, of the firm of Canello-Durkopp. M. Canello undertakes to deliver within three months an automobile of seventy h.p. weighing not over 1,200 kilogrammes (1 ton 400 lbs.) and attaining a rate of speed of 120 kilometres (seventy-five miles) an hour. The trial must take place over a course of 100 kilometres and during two kilometres the speed of 120 kilometres must be reached. If these conditions are not fulfilled Canello will pay Charron the sum of 10,000 fr. (£400), while, on the other hand, this sum will be paid by Charron should Canello succeed.

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THE SIMMS 6 H.P. PETROL MOTOR.

THE accompanying illustration shows the new Simms 6 h.p. water-cooled motor; it is the outcome of many years' experience of gas and oil engines, and, owing to the unique results obtained, is claimed to possess many important advantages over any hitherto placed on the market. The motor, which is entirely automatic in its action, is fitted with the Simms-Bosch magneto-electric ignition. There is no open flame whatever, consequently no possible danger of fire or explosion. The motor is, moreover, fitted with Simms' timing gear, by which the time of the ignition can be advanced or retarded, thus enabling the speed of the motor to be altered at will, the maximum being about 1,500 and the minimum about 200 revolutions per minute. The spark may be observed through a specially provided sight-



hole. When running at 1,000 revolutions per minute the Simms motor gives 6 h.p., and at 1,200 revolutions per minute 7 h.p. By means of a constant level float-feed the supply of petrol to the motor is rendered entirely automatic, no regulation of mixing valves being necessary.

An inlet-valve regulator is provided, which not only effects a great saving in fuel when the motor is not required to do its full work, but enables the lowering of the speed independently of the timing gear. The engine is very simple in construction, and the valve arrangement is so designed as to be very readily accessible. Automatic lubrication and proper bearing surfaces are also a main feature. As regards the water-jacket, it may be mentioned that the cylinder-head and cylinder are cast in one, so that there are no water joints to make. The diameter of piston is 110 m.m., and the stroke of piston 100 m.m. Complete and ready for running and including magneto-machine, float-feed, vaporiser, etc., but exclusive of flywheel, the engine weighs eighty-two lbs.

We learn that Mr. Charles H. E. Rush, of the London Autocar Company, has taken out a licence as a valuer of motor-cars, motors, etc.

The business of Messrs. Delahaye and Co., of Paris, the well-known motor-car builders, has been registered as a company with a capital of £32,000.

MESSRS. FRISWELL, LTD., will shortly open the premises at 1, Prince's Road, Holland Park Avenue, W., as "The Automobile Tattersall's." Storage will be available there for about sixty cars, and five mechanics will form the staff, ready to carry out motor repairs of any kind.

SOME AUTOMOBILE EXPERIENCES.

THE March House Dinner of the Automobile Club was held on Wednesday, the 13th instant. After the dinner a discussion on "Some Motor Experiences" was opened by Mr. Henry Edmunds, M.Inst.C.E., M.I.E.E. The following is an abstract of Mr. Edmunds' paper:—

My first experience with motor-cars began—1897—as is often the case, with a De Dion tricycle, with its air-cooled cylinder, electrical ignition, surface carburettor, and control effected by varying the mixture, or altering the period of firing, or not firing at all. The experience gained was certainly very useful; and I think that any man who can comfortably manage a De Dion tricycle has gone a long way towards mastering a good many of the difficulties common to all petrol motors and explosion engines.

Governing.—The alteration of the mixture, however, for purposes of varying the speed is not desirable. There is only one proper mixture when true combustion takes place, when there is an absence of smell, and when you attain the best results. The excess of air or excess of petrol often cause great annoyance to the public, owing to the smell. I therefore think that this mode of governing an engine by varying the mixture is very undesirable; and the constant mixture engines, such as the Daimler, with a centrifugal governor which entirely cuts off the charge instead of varying the mixture, are, from this point alone, very much better than the other type of engines.

We are not here to discuss improvements in engines, but I think the right direction for the governing of an explosion engine will be, not by varying the mixture as in the De Dion type and not by cutting out a cylinder or cylinders as in the Daimler, which is apt to give an intermittent turning movement, though probably very economical as regards the consumption of petrol, but we must seek to govern by varying the compression according to the work demanded from the engine, keeping our mixture of petrol and air constant, but altering the amount of mixture according to the demand.

Ignition.—The ignition or firing question is one of considerable importance. There is no doubt that great differences are caused by firing, and it is important that the firing should occur at the proper moment. In electric ignition this is comparatively easily arranged for. By moving the commutator you can advance or retard the sparking. In the tube ignition, however, the conditions are different. If you fire too early with tube ignition you are apt to have a bad back-stroke in starting your engine. Some people have gone as far as, after lighting the burners, seeing that they are in good condition, and working properly, to then momentarily turn them down, slightly cooling the tube, and thus making it fire a little later and getting rid of the shock. In electric ignition, all this is under most complete control. You set your commutator to fire late, which enables you to start your engine with great comfort, and then you can regulate the firing earlier until you get to the best condition. In engines with two or more cylinders, if care be not taken, one may get a sort of mean, instead of the maximum, due to the contacts on the commutator not being in the exact position to produce the best results in each cylinder. The experiences of some friends (especially Mr. Bradley's, which are very remarkable), of the difference between tube and electric ignition on a large sized gas engine used for power purposes, have an important bearing on the subject now before us.

I referred just now to the question of compression in tube firing; but the question of compression in electric firing is very interesting. As probably some of you are aware, I have written to the journals, calling their attention to some observations I made some time back on this point. I had had unsatisfactory and intermittent firing in my Daimler and removed one of the plugs to see what was the matter, thinking probably it had become covered with oil and grease. To my surprise it was clean and in good order, and sparked freely when I tried it in the atmosphere. I noticed that the air-gap was fairly wide, about a sixteenth of an inch. I closed the space to about a thirty-second, replaced the plug in the cylinders, and the firing was all that could be desired. On considering the question, I concluded that the pressure in the cylinder had a good deal to do with the distance that the spark could jump. Roughly, the four-volt primary on, say, a Blake induction coil will in the air give on the secondary a $\frac{1}{4}$ -inch spark at atmospheric pressure. When, however, the compression is carried up to ten atmospheres the same spark will not jump a millimetre. It is, therefore, very important for those who are using electric firing to see that the air-gap is not too wide. I think, however, we are often minimising the battery a little too much, and unnecessarily. Under ordinary conditions, four volts may be enough; but an extra two volts is well worth trying. You find your firing is freer and more uniform.*

Batteries.—All things considered, I think the secondary battery or accumulator has most to commend it, especially where you have a convenient source for recharging available. The voltage with lead couple is about two volts, and two couples or four volts are generally enough.

Ignition Plugs.—I have used with considerable success both the ordinary De Dion and the Reclus plug, and also a form employed in the Decauville. This, though rather more delicate than the shorter ones, has the advantage of being easily and readily repaired in the event of the porcelain fracturing. It is a curious thing that many porcelains break away when first used; but if they survive their infancy their length of life is indefinitely prolonged; and I have very little trouble through these breaking down.

* Mr. Edmunds made very interesting experiments to show that though a spark may be good under ordinary atmospheric pressure yet under compression no sparking took place.

Position of Plugs.—As to the better position for the plugs, at the top or side of the cylinder, I think there is no doubt about the latter being better.

Stopping and Starting Engine.—One advantage of electric ignition is that under suitable conditions you can stop and start your engine without having recourse to turning by hand. In order to do this it is only necessary to arrange that before the stopping of the engine you open your battery circuit. This causes the firing to cease. Meanwhile the momentum of the fly-wheel will cause an explosive charge to be drawn in. This is not exploded, but when the pistons come to rest it remains in some cases for over twenty-four hours, and it is only necessary by means of a separate firing key to fire the right cylinder and the engine is started up.

The Clutch.—In sequence we might pass on from the engine in the Daimler through the clutch to the speed change gear. Different motorists have different methods of keeping the clutch in good order, an occasional dose of castor oil keeps the leather pliable and soft, while a puff of Fuller's earth prevents too much slipping through grease having got on the surfaces.

Change Speed Gears.—From practice I have found it best to completely declutch when going from a low to a high speed, and very often in going from a high to a low, especially when ascending, to slip over the changes without declutching, except with the slightest relief of the clutch by the foot synchronously with a movement of the hand on the levers.

Chains.—Keeping a chain in good order is of considerable importance; a duplicate set of chains is very desirable; and a capital method of keeping them in excellent order if a car is in regular use is to wash the dirt and grease out with paraffin and then boil in Russian tallow. A good method of doing this is to have the chain suspended from a pulley with the lower portion of the chain say a foot or so submerged in a bath of molten tallow; then by carefully rotating the chain allowing time for the tallow to partially run back and set, you get that complete envelopment of the grease which I can from experience say adds considerably to the life and good running of the chain.

Wheels and Tires.—On my new car "Antrona" I had Falconnet compound pneumatic tires. These gave great comfort and resiliency and remarkable freedom from side-slip, there never having been a side-slip on this car. The tires should not now properly be called pneumatics, because I had the air tubes removed from the driving wheels since my run in Scotland last August.

Petroleum Spirit.—I find a good method of keeping the burners in order when flames are used is after putting out the flames to allow the jet of unignited petrol to issue for a few moments, which appears to dissolve and wash out any oily or carbon matter that may have formed, and which would otherwise solidify and obstruct.

Brakes.—A word on the question of brakes. In addition to a spray all cars should be fitted with an absolutely reliable hand brake that will prevent the car running backwards. Messrs. Taylor, of Wandsworth, have recently altered my car, fitting a most satisfactory steel band wood-lagged sprocket brake, doing away with the steel cords which are a great nuisance and apt to stretch, and which on several occasions have given me a good deal of trouble by jamming and not releasing themselves when wanted, and by impeding the progress of the car sometimes when going over a very rough road.

In the discussion which ensued, Mr. Edge, speaking of ignition plugs, endorsed Mr. Edmunds' remarks as to the advantage of the plugs being in course of the exhaust. He deprecated the slipping of the clutch in high-powered cars, and referring to side slips, said the only practice consistent with safety is to drive slowly on greasy surfaces. On the subject of sparking he gave his experience of the insulation of wires, which showed that many wires were insufficiently insulated for motor ignition purposes. As regards the position of plugs, his experiments showed that there was an advantage of 10 per cent. by the plug being on the top of the cylinder instead of at the side. Further, he found that the sparking plug which is right for one cylinder is not right for another. Mr. Edge was in favour of electric ignition and referred to the danger of tube ignition in respect of fire. As regards the inlet valve, his experience was in favour of three small ports instead of one large port, as the former showed less back-firing. The three-port valve was, however, more expensive and had more working parts. Speaking of brakes, he feared the Taylor brake might be disadvantageous on pneumatic tires on account of the difficulty of adjustment and consequent inclination to side-slip.

Mr. Lyons Sampson did not think the Daimler governing was so satisfactory as the Benz governing, as in the latter the compression and mixture were constant. Speaking of compression, he thought probably six atmospheres was the highest which can be properly used in a petrol engine. The possibility of starting after twenty-four hours suggested that the spray carburettor was a wasteful contrivance. He had found that the freezing of circulating water might be prevented by addition of common salt, and that side-slip might be caused by either putting on brake or putting on power, but by releasing power control was obtained sooner. Speaking of induction valves, he said that the American practice is now to use several small ports instead of one large one. The whole secret of valve action was the speed of induction, but there was a limit to the speed of induction. He considered a larger area valve is better than a small area with too high a speed of induction.

Mr. Northey, referring to electric ignition, said on an engine running at higher speeds the De Dion contact breaker was perhaps the best; but the difficulty was to keep the contact points sufficiently clean. Plugs

may arrive at a temperature which may prevent the plug sparking at all. Porcelain of plugs at a high temperature becomes an excellent conductor of electricity. Consequently, at high temperatures, electricity prefers to pass through plugs rather than through the points. He explained that for the purpose of a paraffin engine he had devised a plug in which there is an air space between the porcelain and the outer metal of the plug, the explosive mixture being drawn into the air space and expelled, thus keeping the ring round the sparking point and the sparking point free from carbon.

Mr. Sennett, referring to the slipping of tires, said the petrol carriage was at a disadvantage as compared with a steam carriage on account of vibration. He emphasised this by the illustration of a piece of wood on an inclined plane. The piece of wood may be made to slip if the plane be caused to vibrate. As regards the freezing of the water circulation, he asked if salt would not be apt to set up corrosion. He mentioned that in France some five years ago five *chauffeurs* in comparing notes found that all of them had had their carriages on fire.

Mr. Manville spoke of an arrangement he had adopted to prevent the bursting of an exhaust box by fixing a cock by which the exhaust may be let into the air direct without going into the exhaust box. On cutting off the electric ignition the unignited charges are thus let out into the air without charging the exhaust box. Fouling of plugs by lubricants can be avoided by not turning on lubrication into the cylinder until the car has run two or three miles. He had run his car from last November for 1,000 miles, and had been free from breakdown, and he attributed this to the fact of his not interfering too much with the engine.

Mr. Beevor said the porcelain should not be packed too tight, but a small amount of play should be left. Plenty of platinum should be allowed to project above the porcelain. His experience was that drivers of Daimler cars were always grinding the valves of their cars, whereas on the Benz his experience was that valves should not be ground, and if they are ground the motor does not run so well.

Mr. Shrapnell Smith suggested that a benefit might be derived from an arrangement by which the flame in a tube-ignited car might be retired to the end of the tube and brought nearer in at will. Referring to exhaust silencers, the speaker had been advised to stuff his exhaust box with the empty cartridges of "Sparklets."

Mr. Foster Pedley, speaking of brakes, said that uncompensated brakes were in his experience dangerous. He had examined Mr. Edmunds' Falconet "Compound" tires after 10,000 miles running, and had never seen any tires so satisfactory as regards wear.

Colonel Crompton bore out what had been said by Mr. Edmunds as to the disintegration of rubber tires. Speaking of the lubrication of chains, he said that with the use of a proper lubricant chains have an almost unlimited life. He recommended original suet out of the animal with flaked black-lead. Oil or ordinary tallow and soft lubricants were unsuitable.

Mr. John Allen drew attention to the horn or bracket of the front spring and its weakness where it joins the frame. He also mentioned the tension rod of chains.

PRINCESS FRIEDRICH CARL OF HOHENLOHE is making a journey from Munich to the Riviera in a motor-car.

THE Motor Power Company, of 14, Regent Street, W., have now on view a 6 h.p. Gladiator *tonneau* of the type illustrated in our issue of the 2nd inst.

THE Orleans Railway Co. are now using a motor parcels delivery quadricycle for the transport of papers, etc., between their various offices in Paris.

WE notice that the British Neostyle Co., Ltd., has in use a Roots and Venables parcels express delivery van, while Messrs. Dewars, of whiskey fame, are running a Thornycroft steam-wagon.

A MOTOR-CAR section is being organised by the Italian Automobile Club in connection with an International Exhibition of Sport which is to be held in Milan from the 1st to the 27th May next.

THIS (Saturday) afternoon the members of the Automobile Club will hold a run to Sevenoaks. The start will be made from the Club House at two p.m., and dinner will be taken at the Crown Hotel, Sevenoaks.

MR. A. E. MAJOR, of 29, Broad Street, Reading, who has embarked in the motor trade on an extensive scale, being the district agent for half a dozen builders, is also carrying a stock of petrol and motor-car accessories. He is also well equipped to carry out any necessary repairs.

A GENERAL meeting of the Midland Automobile Club was held in Birmingham last week. It was decided to affiliate with the A.C.G.B.I. The following officers were appointed:—Mr. J. Broughton Dugdale, president; Mr. F. Lanchester, honorary secretary; and Mr. Allan Tangye, honorary treasurer. It is satisfactory to learn that the membership of the new Club already numbers sixty.

A MOTOR FIELD BATTERY.*

BY MAJOR H. A. BETHELL, R.F.A.
(Concluded from page 31.)

Employment of Motors in Savage Countries.—The motor is dependent for its working existence on the supply of fuel—any sort of fuel—and water. These are to be found in any inhabited country. In India or China, for instance, the motor would do well in this respect. But in waterless districts such as are to be met with in South Africa a difficulty would arise, which would have to be met by carrying extra water-tanks. The motor uses about 1 cwt. of water for every 10 miles. In an ordinary civilised country it would carry 2 cwt., or 20 miles supply in its tanks, besides the water in the boiler. For South Africa it would be necessary to add an extra tank holding 5 cwt. of water, or a 70 miles' supply in all; this would reduce the average road speed from 10 to 8½ miles an hour. As when using the low gear in bad ground the consumption of water would be about treble—say 3 cwt. per 10 miles—this allowance of water might be reckoned upon for 40 miles of good and bad going. This is not a very encouraging prospect, but the performance is a good deal more than could be expected of a horse. For very heavy roads in a dry country—luckily a rare combination—it would be necessary to add motor water-tanks to the equipment. A motor tank to keep up with the battery could carry 2½ tons of water; thus each

battery, would be far below that of a motor battery, capable of doing its ten miles an hour for twelve hours running. The superiority of the motor over long distances is so marked that a motor battery, even if restricted to roads and cultivated ground, would in ninety-nine cases out of a hundred be more efficient than a horsed battery.

Motors for Heavy Artillery.—It may be wondered why I have not advocated the employment of motors for drawing heavy guns instead of field guns. There is no doubt a useful field for the motor-car in this direction. The subject is, however, a difficult and complicated one, and, strange as it may appear, the application of motors to field artillery is by far the simpler question of the two. For field artillery the weights to be dealt with are only about double those of our present equipment, and the general dimensions of the carriages remain about the same. But when it comes to pulling a 4·7 gun over cultivation, difficulties of weight of equipment arise. Our leading manufacturers find by experience that even for road work the motor must be twice the weight of the trailer. A motor to pull a 4·7 gun would have to weigh at least 10 tons; if it were lighter the gun would be liable to take charge of the motor on a slope. The 15 ton weight of the gun and motor would be too much for many country bridges,* and very broad wheels would be required to prevent sinking into the ground. I do not mean to say that there is any impossibility about getting a motor to pull a 4·7 gun, but only that the difficulties in the way are of a different kind from those met with in considering the application of motors to field

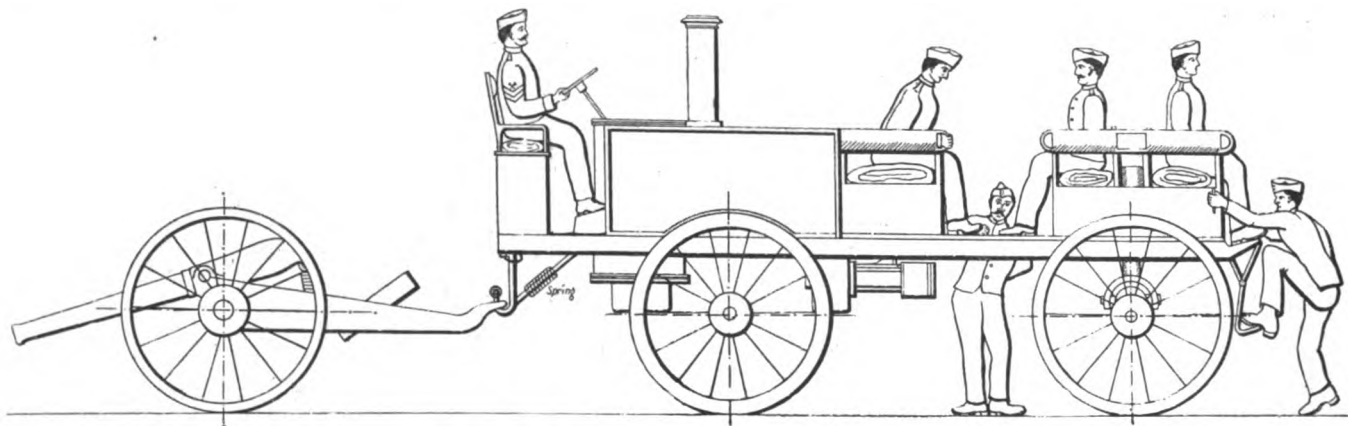


FIG. 1.—ELEVATION OF STEAM FIELD ARTILLERY MOTOR TO PULL A 15-POUNDER GUN AND TO CARRY 96 ROUNDS OF AMMUNITION AND SIX GUNNERS.

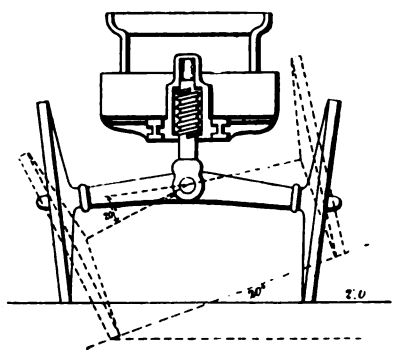


FIG. 2.—FRONT VIEW.

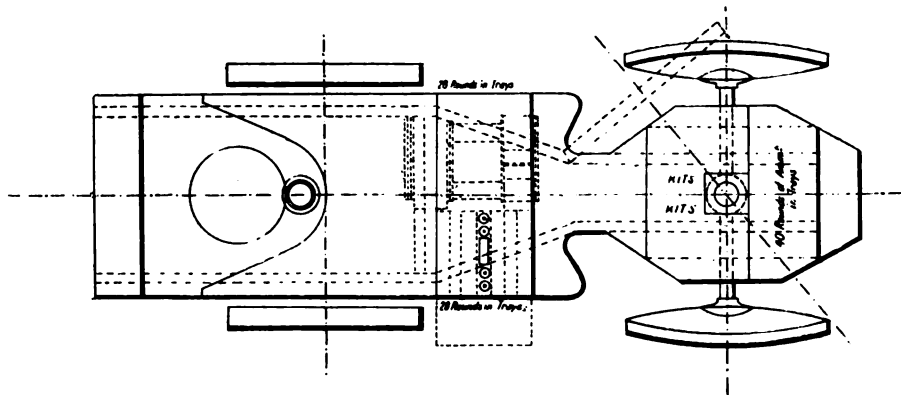


FIG. 3.—PLAN.

additional tank would add 25 miles of good going or 8 miles of bad going to the range of mobility of the battery.

As regards fuel there is less difficulty; thanks to the steam-blast, the boiler will burn anything combustible, from cow-dung to petroleum, and in any inhabited country there need be no difficulty about finding something to burn.

Partial Application of Motors to Artillery Purposes.—Supposing that it were established by experience that the motor, even when built to special "flexible" design, is incapable of moving across country, but that it can be trusted to traverse both good and bad roads, it would still be of great value to field artillery. If the whole of the wagons were drawn by motors, these could carry 200 rounds each. They would be brought up by road as near as possible to the battery in action, and the wagon bodies could then either be limbered up to the gun limbers and brought up to the guns, or the limbers could replenish from them. When marching along the road, the gun horses could be relieved by limbering up the guns behind the motor wagons, leaving the horses to trot away with the empty limber; and the detachments and kits and all impediments could be piled on to the untiring motor. This compromise would greatly improve the marching power of the battery, while leaving its mobility over rough ground unimpaired. But the resulting general mobility of such a composite battery, though superior to that of a horsed

artillery; and I have preferred to deal with what seems to me the easier subject.

Concluding Remarks.—To sum up, we may conclude that the motor-car has no essential disqualification such as to render it impossible from a military point of view. It is cheaper than horse flesh, and far more powerful, enabling heavier guns and a double supply of ammunition to be carried. Up to a certain point, the motor is far more mobile than a horsed vehicle, being able to cover 100 miles a day without difficulty. Over heavy, but not broken ground, such as ploughed fields or standing corn, we may expect the motor to hold its own fairly well with the horsed vehicle. All that remains to be established, to enable the motor to take its place as a military vehicle, is the certainty that it can be made to cross rough ground.

It should be recollected that we are not now considering the possibility of driving a road-car across country, but of constructing a motor vehicle more or less on artillery lines, with 5 foot wheels, and such that no ordinary rough ground shall stop it. To ensure this, the motor must be (1) not liable to upset; (2) not liable to sink in deep ground and, (3) the construction and arrangement of weights must be such as always to give a good bearing for the driving wheels and provide against the contingency of their slipping round without

* From the Proceedings of the Royal Artillery Institution.

* The limit of weight prescribed by Local Boards for vehicles crossing these bridges is in most cases 4 tons.

advancing the vehicle. If this last item can be realised, there is no difficulty in providing power enough to propel the machine across country. Still, in spite of the extra power, no self-propelled wheeled vehicle can ever hope to rival a horsed vehicle at crossing really bad ground, because it is always easier to pull a carriage over obstacles than to push it from behind.

Now, up to the present, no trials of motors across country have been made, nor have any cars been built with a view to military requirements. No one has asked for them, and it is not the business of manufacturers to build experimental vehicles to meet a problematical demand. But several of our leading car-builders are of opinion that there is no very great difficulty in complying with the conditions proposed; and if the War Office were to offer any encouragement—say, an order to six leading manufacturers for a car each, built to Royal Carriage Department design, modified to suit manufacturing specialities—this offer would find a ready response.

The drawings annexed to this paper refer to a design which seems to promise well. It represents a car intended to carry 96 rounds of 15-pr. ammunition and 6 gunners, and to pull a 15-pr. gun. The principal details are:—

Weight of car empty	...	3½ tons.
Weight with 6 gunners, 1 driver, 96 rounds ammunition, 7 kits, 2 cwt. coal, and boiler and water tank filled	...	5.57 tons.
Weight on leading wheels	...	1.15 tons.
Weight on driving wheels	...	4.45 tons.
Diameter of wheels	...	5 feet.
Width of tire, leading wheels	...	4 inches.
Width of tire, driving wheels	...	8 inches.
Track	...	6 foot 6 inches.
Angle of lock	...	44 deg.
Diameter of turning circle	...	35 feet.
Vertical angle through which fore axle can oscillate	...	60 deg.
Wheel-base	...	10 feet.
Length over all	...	19 feet.
Description of engine	...	Thornycroft's compound.
Speed of engine, revolutions per minute on high gear, up to	...	450.
Speed of engine, revolutions per minute, on low gear, up to	...	650.
Diameter of high pressure cylinder	...	4 inches.
Diameter of low pressure cylinder	...	7 inches.
Stroke of pistons	...	5 inches.
Nature of boiler	...	Thornycroft's straight tube.
Boiler pressure	...	180 lbs.
Boiler, how fired	...	From above.
Fuel, description	...	Any.
Fuel consumed per mile, coke, about	...	6½ lbs.
Whether steam condensed	...	No.
Exhaust steam, how disposed of	...	Superheated, up the chimney.
Motion how conveyed to driving axle	...	Double helical gearing.
Driving wheels, how connected	...	Jack-in-the-box gear.
Driving power, where applied	...	To rims of wheels.
Driving power, how applied	...	Thornycroft's driving springs.
Steering gear	...	Chains to fore axle.
Speed on level road, miles per hour average	...	10.
Speed extreme on level road, miles per hour	...	12.
Height of centre gravity, without gunners, about	...	5 feet.
Upsetting angle, without gunners, about	...	33 deg.

MR. MARK MAYHEW has arrived at Nice with his 16 h.p. Napier. He was accompanied by Mr. Russell, who rode with him from London to Southampton and from Havre to Nice, *via* Paris, Bordeaux, and Marseilles.

THERE was quite a humorous touch about the menu card of the inaugural banquet of the Lincolnshire Automobile Club on Saturday last. Each of the items was given an automobile connection, Hors d'Œuvres being classed at starters, Sweetbread à la Française as inlet valves, Lobster Patties as clutch levers, Roast Lamb and Mint Sauce as explosive mixture, Champagne Jelly as thick lubricant, Blanc Mange as tremblers, Stewed Fruit as belt tighteners, Custards as exhausts, and Dessert as silencers!

A MEETING of the members of the Motor-Vehicle Users' Defence Association is to be held at the Automobile Club on the 29th inst., when the following resolutions will be proposed:—(1) That the Motor-Vehicle Users' Defence Association hereby agrees to be merged in the Motor Union about to be formed, and that the Trustees be and are hereby authorised to direct that the funds of the Association be handed over to the Motor Union; (2) that the Secretary be authorised, with the consent of the Trustees, to cancel the trust deed; (3) that the Committee and Secretary be, and they are hereby authorised and directed to hand over such funds as may be in their hands to the said Motor Union; (4) that all necessary steps be taken to wind up the affairs of the Motor-Vehicle Users' Defence Association.

FURIOUS DRIVING CASES.

ARTHUR E. GEORGE was at the Newcastle Police Court last week fined 8s. and costs for the furious driving of a motor-tricycle along Blackett Street. The evidence of P.C. Johnstone was to the effect that George was driving the tricycle at the rate of eighteen miles an hour, and he added that the machine "jumped" two feet in the air at the crossings. The defendant denied that he was driving at such a pace. He said that owing to the high speed of the engine, and the consequent noise of the exhaust, the tricycle appeared to be going much faster than was actually the case.

AT the Derby County Police Court last week, Archibald Hedge, in the service of the Earl of Harrington, was summoned for furiously driving a motor-car on the highway at Elvaeton on the 20th February. Mr. J. Bostock, defended Hedge, who denied the offence. P.C. Burchley said the defendant was travelling at 20 miles an hour, and this was corroborated by two witnesses. For the defence it was stated that the defendant was away from Elvaeton Castle three-quarters of an hour, and in that time travelled only 7½ miles, so that he could not have been going more than 12 miles an hour. A fine of 5s. and costs, however, was inflicted.

THE OLD, OLD STORY.

Hobby, pace; Bobby! race.
Caught! summons; Court: rum 'uns.
Firth speaks; Mirth, Beaks.
Vain aid; Fine: paid.

—R. W. B.

DRIVING TO THE COMMON DANGER.

HERBERT GYNES, in the service of Messrs. Diespeker, 59-60, Holborn Viaduct, appeared to a summons for wantonly driving a light locomotive to the common danger. Police-constable Billing deposed that he was going at a very rapid pace. He turned into Snow Hill without any warning to other drivers, and without slackening. Several men had to pull their horses upon their haunches in order to avoid colliding with him. He then "swung" over to the near side, colliding with a vehicle. The carman in question having given evidence, the defendant protested that he was not going at more than three and a-half miles per hour. He had been the instructor to the Bournemouth Corporation, and was very careful. With reference to the accident, it was caused through the horse slipping. The Alderman: There was evidently a great want of care on your part. You must pay 20s. and costs.

A DISPUTED PURCHASE OF A MOTOR-CAR.

SHERIFF LEA has issued judgment in an action raised in Forfar Sheriff Court, in which James MacFarlane, cycle and motor-car dealer, Perth, sued Alexander Ross French, dentist, Forfar, for £135, being the price of a motor-car said to have been purchased by defender from pursuer in July last. Defender conducted his own proof, and the case occupied the Court for four days. The Sheriff finds that, after several exhaustive trials, the defender purchased the car from pursuer and took delivery thereof; that the defender has never rejected the car, but still retains possession, and refuses to pay for it; therefore deems for the purchase price and finds defender liable in the whole expenses of process. In a note dealing with the case his Lordship says that by a long and tedious proof conducted by himself with a pertinacious disregard of all relevancy and proportion, the defender had made it quite clear that in this case there was no room for the plea of rejection. Indeed, the defender spared no pains to show that before he took delivery of the car he had seen it at its worst and discovered every fault which he now alleged against it.

REFUSING TO STOP.

AT Kingston last week, William Watts was summoned for neglecting to stop a light locomotive of which he was the driver on a person having charge of a restive horse putting up his hand as a signal for that purpose. Mr. Peter Grain, barrister, appeared for the defence.

Samuel Streaight, a coachman, of Avenue Elmers, Surbiton, deposed that on February 28 he was driving a pair of horses in the Avenue Elmers, when he saw a motor-van approaching, and he raised his hand as a signal for the driver to stop. The driver (defendant), however, continued to come on, and did not stop until he had passed witness. Consequently witness's horses commenced to plunge, and one of the animals fell upon the footpath. Witness asked defendant why he did not stop sooner, and he replied by swearing at witness, and when his name and address was demanded he refused to give it. He (witness) therefore called upon a gentleman to procure the defendant's name and address, and he succeeded in doing so.

Mr. Cockburn, Chairman of the Bench, then entered the witness box, and stated that while, on the 28th ult., he was standing at the front door of his residence in Avenue Elmers, he observed a motor furniture van standing in the road. Complainant came out of some stables at the top of the Elmers steadily driving a pair of horses attached to a victoria. At the same time witness heard the sound of a whistle or hooter, and noticed another motor-van, driven by the defendant, coming up the Elmers. When he got up to the stationary motor-van defendant,

instead of pulling up as he ought to have done, pulled wide out to the right and back again to the left, close upon complainant's horses. The animals plunged, and one fell, and had it not been for the promptness with which the groom sprang from the box, or had the driver lost his head; he (Mr. Cockburn) would have witnessed the worst accident he had ever seen.

By Mr. Grain: Witness was not aware that the roads were very heavy. Defendant was not travelling at an excessive pace. It might have been four miles an hour. There was room enough for three vehicles to pass in the road at the same time. The stationary motor van was on the left of the road, complainant was on the right, and the motor which defendant was driving, which belonged to Messrs. Spiers and Pond, was coming up the centre of the roadway. The defendant elected to give evidence on oath, and stated that he was the driver of Messrs. Spiers and Pond's motor van, which made the journey from London to the Southampton Hotel, Surbiton, daily. He first saw complainant when he was thirty yards off, but he did not observe him hold up his hand, or he would have stopped, as he always did. When he saw the horses reative he pulled up, and stopped by the side of the stationary van.

For the defence Mr. Grain submitted that defendant did not see the coachman put up his hand or wave his whip.

Mr. Innes, who had temporarily taken the chair, said that the magistrates considered defendant in fault, and he would have to pay a fine of £5.

Mr. Grain said that in view of the case in all probability going to a higher court, he would like to know on what grounds the magistrates declared their verdict.

Mr. Innes replied that it was on the grounds that the coachman gave the signal for defendant to stop, and that defendant saw the signal.

ACTION BY THE DAIMLER MOTOR COMPANY.

ON Friday last week, in the Chancery Division of the High Court, before Mr. Justice Buckley, Mr. Buckmaster applied in the case of the Daimler Motor Company v. British Motor Traction Company, which was an action for an injunction to restrain the defendants from registering any company under the name of the Daimler Wagon Company, or any other name likely to deceive the public, that the motion should stand till the trial, and that the hearing should be expedited. Counsel said that the plaintiffs based their case on the probability of misconception by the public that the defendants' motor-cars were the plaintiffs'. There was a conflict of evidence, and he suggested that the defendants should undertake not to proceed with the registration until the motion could be disposed of finally. Mr. Aston Cross, for the plaintiffs, said he was willing to give the undertaking not to proceed with the registration until after Easter, on the understanding that the motion should be heard immediately after the vacation. His Lordship sanctioned the arrangement, and directed the motion to be set down at once for that purpose.

TRACTION-ENGINE OR LIGHT LOCOMOTIVE?

AT the Chelmsford County Sessions, last week, Daniel Cornish, brick manufacturer, Hutton, was summoned for using a locomotive on the highway, not being licensed by the county council, at Ingatestone, on February 13th. Mr. F. P. Sutherly prosecuted, and Mr. E. J. Naldrett was for the defence. At the last Court Sergeant W. Cowell deposed that the locomotive was in use upon the road, that it had no licence, and he alleged that it emitted visible vapour.

Mr. Naldrett contended that the Act of 1898 had no application whatever to this locomotive, and that the locomotive complied with all the requirements of a light locomotive: it could travel backwards and forwards, it did not exceed six feet in width, it more than complied with the requirements as to the width of wheels, and the emission of steam was not continuous, but only temporary or accidental. It had been successfully designed and constructed to come within the meaning of a light locomotive, and the Clerk of the Council had come to the conclusion that a licence was not required. Mr. J. H. Mann, managing director of Mann's Patent Steam Car Company, stated that his firm turned out about one of these locomotives every week, and there were between forty and fifty now in use in various parts of the kingdom, which were all working without licences. They had been so constructed as to come within the Light Locomotives Act, 1896. George Taylor, engineer, Chelmsford, said he had seen steam issuing continuously from the funnel. In his opinion, it was impossible for an engine of this character to work without some amount of steam and smoke being emitted. He should describe it as a miniature traction engine. The Bench came to the conclusion that this was a locomotive which ought to be licensed, and the defendant was fined 5s. and costs. It was intimated that there would be an appeal.

DAMAGES FOR PERSONAL INJURIES.

AT the Leicester County Court, on Tuesday, the case of King v. the Leicester Motor-Car Company came on for hearing. Mr. Bray appeared for the plaintiff and Mr. Harding for the defendant company. The plaintiff, a commercial traveller, of Leicester, sued the company for £4 13s., damages for personal injuries sustained while on a motor-car in Humberstone Gate. Plaintiff said that on October 8th last he got on the front of a motor-car in Humberstone Gate. He took a half-crown

from his pocket to pay his fare, when the car suddenly stopped. The driver got down and opened the side of the motor, and started the engine, when the handle suddenly swung round and struck him a violent blow on the hand. He had to lay up for a week, because the doctor bound his hand up so that he was unable to work. Percy Willett corroborated. Mr. Harding, for the defence, said it was physically impossible for the accident to happen. He called Thomas Menzies, who said the car was stationary while he was attending to the motor. The steering handle was straight, and could not have moved unless the car moved very suddenly to the right or left. The handle would not turn suddenly unless the car was going very fast and the front wheel struck a stone. Mr. Cann, of the Leicester Motor-Car Company, gave similar evidence. His Honour said this was a case where an ounce of fact was worth a pound of theory. He could not accept evidence as to what ought or ought not to have happened, against the definite statement of the plaintiff and the witness Willett. He found for the plaintiff for £3.

THE Belgian Automobile Club is organising a kilometre race to be run off on 19th May next.

MR. G. F. TAYLOR, High Street, North Finchley, is stocking petrol and motor accessories. He is also able to undertake repairs.

THE South-Western Motor Company started running their motor-omnibuses between Streatham and Clapham Junction on Monday last.

AT Newmarket, on Tuesday, Dan Maher, the American jockey, was ordered to pay a fine of 10s. and 11s. 6d. costs, for driving a motor-car on a footpath near Newmarket.

WE learn that the Eadie Manufacturing Company, Redditch, are laying themselves out specially to produce motor parts and fittings for the trade on a large scale.

ARRANGEMENTS are being made at the works of the Ward-Leonard Electrical Company, at Brouxville, N.Y., to manufacture light cars on the Darracq and Renault systems for the American market.

MR. C. T. CROWDEN, of Leamington, has recently completed the work of converting from a horse-drawn fire engine into a motor-vehicle. The car has lately been subjected to a series of trials in the Worcester district with satisfactory results.

A TELEGRAM from Capetown states that a motor Maxim gun, invented by an officer of the Capetown Guard, has been officially inspected and approved for service. The invention consists of a Maxim gun mounted on a motor-car.

OUR readers will be interested in learning that arrangements have been completed for the manufacture of the Serpollet steam car in this country, and that twenty-five of them are now in course of manufacture. The first cars are expected to be delivered the latter end of May.

MR. W. H. KINSBURY, 61, Bath Street, Glasgow, has been appointed sole agent for Scotland for Messrs. De Dion-Bouton. It is stated that Mr. Kingsbury will be the representative of a small syndicate in the course of formation under the title of De Dion-Bouton, Scotland.

THE motor-car driven by Dr. Frost, of Bournemouth, overturned in the Cranborne Road on Saturday afternoon owing to some derangement of the machinery. Dr. Frost and the attendant were thrown out, and Dr. Frost sustained severe bruises and a cut face. The attendant escaped uninjured.

ACCUMULATOR INDUSTRIES, Limited, are, we learn, making a speciality of special charging sets of "Cupron" cells, i.e., two boxes, each containing four cells, giving 600 ampere hours at three to four volts per box, which is ample to charge any electric ignition cells for motorists. It is claimed that the positive plate does not wear out, and that after giving 600 ampere hours will regenerate in the air. The zinc plates last three discharges, so that 1,800 ampere hours can be got without any renewals except electrolyte, only the zinc plates then requiring to be renewed. The company inform us that their factory at Woking is now completed and that they are executing orders for stationary and traction batteries for electric cars and launches. They are prepared to charge electric vehicles at 3d. per unit at their works, which are off the Maybury Road, Woking, very handy for cars running on the Ripley Road.

THE AUTOMOBILE MANUFACTURING Co., Ltd., 48/49, Long Acre, and North St., Manchester Sq., all cars in stock, Garage, Repairs.

THE Motor-Car Journal.

VOL. III.]

LONDON, SATURDAY, MARCH 30, 1901.

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COMMENTS.



SATURDAY afternoon was cold but fine, and a considerable number of sightseers and cars were assembled outside the clubhouse of the Automobile Club at the start of the run to Sevenoaks. Amongst those lined up were Mr. Instone, on the M. M. Co.'s new light 6 h.p. car; Mr. and Mrs. Edge on a Gladiator, with two dogs as companions; Mr. W. Bersey on a 12 h.p.

racing Darracq, having as passenger Mr. Maurice Egerton; Mr. and Mrs. T. B. Browne on their 6 h.p. Panhard; Messrs. Johnson and Bruce on a 6 h.p. Darracq; Messrs. Peall and son on a 6 h.p. Daimler; Mr. R. E. Phillips on his Mors Petit Duc; Mr. Burgess on a new 12 h.p. M.M.C. Panhard; Mr. E. Townsend and party on a 6 h.p. Darracq; Mr. Moore on a Delahaye voiturette; three Locomobile cars, including that of the Hon. C. S. Rolls; Mr. Ritchie and party on a Richard car; Mr. and Mrs. Fuller on a new De Dion voiturette; Mr. Harvey du Cros, jun., and friends on a 9 h.p. Napier; Mr. Cecil Edge and friends on a De Dion voiturette; Mr. Lionel Johnson on a 8 h.p. Benz, etc. The run down to Sevenoaks was very successful, the roads being in excellent condition. About twenty-seven members and their friends took dinner at the Crown Hotel, Sevenoaks. Some remained over Saturday night, but the majority drove home after dinner. Great interest centred around Mr. Maurice Egerton's 12 h.p. Darracq car, as this was the car on which Mr. Harry Farman in the Pau race covered 140 kilometres in 140½ minutes, or an average speed of thirty-seven miles an hour. A peculiar accident befell Mr. Townsend's Darracq while standing in the yard at Sevenoaks. The starting handle had been left under the driving seat in such a position as to "short circuit" the accumulators, with the result that the celluloid covering of the accumulators caught fire. The fire was, however, extinguished without much damage resulting.

The Wolverhampton Automobile Club.

THE first run of the recently-formed Wolverhampton and District Automobile Club was held on Saturday last. The meet took place at 3 p.m., at the Bath Road entrance to the West Park. The following cars turned out: 6 h.p. Siamese phaeton, driven by Mr. J. Lisle; 6 h.p. Endurance, driven by Mr. A. E. Jenks; 6 h.p. voiturette, driven by Mr. G. Prew; 4½ h.p. De Dion, driven by Mr. T. Young; 4½ h.p. Star, driven by Mr. E. Lisle; 4 h.p. Sunbeam, driven by Mr. Cureton; 4 h.p. Mayfair, driven by Mr. S. R. Rhodes; 3½ h.p. Benz, driven by Mr. J. W. E. Stirk; 3½ h.p. Star, driven by Mr. E. Lisle, jun.; a Locomobile, driven by Mr. F. Platt; and a 2½ h.p. De Dion quad, driven by Mr. H. W. Jenks. At twelve minutes past three a start was made, and though some slight misunderstanding as to direction rather split up the party, the run was very successful. The village of Albrighton was reached by the first car at 3.44 p.m. and here a halt was called for the others to come up. Seven cars

soon arrived, and after waiting some time for the others, but without result, a restart was made for the Jerningham Arms, Shifnal, where tea was taken. Five cars of the party left for home at ten minutes to seven, the rest about an hour later, the homeward journey being taken through Gailey.

From Frankfort to Cannes.

MR. BALLIN HINDE, a member of the Automobile Club, reached Cannes at 3.30 p.m. on Wednesday, from Frankfort-on-Main, via Switzerland and the Basses Alpes, a distance of 708 miles, which he covered in 44½ hours in a German-built 12 h.p. motor-car. The weather throughout the journey was terrible, and in many places the car rode axle deep in snow, especially over the mountain summits. Mr. Hinde received the hearty congratulations of the many motorists who are assembled at Cannes.

Motor-'Bus Services in Staffordshire.

AT a meeting of the Potteries Electric Traction Company, Ltd., held in London last week, it was stated that the directors had decided to establish an experimental service of steam omnibuses in connection with their tramways in the Potteries district in order to provide traffic facilities for the outlying villages, and that two of these conveyances will shortly be run between Burslem and Milton, Staffordshire.

Maidenhead Bridge Tolls.

MR. JOSEPH TAYLOR, a member of the Eton Urban District Council is commencing an agitation against the tolls levied on Maidenhead Bridge, which connects Berks and Bucks, and is on the main road to Bath. Mr. Taylor contends that the bridge should be taken over and maintained as a county bridge by the Berks and Bucks County Councils. Mr. Taylor, who, two years ago, was successful in an action against the Windsor Corporation, and freed the bridge leading from Windsor to Eton, will undoubtedly have the sympathy of all motorists in his agitation.

English Motorists Racing on the Continent.

THE events at Nice this week have been followed with more than usual interest owing to the fact that two English motorists, Mr. Mayhew and Mr. Hutton, had entered for one of the events. Then, too, in the Gordon-Bennett race we are to be represented, while we now learn that Mr. Harvey du Cros will shortly be receiving delivery of a racing Panhard of this year's pattern which he is entering for all the big French races. Unfortunately particulars in regard to the horse-power, etc., cannot be published at present, as the type is similar to that which will be driven in the Gordon-Bennett race, but we understand, however, that a great advance has been made on last year's pattern. As the car will be driven by Mr. Chas. Jarrott in the various races on the Continent this season, the matter is of interest, as we do not think that any Englishman has before had the opportunity of competing against French *chauffeurs* on an identical car.

THE GENERAL AUTOMOBILE AGENCY, D. Farman, Man., Garage open day and night, all cars in stock, 100-104, Long Acre, W.C.

Brakes Again.

THE outcome of the deliberations of the Technical Committee of the Automobile Club on the subject of brakes appears in the statement that special attention will be paid to this point in the forthcoming Glasgow trials, and observations on the effective backward brake power will be included. It by no means follows that a brake capable of holding a car stationary on an up-grade will stop it in the event of rearward motion having begun; while other devices such as sprags are of course still more incapable of this. Few cars now are deficient in forward brake power, at least when in good order; but the point that requires emphasis is the necessity for keeping them so. A leather brake-band, even if of dimensions sufficient to avoid firing



TOURING IN ALGERIA—INTERESTED SPECTATORS AT BOGHARI.
Cliche de) (La France Automobile.

under ordinary conditions, soon becomes coated with a metallic surface which greatly diminishes its adhesion; and the occasional removal of this with a coarse file, and the application of castor-oil in small quantity, is about the best method of preserving its efficiency, while wood-lined bands are best treated with resin. Emergency brakes should really find their best position at the circumference of the driving wheels, but the exigencies of pneumatics usually require the substitution of a brake drum. It is somewhat surprising that the possibilities of the rim brake do not seem to have met with much consideration for automobiles.



TOURING IN ALGERIA.—OUT IN THE DESERT.

Motor Touring in Algeria.

FOR the past two months Messrs. Joseph and Pierre de Crawhez and M. E. Dauw, three well-known Belgian automobilists, and a party of friends, have been touring in Algeria. Messrs. Crawhez each drove 12 h.p. Panhards and M. Dauw a 6 h.p. Belgian Daimler. Intelligence has this week

reached us from Algiers of the successful conclusion of the expedition, the first ever attempted, across an African desert. The route followed was due south of Algiers to Gardhaia, via Laghouat, a distance of over 400 miles. The last 280 miles were covered across country, or on camel paths, no roads being in existence. We are able to reproduce a couple of interesting photographs taken during the tour.

The Position of the Coachbuilder.

THE question as to whether the automobile trade should fall into the hands of the carriage builder or the cycle maker is one that has at various times attracted attention, and the organs of the former have with praiseworthy enterprise endeavoured to rouse their readers to a sense of the importance of the business, which they feel should descend by a sort of hereditary right into their hands. As a rule, however, the cycle dealer has been more ready to seize opportunities, though a few notable exceptions will occur to everyone, and it is worth while considering how far the coachbuilder is qualified to compete with him. In one or two cases, the latter, being a man of capital and influence, has gone to the extent of establishing complete works for the construction of motor-vehicles; but as a rule he can only expect to supply the coach work for *chassis* already made, and even here a more or less profound modification of his preconceived ideas is necessary. It is not an uncommon thing in France to see a frame on which all the resources of the engineer have been spent to secure lightness ruined by the excessive weight in the body, and though paint and upholstery remain the same, carpenters and blacksmiths must be superseded by engineers and fitters before a modern light body with aluminium framing and panels can be constructed. There remains yet a third method of producing an automobile, more particularly the lighter types, namely—building it up from a purchased motor and components, a method which is likely to become widely adopted: and this involves work foreign to the carriage builder, though to some extent *ejusdem generis* with cycle construction. In short, he must be prepared for a radical change from the time-honoured methods usual to his business before he can take his share successfully in automobile work.

A Comfortable Inn.

A MEMBER of the English Motor Club tells us that when stranded in Kent recently with a "fired" engine, he found the "Kentish Yeoman," at Seal, three miles from Sevenoaks, on the Igham road, a veritable harbour of refuge. Although quite an inn, and with no pretensions to being a "flash" hotel, the "Kentish Yeoman" is clean, comfortable and cheap, cooking good, and claret in condition. What is more to the point, from an automobile point of view, is that the house owns a good lock-up and concreted shed, and a water supply per hose.

The New Mors Racing Car.

M. GEORGES PRADE, in the *Auto-Vélo* of the 21st inst., describes the new Mors car which is to be driven by M. Levegh in the Gordon-Bennett race. He says that although the car is described as a 28 h.p., it appears to him from the appearance of the bonnet that this description is similar to that often given by ladies concerning their ages. The carriage has four vertical cylinders, with ignition by revolving magneto. In appearance the carriage is like former Mors cars only that it is lower than ever. The vehicle has four speeds. The second speed, at 700 revolutions per minute, is calculated to give 28 miles per hour. The motor with ignition fully advanced makes 1,100 revolutions per minute. At this speed of motor the second speed would give about 44 miles per hour. The fourth speed at 700 revolutions per minute should give 66.2 miles per hour, and at 1,100 revolutions per minute 93 miles per hour. Presumably these are theoretical calculations. M. Prade states that the vehicles should not weigh more than 1 ton 2 cwt.

Another Trans-Continental Run.

ARRANGEMENTS are being made for an automobile trip from San Francisco to New York, to be run as a record for time by Mr. Alexander Winton. The trip has been planned by the Cleveland *Plain Dealer*, whose correspondent accompanies Mr. Winton on the journey. The trip will be commenced on the first day of May. Mr. Winton will carry military documents from the Department in San Francisco to the Department in New York. The probable route will be through California, Nevada, Colorado and Kansas to the east. Let us hope the run will be more successful than the one attempted by Mr. Davies a year or two ago.

Criminal Negligence?

THE ways of horse-owners are—sometimes—peculiar, but it is seldom, we hope, that they are so foolish as one of whom a certain member of the A.C.G.B., residing in a southern county town, recently told us. The noble animal he owned had shown its objection to our informant's car in the usual way, having bolted down a steep hill with a cart, and considerably damaged the same, whereupon the automobilist, anxious to conciliate prejudice, called on the owner and offered the use of his car for the purpose of training the refractory steed, adding that, though, of course, denying liability (he was stationary some distance off when the accident occurred), he would pay part of the damage if his offer was taken advantage of. The owner made some excuse about its taking too much time, and said he meant to sell the horse, and though the other remonstrated with him for not attempting to cure its vice, and called several times to renew his offer, he was met by excuses; though a few days ago the owner had the coolness to send him an account for the damage, which, needless to say, was not paid. Enlightened owners of horses have often complained to us of the difficulty of finding opportunities for such training, and like most other motor owners we have done our best to assist them; but where such opportunities are deliberately neglected it should be held sufficient evidence of negligence in the event of subsequent accidents.

Minera Pulveris.

It seems rather unseasonable to mention dust as one of the banes of the automobilist, considering its proverbial value at this time; but it is a more insidious enemy than mud, and the cause of its special obnoxiousness to motor-vehicles does not seem to have been fully considered, the general idea being that it is thrown up by the wheels, high speed being the principal cause thereof. This is only partially true, as a much larger proportion is stirred up by such parts of a car's mechanism as are carried near the ground, *e.g.*, radiators, silencers, etc., and by ill-directed exhaust pipes, while the leather flaps often attached to front mudguards are great offenders, acting as fans for the purpose. Once raised, it is drawn into the partial vacuum immediately behind the car, and deposited plentifully on the backs of the passengers. It is noticeable how comparatively free from the dust plague an electric vehicle is, and this is probably not due so much to its high build as to the freedom from obstruction to the air passing underneath the car. The advantages of low build cannot be sacrificed in the interests of cleanliness; but a design embodying a level under surface next the road would do much to diminish the pillar of cloud with which summer travelling is usually accompanied.

Progress in the Provinces.

It is not only in London, but in the provinces also, that automobilism is on the increase, and although the spread of the cult of the motor-car in the country is not so rapid, perhaps, as in the metropolis, yet very material progress is being made. In Yorkshire, the Bradford Motor-Car Company, which has been established about eighteen months, has opened up a new depot in what was known as the Bellevue Skating Rink. The freehold of this large building has been purchased, and Mr. House

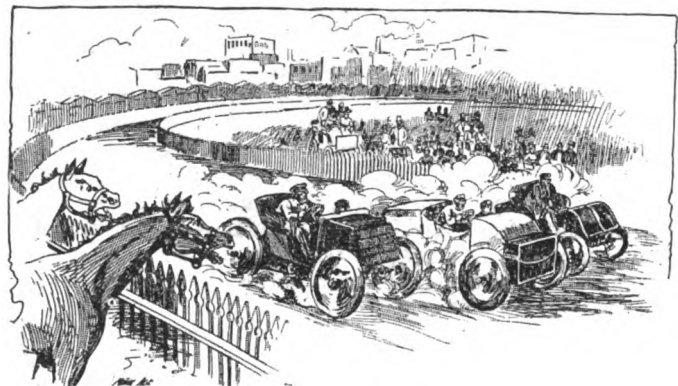
(the manager) and Mr. E. Pye (the treasurer) are stocking this fine depôt with all the latest pattern cars and voituresses. They intend keeping, and have already cars which are let out on hire; they are fitting up repairing shops, and propose buying and selling new and second-hand cars. Such enterprise deserves success, and we wish our friends the reward of their pluck.

Electioneering on Motor-Cars.

MR. A. HOUSE, manager of the above company, recently paid us a visit, and in the course of conversation alluded to the great part played by motor-cars in the recent elections. He claims to have been one of the first to use a motor-car for electioneering purposes in Great Britain, and stated that he used a car in 1895 for the purpose, having obtained the permission of the police authorities. Mr. House is secretary to the Bradford Cycle and Motor Car Trades Association, and is arranging a special dining train to bring to the forthcoming Exhibition the members of this Association. He hopes that at least one hundred will take advantage of his organisation.

Herne Bay's Decision.

At the last meeting of the Herne District Council, held at Herne Bay, the clerk reported, in reference to an application for a licence for a motor-car to ply for hire, that the Council had the power to issue such licences. Councillor Iggulden considered the Council should act on the same principle with motor-cars as they did with hackney carriages, etc., and that was to issue no licences except to residents in the town.



A NEW USE FOR RACE-COURSES—THE HORSES DISGUSTED.

He, therefore, suggested that the application before them be refused unless their conditions were complied with. This resolution was adopted.

The White Steam Car.

A NEW steam-car of American manufacture has just been introduced into this country by Mr. George Sawyer, of 9, Eastlake Road, Camberwell, and will be on view at the forthcoming Exhibition. The new vehicle, which is known as the White, is made by the White Sewing Machine Company, of Cleveland, U.S.A., and comprises several novel features. Steam is supplied by a generator consisting of helical coils of seamless tubing placed one above another, surrounded by a casing of insulating material. Heat from a burner consuming petrol is applied at the underside of the coils, and the water is passed into the coils by means of a pump, the supply being entirely controlled thereby. The water enters the generator at the top, and is always in the upper part of the coils, the steam generated being in the lower coils, emerging from the coil next to the fire. The makers claim that the generator is therefore absolutely non-explosible, impossible to burn out, and all without fusible plugs or other mechanical contrivances. The water supply is controllable by the steam pressure, and super-heated steam being used the exhaust even in damp weather is but slightly visible. A double-acting two-cylinder engine fitted with a simple link reversing gear is used to drive the car. We hope to publish full particulars of the vehicle at a later date.

Demonstrations in America.

THE Automobile Club of America has been taking a leaf out of the book of the A.C.G.B.I., for, in connection with the Bills which have been brought forward to restrict the speed of motor-cars, they invited the U.S. Assembly Committee on Internal Affairs to a practical demonstration, in which five cars propelled by all kinds of motive power took part. These vehicles were run up and down on the State street side of the Capitol in Washington, and to show how susceptible they are to regulation a twelve-year old boy acted as driver of one of them. The demonstration, which was satisfactory to the Committee, was unique, for the reason that an exhibition of this character had never been given before a committee of the Legislature. Mr. Albert R. Shattuck, president of the A.C.A. was the principal speaker at the hearing which preceded the demonstration. He did not object to the enactment of a law which would govern the speed of automobiles, but he was opposed to vesting the rights to frame ordinances in boards of supervisors. He pointed out the fact that supervisors in various localities might enact such ordinances as would be confusing to automobilists. He suggested that the bills be dropped and a general law substituted for them which would permit automobiles to run at the rate of eight miles an hour through villages and of fifteen miles an hour through country districts. He further suggested that the existing law which requires a vehicle propelled by steam to be preceded by a man on horseback be amended so as not to apply to automobiles. Mr. Shattuck's suggestions were favourably considered by the Committee.

Motor-Car Services in Orkney and Shetland.

ORKNEY and Shetland, which are both guiltless of railways, are apparently quite alive to the advantages of the value of the motor-car for the purpose of rapid communication, a company being in course of formation to start a service. So far as Orkney is concerned, it is proposed, at the outset, to run a motor from Kirkwall to Stromness, a distance of about fourteen miles. At present the only regular communication is by coach. It is also intended to utilise motor-cars for the conveyance of agricultural and other produce to Kirkwall and Stromness for shipment. In the case of Shetland, the idea is to run a motor from Lerwick to Scalloway. The first motor-car arrived at Stromness last week, and a trial run was made to Kirkwall, where it created quite a sensation. The promoters state they will be able, even with the necessary stoppages for taking on and putting down passengers, to accomplish the journey to Stromness in a little over an hour, and at half the fares at present charged for the trip. As there is a heavy tourist traffic between Kirkwall and Stromness during the season, the proposed service should prove successful.

The Irish Automobile Tour.

The programme of the tour to be held in Ireland next August by the Automobile Club has now been drawn up. It runs thus:—Aug. 12, Dublin to Waterford; Aug. 13, Waterford to Cork; Aug. 14, Cork to Glengarriff; Aug. 15, Glengarriff to Waterville; Aug. 16, Waterville to Killarney; Aug. 17 and 18, Killarney; Aug. 19, Killarney to Lahinch; Aug. 20, Lahinch to Recess; Aug. 21, Connemara (local runs); Aug. 22, Recess to Mallarannee and Achill; Aug. 23, Mallarannee to Enniskillen. The tour is most comprehensive. Kerry especially is favoured; and over the good, if narrow, roads of this county motorists will enjoy many lovely views. Connemara will appeal more to the heart of the motorist. There the roads are comparatively level, and long stretches of clear highway, without hills or awkward corners, will be welcome after some of the tortuous routes met in other districts. On August 24 the party will break up at Enniskillen, one portion going to Belfast and crossing to the Glasgow Exhibition, while the other section will make for Dublin. Great interest in the event is already being shown in Ireland,

and no doubt exists as to the welcome which the tourists will get all over the country.

Continental Military Authorities and Motor-Cars.

THE Austrian military authorities, after experimenting for two years on the value of automobiles for conveying stores and ammunition, now intend to test the possibilities of transporting troops by this method. Special automobiles capable of travelling over uneven ground safely, and ramming fences or other obstacles to a cross-country journey, are being constructed by an Austrian firm, and will be tried at this year's manoeuvres, which will take place in South Hungary in September. They will be on a large scale, over 100,000 troops being engaged in them. The announcement is also made in the *Velo* that the French artillery authorities at Vincennes have issued a notice to all owners of motor-cars and motor-cycles to send in information of their machines, with a view to handing them over to the State in case of the mobilisation of the army. Covered and closed carriages will be preferred, and the amount to be paid by the State will be fixed by the artillery staff, the price depending on the condition of the vehicle at the time of sale. The artillery will only be able to call up the automobiles in case of mobilisation; if the vehicle is bought its owner may be attached as driver to the staff to which his car is assigned.

The Reading Show.

THE Reading Automobile Club duly opened their exhibition at the Corn Exchange on Tuesday last. Arrangements had been so far perfected that, unlike most exhibitions, everything was in readiness for the opening. The chief work has fallen on the shoulders of Dr. Truman, who has been indefatigable in his exertions for the comfort and attention of both the public and the exhibitors. The exhibition has proved a great success, and the Club is to be heartily congratulated upon having got together such a representative display of cars. Altogether twenty-three vehicles are on view, and, in addition, several motor-cycles. The first exhibit to attract attention is that of Messrs. Dennis Brothers, of Guildford, who show a motor-tricycle and a quad—the latter fitted with clutch, water-cooled head, and small radiator. The major portion of the well fitted and warmly-heated hall was occupied by the Speedwell Motor Company, of Reading. They had on view twelve cars, including specimens of the Renault, Darracq, Decauville, Argyle, Mors, and other types; also a Serpollet steam lorry, ordered by a local firm, to carry one ton at an average speed of twelve miles an hour. Other exhibitors include Messrs. Baker and Co., Darracq, Decauville, and Singer motor-tricycle; the Humber Cycle Depot, Daimler wagonette; Messrs. Vincent and Co., carriages; and Messrs. Pugh and Stroud, two of the latest pattern 6 h.p. mail and Panhard phaetons. Although the attendance has not been a large one, very good business has been done, the exhibitors declaring themselves well satisfied.

Motoring in the Alps.

THE motor-car is proving its ability as a hill climber. One of the most notable journeys demonstrating this was that of Lieutenant Engler, who has crossed the Alps twice with three passengers and 200 lbs. of luggage in his car. Starting from Frankfort-on-the-Main, he crossed the Danube at Ulm, struck the valley of the Isar at Munich, followed up the valley to the Karwendel Mountains, which he crossed at an elevation of about 4,000 feet, travelled south-east among the mountains into the Tyrol, rode on into the heart of the Austrian Alps, crossing the Brenner Pass at an elevation of about 5,000 feet, and finally descended into the plains of Lombardy and on to Venice. When he returned north through the mountains he travelled a little over 1,200 miles in 99 hours. His conveyance was the first to ascend some of the steepest slopes on which roads have been built in the Alps.

THE NICE WEEK.

THE automobile fêtes at Nice began on Sunday last with a battle of flowers on the Promenade des Anglais. All the leading *chauffeurs* were present, and the sight was very pretty and animated. Most of the automobiles were beautifully decorated. The Prix d'Honneur for the best decorated cars were awarded to:—M. Just Fernandez, Prince d'Essling, Baronne de Zuylen, and M. Garibaldi. The event of the week has, however, been the two races on Monday for racing and touring cars respectively. The first was over the Nice-Aix-Senas-Salons-Aix-Nice route, the distance being 460 kilomètres, and brought out some veritable monsters. It was open for (A.) motor-cycles and voiturettes, (B.) cars weighing between 250 and 400 kilos., and (C.) cars weighing over 400 kilos. The starters were as follows:—

Class A.—Gasté, Beconnais, Gleizes, Bardin, Osmont, and Demester, all on motor-tricycles.

In Class B. the starters were: Paul Baras, Marcellin, H. Farman, Edmond, and Boyer.

The competitors in the giant section (Class C.), who started were: Lemaitre, Loraine-Barrow, Werner, Stead, P. Marge,

mètres), comprised five classes:—(a) Motor-cycles and voiturettes; (b) two-seated cars weighing between 250 and 400 kilogrammes; (c) cars weighing between 400 and 600 kilogrammes; (d) four-seated cars weighing between 600 and 1,000 kilogrammes; and (e) cars weighing over 1,000 kilogrammes. This race was interesting to English motorists in that among the list of entries appeared the names of Mr. Mark Mayhew and Mr. E. Hutton, members of the Automobile Club.

The signal in this race was given at 7 a.m., the starters being:—

Class A.—Busquet, Florès, Navello, Bensa, Heurtaud, and Cormier.

Class B.—Ferber, G. Richard I., G. Richard II., Florès, and Decauville.

Class C.—H. Rudeaux, Serpollet (Ratishauser), Cuchelet, Kreutler, Koechlin, Ravenez, and Cornilleau.

Class D.—Barbereau, Serpollet (Bernard), Serpollet, Rigoullot, Pinson (Brun), Letainturier, and Hutton.

Class E.—Sir Knapp, Champrobert, and De Fabrègues.

The first to reach Nice in this race was M. Serpollet, at 1.50 p.m. on a 12 h.p. steam car. The following is the official classification of the cars which had arrived up to 6.30 p.m.:—

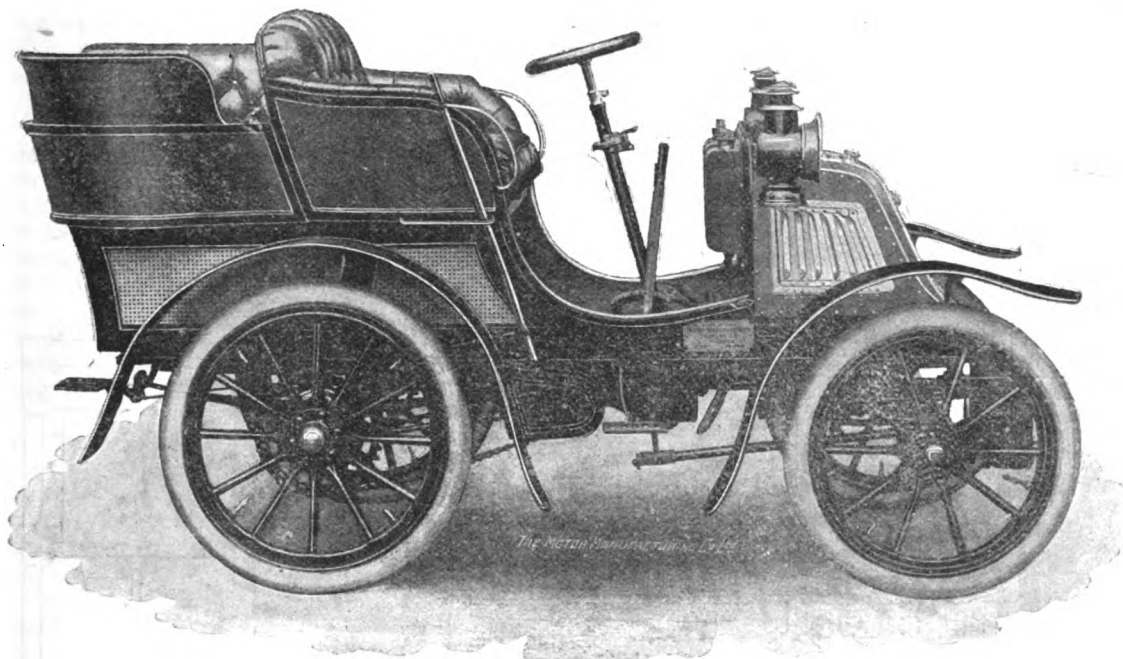


FIG. 1.—THE M.M.C. MINIATURE PANHARD. (See next page.)

Baron de Caters, Pinson, Schneider, Degrais, Audibert, Lavirotte, and Ollion.

The start took place at 6 a.m., and the first to arrive back was Werner on Dr. Pascall's 35 h.p. Mercedes (German Daimler) car at 4.43 p.m. Demester came in next at 5.7 p.m. on his motor-tricycle. The contrôle was closed at 8 p.m., the official classification of the arrivals up to that time being as follows:—
Category A.—(1) Demester, 6 hrs. 54 min. 56 sec.; (2) Gleizes, 7 hrs. 11 min. 41 sec.; (3) Osmont, 7 hrs. 24 min. 14 sec.; (4) Bardin, 7 hrs. 43 min. 25 sec. Not placed: Beconnais (abandoned), Gasté (accident).

Category B.—(1) Henri Farman (14 h.p. Darracq), 8 hrs. 8 min. 35 sec.; (2) Edmond, 8 hrs. 18 min. 41 sec.; (3) Marcellin, 9 hrs. 5 min. 45 sec. Not placed: Baras, Boyer.

Category C.—(1) Docteur Pascal (Werner, *mecanicien*), 6 hrs. 45 min. 48 sec.; (2) Degrais, 7 hrs. 11 min. 58 sec.; (3) De Caters (40 h.p. Mors), 7 hrs. 14 min. 5 sec.; (4) Schneider, 7 hrs. 21 min. 54 sec.; (5) Loraine Barrow, 7 hrs. 24 min. 40 sec.; (6) Paul Chauchard, 7 hrs. 33 min. 59 sec.; (7) Marge, 8 hrs. 25 min. 1 sec.; (8) Stead, 8 hrs. 49 min. 50 sec. Not placed: Lemaitre, Pinson, Audibert, Lavirotte, Ollion.

The race for touring cars, which took place over the Nice-Frejus-Le Muy-Trans-Druguignan-Frejus-Nice route (198 kilo-

Class A.—(1) Cormier, 3 hrs. 24 min. 23 sec.; (2) Bensa, 4 hrs. 20 min. 35 sec.; Not classed: Heurtaud, Werner, Florès, and Navello.

Class B.—(1) Decauville, 3 hrs. 46 min. 19 sec.; (2) Florès, 4 hrs. 18 min. 36 sec.; (3) Capitaine Ferber, 5 hrs. 27 min. 33 sec.

Class C.—(1) Kœchlin, (7 h.p. Peugeot), 3 hrs. 11 min. 11 sec.; (2) Cuchelet, 3 hrs. 16 min. 35 sec.; (3) Ratishauser (Serpollet) 3 hrs. 18 min. 15 sec.; (4) Ravenez, 3 hrs. 19 min. 39 sec.; (5) Rudeaux, 3 hrs. 56 min. 35 sec.; (6) Cornilleau, 5 hrs. 17 min. 12 sec. Not classed: Kreutler.

Class D.—(1) Serpollet, 2 hrs. 42 min. 37 sec.; (2) Pinson, 3 hrs. 7 min. 31 sec.; (3) Hutton, 3 hrs. 43 min. 27 sec.; (4) Rigoullot, 3 hrs. 59 min. 58 sec.; (5) Bernard (Serpollet), 4 hrs. 8 min. 2 sec.; (6) Barbereau, 4 hrs. 11 min. 31 sec. Not placed: Letainturier.

Class E.—(1) Sir Knapp (M. Thorn) (35 h.p. Mercedes), 3 hrs. 40 min. 10 sec.; (2) De Fabrègues, 3 hrs. 41 min. 7 sec.; (3) Champrobert, 6 hrs. 55 min. 43 sec.

Both races were full of exciting incidents. We congratulate Mr. Hutton on the success which has crowned his efforts in a Continental automobile race, the more so in that he forfeited his chance for first place by stopping to pick up and convey to

Frejus M. Letainturier, whose automobile had overturned, and who was badly hurt. As far as we can learn Mr. Mark Mayhew did not start.

On Tuesday and Wednesday the competing vehicles were placed on exhibition, while on Thursday the flying start mile race on the Promenade des Anglais in Nice took place. The results, however, had not reached us before going to press.

THE *Court Journal* remarks that the latest votary to the ranks of Royal motor-car owners is the Duke of Oporto, the only brother of the King of Portugal, who, during his latest visit to Paris, learnt to drive an automobile, and who took a motor-car back with him to Lisbon. Since his return his Royal Highness has spent a great part of his time in driving about the neighbourhood of the Portuguese capital.

THE automobile is gaining an entrance in all phases of work, and in all parts of the world. It has invaded Arizona, and will compete with the railway and supplement the stage coach as a means of reaching the Grand Cañon. If plans as at present under way are carried out, it will be possible for passengers to leave the Santa Fé route train at Flagstaff, Arizona, and ride over to the Grand Cañon, about sixty miles away, on a motor-bus. The novelty of a ride in an automobile more than a mile above the sea level should add

immensely to the enjoyment of those who make the trip.

THE Hozier Engineering Company, Limited, of Hozier Street, Bridgeton, Glasgow, have sent us a copy of their 1901 catalogue, which gives particulars of the various types of Argyll voiturettes ranging from 2½ h.p. up to 5 h.p. The list concludes with three pages devoted to some useful hints to users of these cars.

THE M.M.C. MINIATURE PANHARD CAR.

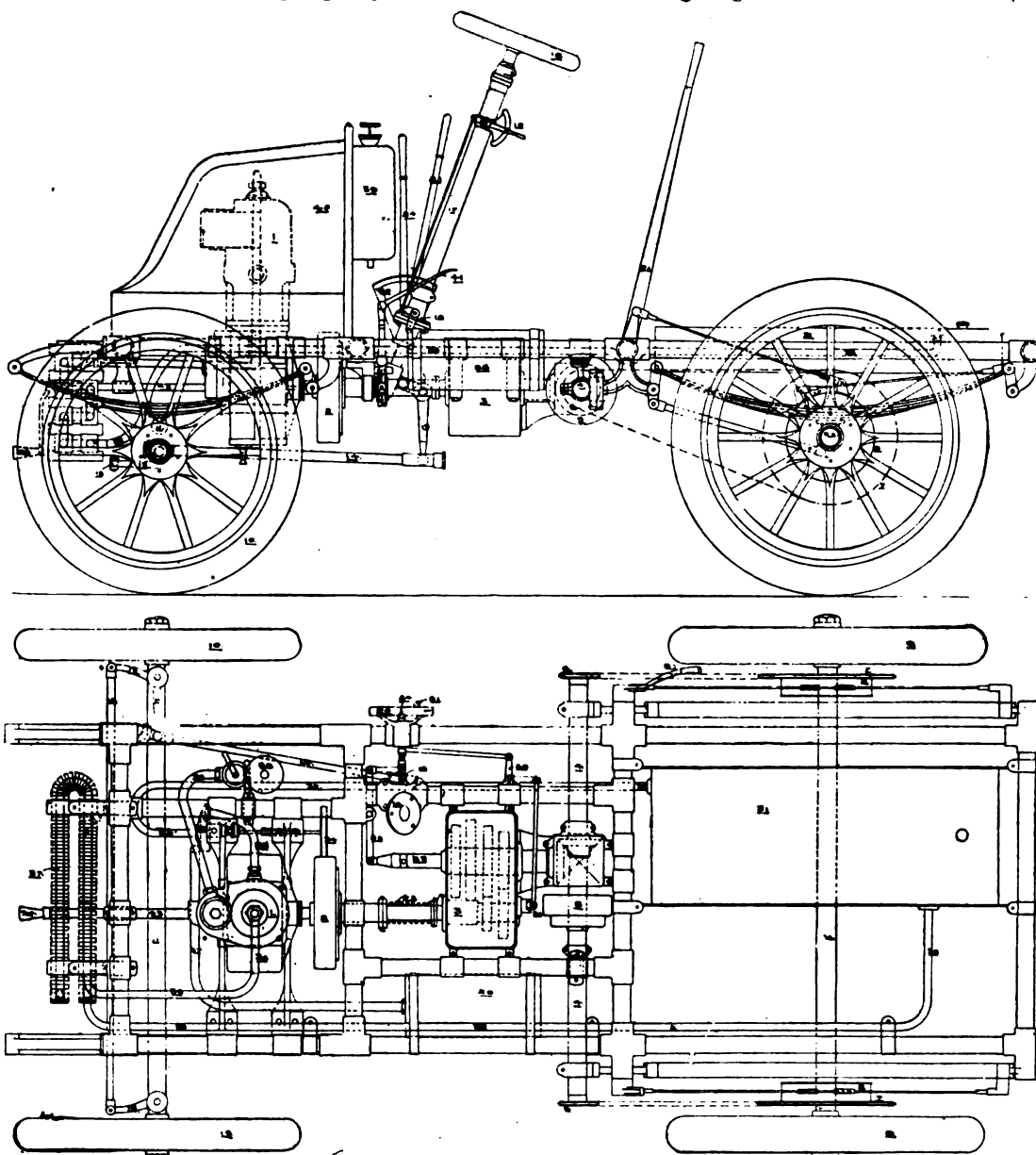
IN our report of the National Show in December we briefly alluded to the new light car which the Motor Manufacturing Company, Ltd., has introduced under the name "Miniature Panhard." We are now able to publish an illustration showing a general view of the car (Fig. 1), and also a

diagrammatic elevation and plans (Figs. 2 and 3), showing the arrangement of the motor and transmission gear.

The engine, which is located under a bonnet in the fore part of the frame, is a vertical single cylinder De Dion manufactured by the company, and embodying certain modifications introduced by Mr. G. Iden. While rated at 5 h.p., we understand that the company are now getting over 5½ h.p. out of these engines, so that the vehicle can be relied upon to ascend hills at a fair rate and to attain a good speed on the level when required.

The water circulation is maintained by a pump, and a radiating coil is also provided. Coming now to the transmission mechanism, this is on the lines of that adopted in the Panhard cars, three speeds forward and a reverse motion being provided. The motor-shaft transmits its power through a friction clutch to the gear box, containing a train of tooth wheels, gearing with corresponding pinions on a parallel shaft below.

All the spur wheels are continually in engagement, but only one pair drives at a time, any desired pair being made to transmit the power by a sliding clutch, which locks or unlocks them from the shaft on which they revolve when free, and by which they are driven when locked. The lower parallel shaft projects through the rear end of the gear box and terminates in a bevel wheel, gearing with



FIGS. 2 AND 3.—ELEVATION AND PLAN OF M.M.C. MINIATURE PANHARD.

- | | | |
|--------------------------------------|--|---|
| 1. 5 h.p. motor. | 15. Ball end lever. | 30. Pipe from Carburettor to induction valve. |
| 2. Fly wheel and clutch. | 16. Steering bracket. | 31. Water tank. |
| 3. Gearing. | 17. Steering column. | 32. Pipe from water tank to pump. |
| 4. Differential shaft. | 18. Steering wheel. | 33. Circulating pump. |
| 5. Differential gear and band brake. | 19. Quadrant and levers to control carburettor and sparking. | 34. Pump wheel. |
| 6. 10 Tooth sprockets. | 20. Quadrant Bracket for change-speed and reversing. | 35. Delivery pipe to motor. |
| 7. 40 Tooth sprockets. | 21. Change-speed lever. | 36. Return pipe to cooler. |
| 8. Sprocket band brakes. | 22. Change-speed double lever. | 37. Cooler. |
| 8a. Hand lever for band brakes. | 23. Change-speed shaft. | 38. Return pipe, cooler to water-tank. |
| 9. Rear wheels. | 24. Reversing lever. | 39. Petrol and lubricating oil tank. |
| 9a. Rear axles. | 25. Reversing lever ball crank. | 40. Motor cover. |
| 10. Front wheels. | 26. Short reversing lever. | 41. Clutch and brake pedals. |
| 11. Front axles. | 27. Exhaust pipe. | 42. Clutch spring. |
| 12. Connecting rod (steering). | 28. Silencer. | 43. Starting shaft. |
| 13. Axle swivel arms. | 29. Carburettor. | 44. Starting handle. |

a corresponding wheel on a cross differential shaft, from which the power is transmitted to the rear road wheels by the usual duplicate set of sprocket wheels and chains. The forward and reverse motions are controlled by a single hand lever arranged at the side of the sloping steering pillar. The steering is controlled by an irreversible hand wheel, motion being given through a worm on to a toothed segment. The various control levers are all worked from the standard in a handy position below the wheel. The brakes consist of a band on the differential on the countershaft, actuated by a foot pedal, and hand brakes, on drums connected with each of the chain rings on the rear axle, applied by a hand lever at the side of the car. The road wheels are of the artillery type, those at the rear being 28 in. in diameter, and the front 26 in.; they are fitted with Clipper pneumatic tires. The car complete weighs about 7 cwt. The petrol tank has a capacity sufficient for a journey of 100 miles.

The illustration (Fig. 1) represents the car recently supplied to Lord Plunkett, at the Viceregal Lodge, Dublin; as will be seen, it is extremely well finished and luxuriously upholstered.

THE GORDON-BENNETT CUP RACE:

AT a meeting of the Races Committee of the Automobile Club last week, the following decisions with reference to the English competitors were arrived at and agreed to by the competitors:—

Selection.—The Races Committee, for the purpose of determining which of the competitors shall be selected to represent the United Kingdom in the race, will arrange a trial of each of the vehicles over about 100 miles of road in France. An observer appointed by the Committee will be on each of the cars during its trial. The Races Committee, after receiving the records and reports of the observer, will select the three cars. The trials will take place within a fortnight of the date of the race. The competing cars must be in Paris at a place to be hereafter named by the Committee, and must be prepared to undergo the trial on and from Wednesday, May 15th. In the event of only three vehicles being forthcoming at the eliminating trials, the Races Committee need not necessarily agree to all of these vehicles competing in the Gordon-Bennett race, but may select one or more of the three as may seem best to the Committee.

Reserve Competitor.—The Races Committee reserve to themselves the right to nominate in addition to the three selected competitors a reserve competitor, and to substitute the reserve competitor for one of the selected competitors even at the last moment, without giving a reason, and competitors are required to abide by the decision of the Committee in this respect.

Construction of Competing Cars.—In view of the rule which stipulates that the competing cars shall be entirely, and in respect of all their parts, constructed in the country which they represent, the Races Committee will not allow a vehicle to compete in the eliminating trials unless the owner is able to produce a written certificate by the makers that the vehicle is, as regards all its parts, constructed in the United Kingdom; further, the Races Committee will not accept a vehicle for competition in the eliminating trials unless an Inspector, to be appointed by the Club, shall be allowed to inspect every portion of the vehicle during and after its construction.

Spare Tires and Petroleum Spirit.—Competitors will make such arrangements as they think proper on the road for the supply of petroleum spirit and spare tires.

Storage of Vehicles in or near Paris.—The Races Committee will endeavour to provide a building in or near Paris in which the competing vehicles may be stored from the 15th May until the start of the race.

Physical Fitness of Competitors.—In view of the great physical strain which will be involved by taking part in this race, and of the fact that the competitors will be representing the United Kingdom, the Races Committee require that competitors shall agree to abide by the rules and directions of the Races Committee concerning their personal training, of their mechanicians, during the week immediately preceding the race. Competitors and mechanicians will be required to agree to live under the supervision of a member of the Committee during that week, and to abide by the instructions of the Committee as regards the hour for retiring to rest, regularity in taking meals, etc.

CORRESPONDENCE.

A SUGGESTED NEW CLUB.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I heartily agree with the suggestion of "Novice" that a motor-car club should be formed, members to have the use of cars on certain days, and hope the matter will not be allowed to drop. The subscription, however, might have to be high until the cars were purchased, but this would be small compared with the cost of a complete car. Trusting the proposal may meet with practical support,—Yours truly,
"MOBILE."

GEARS AND IGNITION FOR MOTOR-QUADS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I see in your issue of the 23rd last that "G." states that he can fully charge his Woven-glass cells in four minutes.* Surely minutes must be a mistake, as it requires about four hours at the least to charge a battery of that capacity, at all events, without igniting the plates. As regards charging the cells off ordinary direct current mains the chief point to look to is to see that the poles are connected upright, and that a suitable resistance is put in circuit. An ordinary glow lamp will do, though the light will be a trifle less. The cost of charging two cells at 6d. per unit would be about 2s., but if the lamp is used for lighting purposes, of course the actual cost is next to nothing. I have never tried running a dynamo off the motor for charging the cells, but I see no reason at all for its not being a success. One or two makes of cars use a dynamo running off the motor to give the charge. A dynamo running off the motor of course absorbs a small amount of power, and care would have to be taken not to switch the dynamo on to the accumulators when the engine is not running at a sufficiently high speed, otherwise the cells would discharge themselves through the dynamo.—Yours truly,

C. P. COBB.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—If "Chum" will try a 22-tooth pinion on his Allard, it will do all he wants. I had the same trouble with mine till I changed the 18-tooth pinion to 20, and afterwards to 22. As regards accumulators, I find Peto and Radford's the best.

Yours truly,

G. T. TAYLOR.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I have been much interested in your correspondence columns the last week or two re gears and other matters for motor-cycles. Your correspondent "G." seems to have got over a difficulty we most of us experience, viz., hill mounting, by means of a two-speed gear. I have a 66 mm. Beeston tricycle, which goes fairly well upon ordinary slopes. I have gone up 1 in 13 assisting with the pedals; but we have hills here in Yorkshire 1 in 8 and even more. I see "G.'s" quad baulked at 1 in 17 before he got his two-speed gear.

The price demanded for two-speed gears seems to me to be excessive—in England that is to say. Would it be too much to ask "G." to give a detailed description of his Dupont gear and also some idea of the cost, which he describes as moderate? I also gather that one can have a free motor with the Dupont, and further that it is simple in action.—Yours truly,

CHAIN.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Your correspondent "G." has given us some very interesting particulars and experiences. I should like to suggest that his motor-quad is underpowered, however, and that if he exchanged it for a 3 h.p. with water-cooled head he would scarcely feel the want of his two-speed gear. From what I have heard of the Dupont gear, I believe it is fairly good, but I think I am right in saying that a vast amount of power is consumed in

* "G." has written to point out that the words "minutes" in his last letter should have been "units."—ED. [M.C.J.]

transmission when running on the lower speed.—My own experience of motor-cycling leads me to believe that its best to have a well-powered—not under $2\frac{3}{4}$ h.p. for a trike—and about $3\frac{1}{2}$ h.p. water-cooled for a quad—without a two-speed gear and its attendant complications, but with a really large compression tap, so that when this tap is fully open the “shoving” process is devoid of most of its horrors.—Yours faithfully,

CLAUDE A. P. TRUMAN,
Hon. Sec. R.A.C.

A PERFECT MOTOR-TRICYCLE.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—A “perfect” motor-tricycle with the motor in a position which necessitates the dismantling of the front wheel to enable one to make thorough inspection or repairs hardly justifies its name. Moreover, who would care to use a tricycle weighing as a minimum 100lb., unassisted by a motor, for “desirable exercise”? A motor placed as in the Ariel, but controlled as in the Singer bicycle, *i.e.*, by one lever, magneto

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Is not your correspondent Mr. Athol Maudslay going rather out of his way to obtain a “perfect” tricycle? The idea of placing the motor in front, *a la* Singer, is simply one, I suppose, to reduce vibration and render the machine convertible into an ordinary (?) tricycle. It would look an ordinary tricycle, wouldn't it, with Referee triple head and cross-frame, and one or two other additions? I venture to think that the pleasures of riding that tricycle would be strictly confined to it in conjunction with the motor, and not as an “ordinary” tricycle. As this is not a cycling journal we will not enter into the merits of the Referee cross frame, but I am interested to know, *why* the Referee? No, I do not think that our manufacturers will take up this idea, as the ordinary motor-tricycle has practically all the points mentioned by your correspondent, except the convertibility. I am inclined to think the back is far from the best position for a motor on a tricycle, for reasons which are more or less obvious, and I also feel sure that the Singer motor-tricycle is not intended to compete, say, with a $2\frac{3}{4}$ h.p. De Dion with clutch. I should



THE “LOCOMOBILE” IN CALIFORNIA AND YOSEMITE.



ignition, water-cooled head, well-designed friction clutch, which should neither slip nor jam as many do at present, with, as Mr. Maudslay suggests, non-vibratory saddle and handle-bars, non-puncturable tires and powerful hand-brakes on rear hub, would, it seems to me, come nearer perfection, being so simple that a beginner could easily manage it as soon as he understood the manipulation of the friction clutch.—Yours truly,

FIELDFARE.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—With regard to the letter on this subject in your last issue, I may mention that I have designed a front driving and steering motor-tricycle, for which a patent is pending; also a very small carriage for one person. Both vehicles are designed for the wheels at the rear to close up, so as to pass through any house-door frame. The small carriage has no pedals, the motor being fixed on the front of the frame of the carriage. The engine can be started from the seat. The variable-speed gear employed is silent, and will give speeds ranging from a crawl up to twenty miles per hour with one lever.—Yours truly,

GEO. FREESTONE.

be pleased to hear the views of others on this interesting subject.
—Yours truly,

R. A. COBB.

FUEL FOR MOTORS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Would any reader who has been “held up” through the petrol petering out (save the mark!) say if ordinary paraffin oil could by any means be used as a makeshift? The result of his experiences would probably be interesting to others beside—

Yours truly,

BEGINNER.

THE ASTER MOTOR.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—In a letter, entitled “Motor-Cycle Matters,” which appeared in your issue of the 16th inst., your correspondent “G.” speaks in high terms of the Aster engine and its carburettor. I have also had a Phébus-Aster for about a year and a-half, and have been perfectly delighted with it. Mine is a 4 h.p. tricycle, but it was fitted with a Longuemare carburettor. Previous to possessing this tricycle I had two De Dion trikes, so I am able to compare them with the Aster, a comparison that by

no means goes in favour of the latter. I quite agree with "G." that were the Aster engines better known in England they would be very much more used than at present. People that have once had an Aster do not usually return to a De Dion. The Aster engine runs very smoothly, with marked regularity, and is more silent than the De Dion. It is very fast, very powerful, made with the greatest care and precision. Passing over many points of excellence and superiority in the Aster motor, it is impossible to refrain from speaking of the Aster ignition. It is inexplicable how De Dion can still go on turning out his engines with the same old ignition, utterly regardless and indifferent to the many complaints continually made about it. To thoroughly understand the De Dion ignition you have got to be a good mechanic, experienced, and possessed of a good ear for sound. The trembler is always disarranging itself, and needs constant adjustment. The oil from the crank chamber pours in there, no matter how little you put in the engine, keeping the trembler box flooded and covered with oil inside and out. The trembler box in an engine should be clean and dry. The inside of this in the De Dions is always an oily, filthy mess. Owing to this one suffers from short circuits constantly, the whole affair having to be cleaned and recleaned very often. Whenever one has to readjust the trembler it is necessary to unscrew the locking screw holding the platinum-tipped screw in place. In the De Dion ignition this screw is put in the most inaccessible position. Another source of trouble with the ignition is the ebonite stand wearing loose and therefore greatly upsetting the sparking. Sometimes it cracks and splits right across. This has happened to me more than once. I had my Aster tricycle four months, during which I never had occasion to touch the trembler. There is a trembler blade for the make and break contact on the Aster engines, but it is not intended to vibrate. This was well adjusted when I bought the machine and never once disarranged itself. At the end of that time, my engine began to make feeble explosions and to miss them sometimes. I looked over the ignition and found that both the trembler blade and the platinum-tipped screw were completely worn out. But they had lasted well, never once requiring to be touched. I recollect being *en panne* with my ignition on a track at Strabane once last year. Here the trembler was looked at but the fault was not there, it all consisted in an earth-wire having broken, which was not at first perceived.

Now to compare the Aster with the De Dion ignition. The former is contrary to the latter. One has not got to be a good mechanic to understand the Aster. A novice can grasp it almost at the first glance. There is no ebonite cam to wear loose or split. There is no special vibration of the trembler blade required. That in the Aster is not intended to do so, and that saves one an immense deal of trouble and experimenting. You might fill your Aster engine with oil, but your trembler box inside would always be as dry as tinder. The adjusting of the Aster make-and-break contact is simplicity itself. Screw up the trembler blade so that the end presses firmly upon the cam, advance the platinum tipped screw as near to it as it will go, so that you can just insert a visiting card between the two, and there you are, quite complete.—Yours truly,

LEOPOLD CANNING, A.C.G.B., A.C.N., etc.

A SINGLE-SEATED CAR.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—With regard to the feasibility of the production of a covered tricycle, as suggested by your correspondent Athol Maudslay, in my opinion it is not only possible, but its actual appearance at no distant date is very probable, if my eight years' practical mechanical experience qualifies me to express an opinion. The body need only be very light and easily detached. The hood could be closed right up, leaving the rider entirely closed in from hail or sleet, with transparent celluloid panels inserted in front, side, and rear of hood or cover, to allow him or her to see in front, beside, or behind. The steering control, brake, and even the lamps could be worked from inside. He may have to encounter a deal of obstacles in getting one made as a start, as every new departure has to submit to a great amount of criticism and often ridicule until it has really demonstrated its convincing practicability. No one can say that

improvements are impossible; many have yet to come, and your correspondence columns should prove very interesting during the coming season.

Motors have got to occupy a great position, and the public will catch on like the wind when they think them more simple and lighter; but unfortunately there are still many who think a breakdown gang should be kept in sight if you keep a motor. This will wear away like all other notions.

I shall be trying a few useful experiments and shall be pleased to hear through your columns of others similarly interested. Exchange of opinion and results of experience and experiments should prove interesting and profitable to all concerned.

Re the proposition of "G." to have a dynamo fixed to his quad, the motor to work the dynamo, and that in turn to charge his accumulator, a friend is trying same, but with the difference that he works his dynamo chiefly by means of a rolling brake; thus the lost power in ordinary brakes is utilised in this case (in descending hills, etc.) to work the dynamo and thus recharge the accumulator; with what results more will be known presently.—Yours faithfully,

W. W. STEVENS.

6-H.P. PANHARD CARS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Can any of your readers oblige me with information of 6 h.p. Panhard cars—as to their wearing qualities? How many miles should the gear run—any part of it—without renewing? How long do the piston rings, bushes in the engine, and chains and sprockets last?—Yours truly,

PHOENIX.

M. CHARRON, the well-known French *chauffeur*, has, we hear, this week paid a flying visit to London.

LES ÉTABLISSEMENTS PIEPER OF LIEGE, have sent us a copy of their catalogue illustrating and describing the new Pieper light car fitted with a 6 or 8 h.p. motor and the popular *tonneau* body.

At the recent race meeting held at Nice, the winning cars in Series C. Course de Vitesse and Series E. Course de Touristes (both 35 h.p. vehicles) were, we understand, both fitted with tires supplied by the Continental Caoutchouc and Guttapercha Company.

THE United Motor Industries, 40, Holborn Viaduct, E.C., have appointed Mr. W. H. Kingsbury, of 61, Bath Street, Glasgow, and De Dion-Bouton, Scotland, their agent for Scotland. Motorists, north of the Border, will no doubt find this arrangement a great convenience to them, as the United Motor Industries, Ltd., handle practically all the requirements of a motorist.

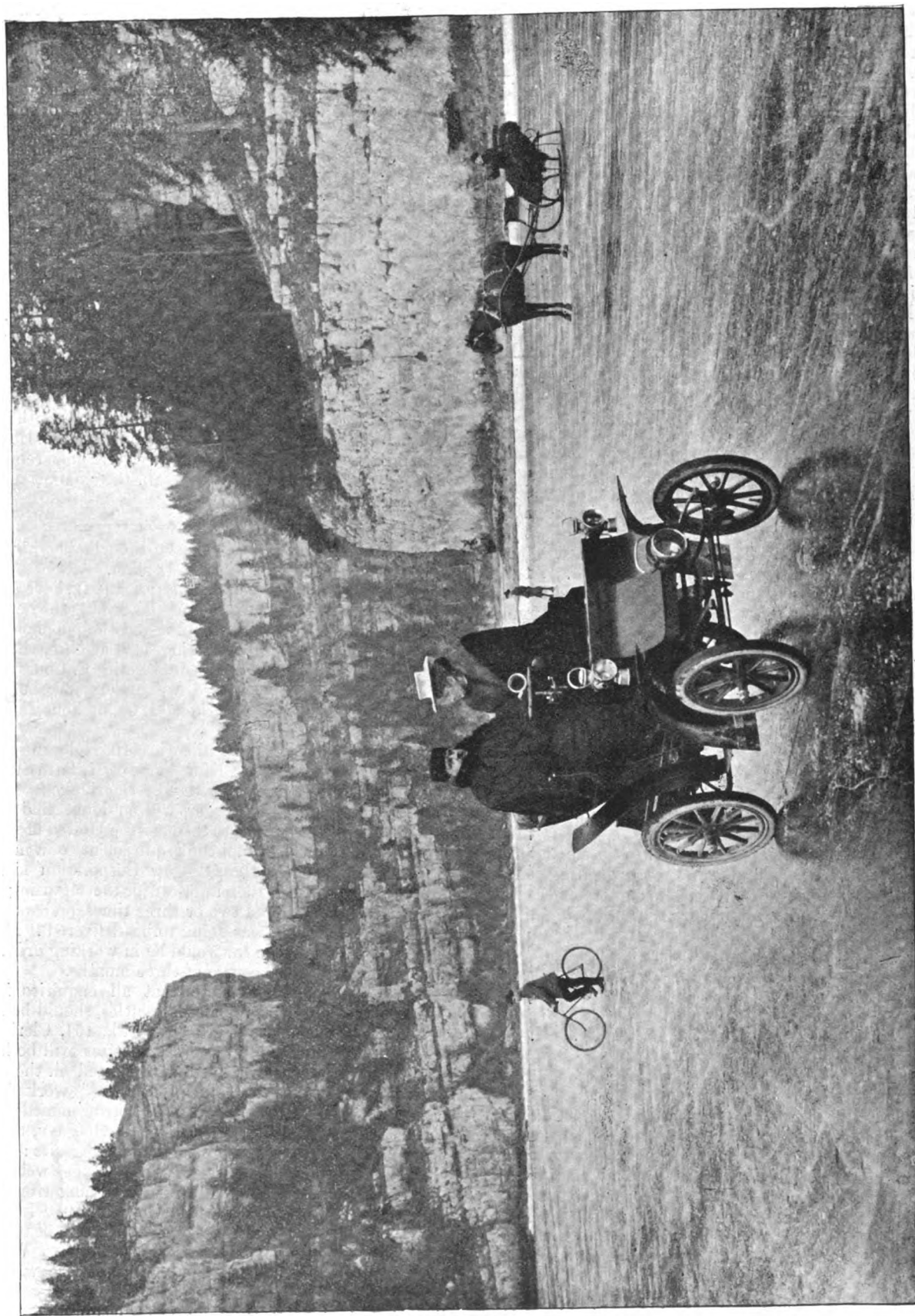
At a meeting of the Glasgow Corporation last week, Mr. Stewart asked when the motor-car for the cleansing department, which had been ordered two or three times, and was to have been ready six weeks ago, was going to be delivered? Mr. Battersby, in reply, stated that the car would be in working order in a certain time, probably in the course of three months.

WE are asked to state that all enquiries in regard to Clipper-Michelin tires for motor-vehicles should be forwarded to the Clipper Pneumatic Tyre Co., Ltd., 164, Clerkenwell Road, London. We understand that all the sizes will be kept in stock and those not already received are expected in the course of the next few days from the Michelin Company's works in France.

THE Paris-Bordeaux Race is to be run immediately after the start of the Gordon-Bennett Race on Wednesday, the 29th May. It is divided into the following four categories:—1. Carriages weighing over 650 kilogs.; 2. Light carriages weighing between 400 and 650 kilogs.; 3. Voiturettes weighing from 250 to 400 kilogs.; 4. Motor-cycles weighing less than 250 kilogs.

TO-DAY'S (Saturday) run of the members of the Automobile Club has been altered from High Wycombe to Windsor. The start will be made at 1.45 p.m. and the route will be:—Hyde Park, Kensington, Hammersmith, Brentford and Colnbrook. The Hon. John Scott Montagu, M.P., has invited the members of the Club to attend a meeting of the Eton Beagles at Ditton House, Langley, near Colnbrook, and to take tea there afterwards. On leaving Ditton House the run will be continued to Windsor, where dinner will be served at the "Castle Hotel."

MOTORING ON THE ICE.



M. JACOT, OF THE SWISS AUTOMOBILE CLUB, WITH HIS DELAHAYE CAR, MOTORING ON THE RIVER DOUBS (EASTERN FRANCE).
[La France Automobile.

Cliché de]

CONTINENTAL NOTES.

BY "AUTOMAN."



ALTHOUGH the new mode of transport has taken firm root in Belgium, the oldest and crudest form still holds its sway, and it is curious to see side by side the quaint little milk carts with their canine tractors and the latest petrol vans. The accompanying illustrations of a 3 dog-power cart and a 2½ h.p. van make an interesting and amusing comparison constantly to be witnessed in the streets of Brussels. The little motor-



THE OLD STYLE.

van is produced by the Usines Delin, Louvain, which is managed by the enterprising M. Chargois, who, by the way, exhibited at the Brussels Exhibition a motor-cycle which had covered 10,000 kilomètres.

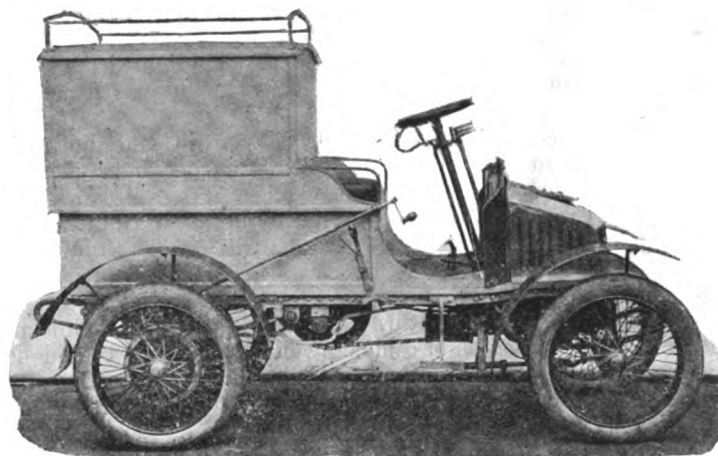
THE Belgian Automobile Club, which held its annual general meeting on Wednesday, the 30th inst., announces that the charity fête which it is organising will take place on April 14th at 2 p.m. The programme will consist of five events, namely:—(1) A trial of skill; (2) a prize for elegance; (3) three combined movements; (4) a gymkhana; and (5) a battle of flowers. All kinds of vehicles will take part—omnibuses, lorries, touring and racing cars, delivery vans, voiturettes, and motor-cycles. Last year it was a great success, and this year it promises to be a brilliant affair.

THE French military authorities have not been long in realising the important rôle that the motor-car will undoubtedly play in future warfare, most particularly if the field of operations should be in an European country, where good roads abound. There is a kind of conscription for horses in France, that is to say, every horse in France is registered, labelled and described by the War Office and also valued, and in case of war the military organisers can lay their hands on all the horses—duly compensating the owners on a fixed scale. It is evident from a circular which has just been sent out by the chief officers of the artillery at Vincennes, near Paris, to all owners of motor-cars, that there is to be a conscription also for motor-cars. The circular asks for immediate returns of particulars with reference to purchase in case of mobilisation, of not only motor-cars but also motor-cycles. A preference is given to covered vehicles.

THE Automobile Club de France announces that it intends to hold two international competitive trials. The first, which is to be held at the Club's laboratory, 128, Rue du Bois, Levallois-Perret, beginning on May 1st, is to consist in a trial of carburettors. The different carburettors will be tested with a special petrol of 700 degrees of density, and with three classes of motors, viz., motors with a short stroke and high speed, motors with a medium stroke and medium speed, and motors with a long stroke and a low speed. Consumption of petrol per brake horse-power, and condition after ten consecutive hours' work and a night standing without being cleaned, will be the points specially looked into. The second competition, which is to be held at the same place, beginning on June 1st, is to be for accumulators, and the tests are to cover a period of one year, during which time each battery is to be subjected to various trials, taking into consideration cost, weight, and repairs.

THERE has been a signal success for motor-fire-engines in Paris, which should call the attention of other fire brigades to the advantages of motor-traction over horse traction. In this case it was an electric fire pump, carrying with it one hundred gallons of water ready for use, manufactured by Bouquet, Garcin and Schivre. Thanks to the rapidity with which this machine arrived on the scene and got to work, it was able to prevent the explosion of a cellar full of chemical products. The Colonel commanding the Paris fire brigade says in his report that with horses the engine would have arrived too late.

THE Swiss Automobile Club, which was founded towards the end of the year 1898 by a little group of motorists, has now about 400 members. It originated in a race organised from Geneva to Meillerie and back, about 110 kilomètres, but it was soon obliged to give up racing on account of the stringent laws of the country. The shortest course of fifty miles or so traverses thirty or forty villages, towns, or hamlets, each of which had to be gone through at a walking pace. The Swiss Automobile Club has set to work to get the motor-cars of tourists admitted duty free so long as the tourists are members of the Belgian or French Automobile Clubs, and expects very shortly to achieve its object; it has



THE NEW STYLE.—THE DELIN LIGHT DELIVERY VAN.

also been endeavouring to get the various regulations of the different cantons all settled according to central governmental instructions. Here they have met with a very unexpected difficulty. The Canton of Grisons has actually absolutely forbidden the circulation of motor-cars within its confines, and the S.A.C. is now considering what steps it will be necessary to take in face of this outrageous but very effective way of settling the question.

MICHELIN began in last Monday's *Auto-Vélo* a series of articles on pneumatic tires. Commencing by giving the elementary details of construction, he tells how the pneumatic tires consists of (1) the

air chamber; (2) the cover; (3) the rim. The air chamber, he says, is the soul of the pneumatic tire. It consists of an endless tube of rubber destined to receive compressed air, the compression of which varies according to the weight of the carriage and sometimes attains as much as five atmospheres—75 lbs. per square inch. The air chamber alone not being able to resist this pressure, an envelope of canvas is required to support the tube and prevent it from bursting. In order that the envelope may have the requisite strength three, four, or even five thicknesses of canvas are required. The outer canvas is covered with a layer of rubber thick enough to protect it from the road friction; this layer of rubber is made crescent shape. In large tires the outer rubber is made separate from the canvas in order that it may be easier to repair the one or the other. If the envelope should be pierced it can be repaired by means of a piece of rubber-treated canvas fixed inside. The envelope has at its edges two thicker pieces which fit under the hooked sides of the rim, and are also held in their places by safety bolts. In a later article Michelin says he will give the principal causes of wear and how they can be remedied. I will give your readers a digest of the next article when it appears.

FRANCE has been showering distinctions on motorists lately. M. Bouton, of the well-known firm of De Dion and Bouton, has been made a chevalier of the Legion of Honour, and so have M. H. Pieper, of Liège, and M. Brunetta d'Usseaux, a motorist, of Nice, who gave the cup which bears his name. There are four new officers of the Académie chosen from the automobile world, viz., M. de Morlhon de la Valette, secretary to the A.C.F., M. Petit, M. Richard, treasurer of the Chambre Syndicate de l'Automobile, and M. Vaugelle, secretary of the Chambre Syndicale du Cycle et de l'Automobile. Last Monday week was a holiday at the works of De Dion and Bouton, and the 1,500 workmen met together to present a diamond cross to M. Bouton in commemoration of the honour bestowed on him by the Council of the Legion of Honour.

WE learn that the Rt. Hon. A. J. Balfour has just ordered one of the new 7 h.p. Panhard light cars, the delivery of which will be made about May next.

A PLAYING card firm in America has copyrighted the words "motor" and "motorette," presumably for use as names for cards.

By a decree just issued, the Mayor of Cannes limits the speed of automobiles to twenty kilomètres per hour in open country and ten kilomètres in the streets.

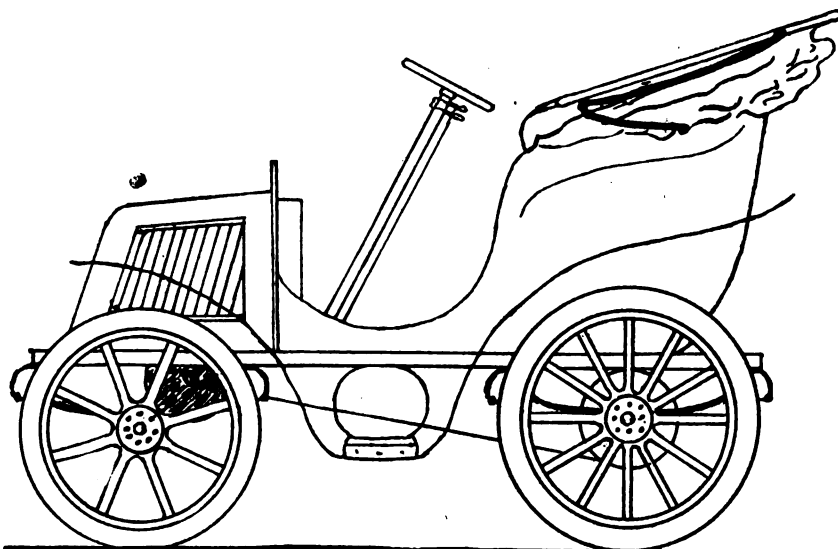
THE Crowds Automobile Company has been lately formed in Illinois to build electrical vehicles. Mr. Crowds has been engaged for a long time in automobile work, having patented a very successful accumulator, of which he sold the English rights some two years ago. On his return to America in 1899, Mr. Crowds began the construction of complete vehicles, and has turned out a light vehicle, which is now to be built on a commercial scale.

IN accordance with a request made by the Committee of the Automobile Club, the Marquis of Lansdowne has instructed His Majesty's Ambassador at Paris to approach the French Government concerning an arrangement by which members of the A.C.G.B.I. may, on lodging the Customs dues at the London Club House, obtain there a form which will enable them to introduce their automobiles into France, without going through the usual Customs formalities.

THE U.S. Post Office Department intends to employ motor-cars in transferring mails from the Federal Building to the Pan-American Exhibition grounds at Buffalo, N.Y. Proposals have been asked for on the following terms: The distance is about 4.25 miles. Not more than seven nor less than five round trips are to be made each day. The cars are to be run according to a schedule between 4 o'clock in the morning and 11 o'clock at night. The running time for each trip, each way, is not to exceed thirty-five minutes, exclusive of loading and unloading. The vehicles must be capable of carrying 800 lbs. of mail matter.

THE "TWENTIETH-CENTURY" VOITURETTE.

THE Automobile Transport Company, of Comeragh Road, London, W., have put on the market a new voiturette, of which an outline illustration is given herewith. The petrol engine is placed under a bonnet in the forepart of the carriage; it is water-jacketed, the water being circulated by means of a pump. A radiator is fitted to cool the water. The standard horse-power of the voiturette is 3½, but the company are building cars with 5 and 7 h.p. engines. Ignition is effected by an electrical battery and induction coil. The transmission gear is of a simple description, and there are no complex parts to get broken or out of order. From the engine the power is transmitted by a belt to a countershaft having pinions upon it, which are always in mesh with spur-wheels fixed to the rear driving-axle. To this countershaft are also fitted hardwood pulleys for changes of speed and reversing gear. The whole of the engine is oiled by one sight feed lubricator; this being fixed on the dash-board behind the engine bonnet, the driver is enabled to see the quantity of oil contained. Petrol can be carried for a journey of about 150 miles. Band brakes are fitted to the hubs of the rear wheels, also to the driving gear, and are actuated by a foot-lever placed conveniently near



the driver. Steering is controlled by an inclined hand-wheel, on the right side of the carriage. The frame of the under-carriage is constructed of channel steel. The road-wheels are of the cycle or wooden artillery type as desired, and are fitted with pneumatic tires. The standard types of bodies are two-seated Victorias; a third seat can be fixed in front. The main under-frames, however, are so designed that almost any description of body can be built thereto.

THE Veloce Club of Namur, Belgium, is organising a motor-car race from Namur to Bastogne and back (112 miles) to be run off on June 2nd.

MR. A. W. BELL, cycle manufacturer, High Street and London Road, Marlborough, informs us that he has arranged to carry a stock of Carless-Capel petrol at each of his two depôts.

THE Anglo American Oil Co., Ltd., are now delivering Pratt's motor spirit in sealed 2-gallon tins, so that motorists can thus be assured that they are receiving motor spirit as filled and shipped from the Company's works.

IN his annual report, Mr. Ellicott, the City Electrician of Chicago, who has charge of the granting of licences to drivers of motor-cars, pays the new conveyance this compliment. "The results thus far obtained indicate that the automobile is a safe means of transportation if operated by a reasonably intelligent and careful person."

JOTTINGS BY A WORLDLING.

OUR sport has never had such a fillip as that given to it by the success of the German car at Nice and by the "triumph of steam," as Léon Serpollet calls his victory in the tourist race. Baron H. de Rothschild's clever *mécanicien*, Werner, has proved, what a few of us have always held, that the Daimler would one day "come out on top," and that the rotary German magneto ignition is worthy of much more attention than has yet been given to it. The Mercedes car behaved as well as, if not actually better than, any other racer yet built, and it will be a dangerous rival to the Panhard and Mors systems. Should our high-power cars prove as successful as their manufacturers believe they will be, the Gordon-Bennett Cup will be one of the most exciting sporting events that the world has ever seen.

WHEN I read of the splendid performances of the Serpollet car in the Taunus mountains last summer I felt certain that its inventor would one day startle the petrol enthusiasts with some remarkable feat. I have never driven a motor-car in that part of the world, but I have often taken a team from Homburg to Nauheim, and the hills that those unhappy horses had to toil up would prove very trying to some of our best petrol cars. I have never been very enthusiastic about steamers myself, but with the account of the president of the Union Automobile's *course* before me I cannot but admit that our King and the Shah were very right in placing orders with him.

BARON DE CATER, who in spite of bad luck did very well with his Mors, is a rich young Belgian who has tried almost every type of car built. I had the pleasure of meeting him at the Laiterie in the Bois de la Cambre a few months ago, and he talked automobilism for a long time to the unaffected disgust of our less interested friends. He heaped anathema on the horrible roads of his country, on the ridiculous number law, and on the stupid policeman. He is a thorough sportsman and deserves every success.

THE road on which the race was run is one of the most perfect in Europe. Broad and well laid, with sufficient rise and fall to make it interesting, it passes through some of the most beautiful scenery in Southern Europe, though this consideration does not go for much with the excited *chauffeurs*. It was, I understand, very heavy in parts, and this may account for the rather poor time of the 50-h.p. car, but anything is better than the terrible dust that usually lies inches deep on its surface at this period of the year. So bad is it as a rule that none but the most courageous ladies dare risk the ravages it makes on hair and *toilette*, and it is very difficult to persuade them to take even so short a run as from Monte Carlo to Cannes. I remember once driving three ladies in a large Panhard from the Paris to the Réserve, on the Croisette. They were neophytes and trusted me; the result was that when we arrived at Jean's excellent little restaurant I was the most unpopular man on the Riviera. They were, however, put into a good humour by helping to catch a *langouste* and subsequently eating him *à l'Américaine*, and by watching a fishing competition at which King Edward assisted.

THIS incident recalls to my mind another in which a "hippomobile" played the principal part. Homburg *habitues* will remember a terrible 6 or 8 h.p. vehicle we used to call the "Ark" and hire for picnic purposes. One day we made up a large party to drive over for lunch to some neighbouring village, but just as we were reaching our destination a summer storm drenched us to the skin. We arrived at our destination, and a room was found in the little hotel for the ladies to dry themselves in. They promised to be back in twenty minutes, and we men were left to make shift with some towels and the kitchen fire. We waited over an hour till they joined us. The explanation of their tardiness that we extracted was that among them was an "angel"—from Boston, by the way—who

had had the forethought to take a pair of folding tongs in her pocket! From this I illogically deduce that the fair sex is better off in a motor car than in a horse-drawn carriage.

LAOCOON said "Times Danaos et dona ferentes," about a mechanical horse. Charron might quote him to-day if he looks on that 10,000 francs in the light of a gift, as he professes to. I had a chat with M. Canellopoulos about this great car that bears part of his name, and he is satisfied that it will do the two kilomètres in the minute. This is the only point of the bet, because the manufacturer, of course, knows the weight, etc. Seventy h.p. and seventy-five miles an hour? With the eight cylinders it ought to be possible, especially as the pace need only be kept up for a short distance. But even if M. Canellopoulos wins his bet it does not at all follow that the Gordon-Bennett Race is a "soft thing" for him. The conditions will be very different and the trial much more severe.

ONE of the latest "horsey" converts to automobilism is Mr. Brisco Ray. I saw him on a Canadian electric car in the City the other day. He had on a square bowler, a box coat, and a white stock with a pin in it that consisted of an enamel picture of a coach drawn by four horses! Excellent! We'll soon have Mr. Harry Goodbun selling motor-cars in the Lane.

A WELL-KNOWN actor whom I was driving the other day said, "This might be called 'a spirited movement,'" but I did not strike him, although he had been guilty of the "stormy petrol" pun earlier in the day.

A WEEK or two ago I had to pay a shilling for leaving my car in the yard of the Greyhound at Richmond while I had lunch. *Caveat Viator!*

MESSRS. JULIUS HARVEY AND CO., of 11, Queen Victoria Street, E.C., have just shipped a large steam motor-van to the United States. This motor, which is oil fired, has been selected by Messrs. Harvey's customer as the most efficient, after a thorough investigation of the various systems in use in England and on the Continent.

ACCUMULATOR INDUSTRIES, Limited, of Silver Street, Bloomsbury, W.C., have sent us a copy of their new catalogue giving full particulars of the constant current primary battery known as the Cupron Element, to which reference was made in our last issue. The list also includes useful instructions for installing the cells, which are made in a number of sizes, mixing the electrolyte, etc.

THE New Orleans Motor Company, Ltd., has been registered with a capital of £20,000 to acquire the business of engineers and motor-car manufacturers, now carried on by Burford, Van Toll and Company, to adopt an agreement with F. A. Rodewald and the Société des Ateliers Vivinus. The first directors are F. A. Rodewald, Count J. de Liederkerke, Count M. de Bousies, and A. Vivanus. The registered office is at Holly Place, Twickenham.

ISSUES have been ordered in the Court of Session for the trial of an action in which a mining engineer sues the Edinburgh Autocar Company for £2,000 for bodily injuries. He was knocked down by one of the defendants' motor-cars in Princes Street, Edinburgh, owing, it is alleged, to the driver being inexperienced and failing to keep a proper look-out. The defendants, on the other hand, put the blame on the pursuer, and say that if he had taken the least care the accident would not have happened.

THE Pick Motor Company, Limited, has been registered with a capital of £10,000, to take over the business of bicycle and motor-car manufacturers and repairers now carried on by J. H. Pick and C. Gray, at Stamford, Lincolnshire, and to carry on the business of engine, carriage, and machine makers, etc. No initial public issue. The directors are the Marquess of Exeter, Sir G. Whichcote, W. Bean, and C. Gray. The registered office is at 5, Blackfriars Street, Stamford.

THE GARDNER-SERPOLLET STEAM CAR.

CONSIDERABLE prominence has recently been given in automobile circles to the latest type of steam vehicles now being turned out by the Gardner-Serpellet Company, of Rue Stendhal, Paris. This is due partly to the attention the

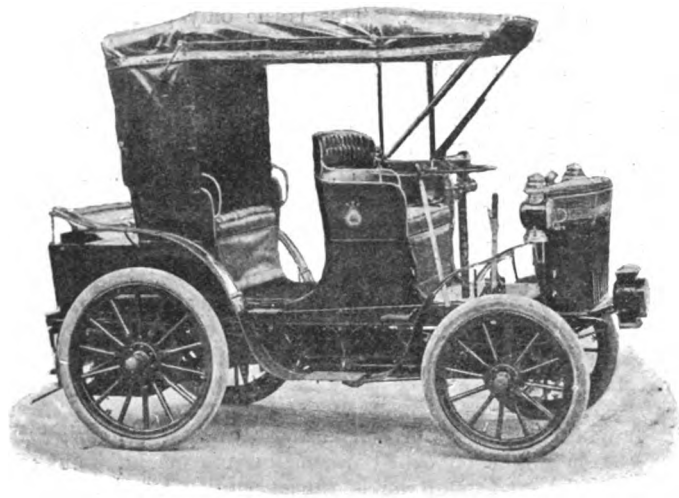


FIG. 1.—THE 8 H.P. SERPOLLET STEAM CAR.

cars have recently been receiving at the hands of Royalty, and in view of the success of M. Serpillet at Nice this week a detailed description of his vehicles may not be without interest. The car illustrated in Fig. 1 is of 8 h.p., and, as will be seen, takes the form of a four-seated phaeton with hood and canopy.

About two years ago (see issue of March 31st, 1899) we published a description and illustrations of some of the details of these cars, but in view of the attention now being paid to them, some further particulars may not be without interest. The name of M. L. Serpillet is intimately associated with the development of steam automobilism. In 1887 he built a steam tricycle in which coal was used as fuel. Four years later he constructed several superheated-steam carriages which proved remarkably successful. A few of these old vehicles are said to be still in use. At that time (1891) Serpillet enjoyed the distinction of being the only *chauffeur* to whom the authorities of the city of Paris had accorded the privilege of driving an automobile through the streets. He also took part in the early motor-carriage contests, among others in the Paris-Bordeaux race. Although he devoted his attention to the building of tramways for the city of Paris after his automobile experiences, he never abandoned the idea of producing a practicable steam-carriage. Coal, he soon discovered, could not be satisfactorily used as a fuel in automobiles. Then he tried oil. For three years he laboured to devise a means for employing petroleum. His work finally culminated in the system of burners which is now used on all his vehicles.

To begin our description of the cars it may be stated that they are being made in four sizes, 5, 8, 10, and 12 h.p., the general arrangement, however, being practically the same. Referring to the plan and elevation (Figs. 3 and 4), it will be seen that the motor is placed in the centre of the frame, the boiler being

carried behind. Provision is made for sufficient oil and water to be carried for a run of sixty miles. Practically the whole of the mechanism is mounted on a single plate attached to the frame by four bolts, which facilitates inspection or the carrying out of any necessary repairs.

Turning to the generator, we find it to be of the instantaneous vaporisation type without any appreciable capacity. It consists of a series of horizontal coils of round tubes, each coil being joined with the next by short lengths of tubes fastened outside the boiler shell by nuts. In the event of one coil deteriorating, it can thus be very easily and promptly isolated. The boiler is packed with sheets of asbestos. The circulation is forced, and when in running order it contains no reserve of steam or of water. At each instant, and corresponding to the requirements of the motor, there is admitted to the generator a certain quantity of water, which is converted instantly into steam. This is effected by the heat supplied from a series of Bunsen-like burners, employing ordinary lamp oil as fuel. In common with all builders of steam-cars, M. Serpillet claims for his generator that fouling is an impossibility, and puts forward the following reasons in support of his contention: 1. The considerable speed of the circulation prevents the formation of deposits. 2. The variation of the feed displaces continually the point of vaporisation where the deposits have a tendency to form. 3. The frequent cleansings, whether those automatically provoked by the play of the safety valve or those caused by the wide opening of this valve each time the car is finished with, produce a violent return of steam and air which sweeps the interior surface of the tubes. 4. The condensation of the exhaust steam partially cleanses the feed water, and finally the drops of oil forced into the reservoir, and which occasionally are drawn into the tubes, prevent the adhesion of deposits. Connecting the generators and the motor there is a special feed apparatus (Fig. 2) which varies the production of steam as may be desired. To

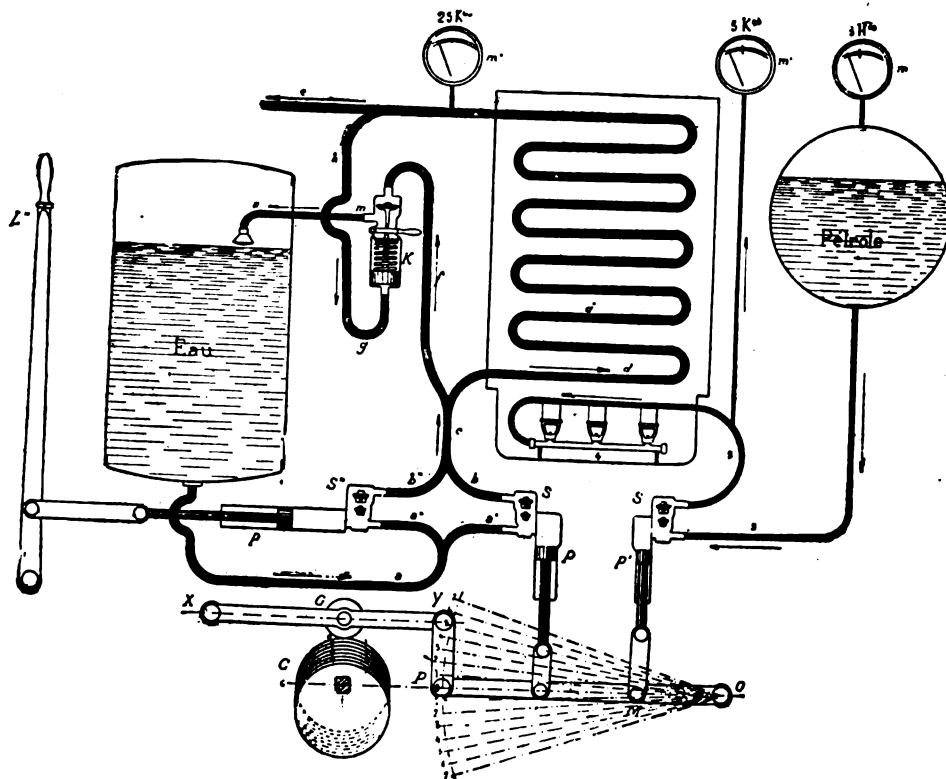


FIG. 2.—DIAGRAM SHOWING WATER AND FUEL FEED CONTROL.

[Le Chauffeur.]

effect this, not only is the quantity of water admitted to the boiler exactly regulated, but also the oil burned by the lamps, so that the diminution of heat is always followed by a corresponding diminution in the water supply and *vice versa*. The connection of the pumps feeding respectively the burners and the boiler brings about this effect, which results in great economy of both oil and water

The motor consists of four cylinders, grouped *vis-à-vis*, or at an angle of 45 degrees, and each of these cylinders is absolutely like that of a petrol motor. By this means the ever-troublesome stuffing-boxes have been entirely suppressed, and with them the loss of power, which exists in the best constructed steam engines, and which on small motors assumes sensible proportions. The connecting rods are attached direct to the pistons, of which the steam tightness is secured by a series of three piston rings. The usual slide valves and fittings are also suppressed, the distribution being secured by means of valves actioned by a succession of cams keyed on to the commanding shaft. On starting the engine the shaft is forced to the end of its course, and it always happens that one at least, and often two valves are found in the position of admission; the third, or two others, as the case may be, being in the position of escapement. The reversing of the engine is obtained by an inverse admission secured by changing the position of the cams, instead of reversing the slide valve as usually done on steam motors. One of the features of the engine is the means employed for the variation of the force. This is achieved by the lateral displacement of the cam shaft and the corresponding variation in the length of time during which the valves are open, with a like increase or diminution in the amount of steam admitted to the cylinders.

Referring to Figs. 3 and 4, *P* is the petrol tank, in which a certain pressure is maintained by means of the pump. The water tank is located in the front of the car at *O*. The automatic petrol supply pump is located at *F*, and that for the water at *G*. The hand lever *L* at the right of the driver is employed in starting up the boiler, the lever operating a pump, which injects a certain amount of water into the boiler. The admission of steam from the boiler to the engine is controlled by a foot pedal *D*. The steering is of the irreversible type, and is actuated through the medium of a horizontal hand wheel. Upon the steering pillar are found a couple of small levers, the one acting upon the pumps, and varying the quantity of water and simultaneously the quantity of oil injected, and the other actuating the cam shaft and permitting, following its position, forward and reverse motions, and stop. Two pedals project through the foot-boards, and operate respectively a brake of the Lemoine type and the admission of steam from the boiler to the motor. Several Serpollet cars will be on view at the forthcoming exhibition at the Agricultural Hall.

ACCORDING to the *Auto-Vélo*, M. Jenatzy and two other *chauffeurs* are having special cars built at Herstal, near Liège, for the Paris-Berlin race. They will be driven by combined petrol and electric motors, developing, it is said, 100 h.p.

INCANDESCENT TUBE V. ELECTRIC IGNITION.

EVEN to-day, after all the advances that have been made in electric ignition, there are many who consider the incandescent tube the most reliable and the one which is easiest kept in order by motorists with little knowledge of things electrical and mechanical. When considering the question of the superiority of one of several alternative devices, it is, of course, necessary to take into account all the conditions which accompany their operation. As against a probable greater reliability of the incandescent tube as regards ignition there is with this method of ignition a certain danger—that accompanying the use of an open flame in proximity to a store of petroleum spirit, which is certainly increased when both burner and petrol reservoir are mounted on wheels and are liable to all such disturbances as may befall a swiftly-moving road machine.

This element of danger has certainly been the reason why many manufacturers from the start have uniformly adopted electric ignition, and why, even in spite of the fact that, as one user puts it, "probably 90 per cent. of all the troubles with petrol vehicles are due to mishaps to the electric ignition," there does not seem to be the slightest tendency towards tube ignition.

In Europe many of the manufacturers of heavier vehicles who started out by using Daimler motors (Peugeot, De Dietrich) are still largely using the incandescent tube. With small high-speed motors tube ignition has never been used, for the very valid reason that these motors, to give the best results in power, must be equipped with a device by which the time of ignition can be changed instantly

and with certainty, which is impossible with the incandescent tube.

Electric ignition is constantly being improved, and there is no doubt that before long we shall, remarks the *Horseless Age*, have improved devices that will avoid many of the difficulties to which they are liable at present. The improvements which have been made in recent years cover all the elements of the ignition outfit—the current generator, the coils and the manner of protecting them, and the spark terminals or plugs.

With the great improvements of which electric ignition is still capable, and in the many efforts which are now being exerted in that direction, it is pretty safe to predict that electric ignition will never be overtaken by tube ignition, although, as entirely new types may eventually make their appearance, it might be unsafe to consider it the final type of ignition.

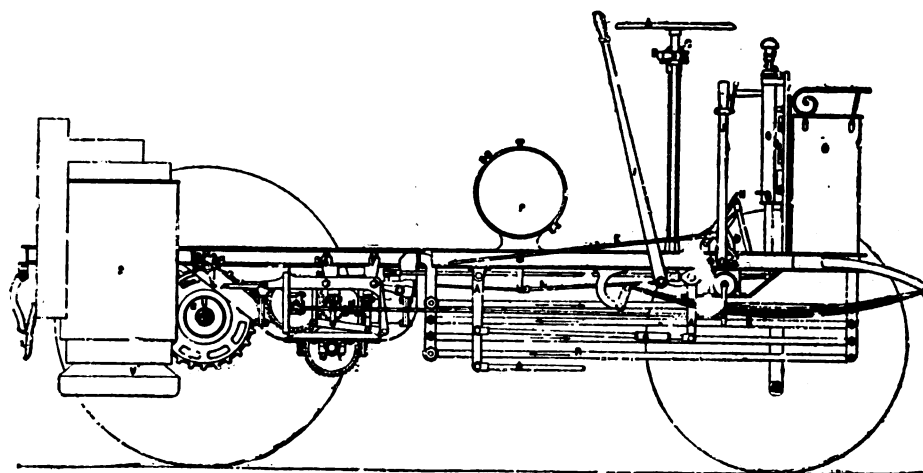


FIG. 3.—ELEVATION OF FRAME OF SERPOLLET STEAM CAR.

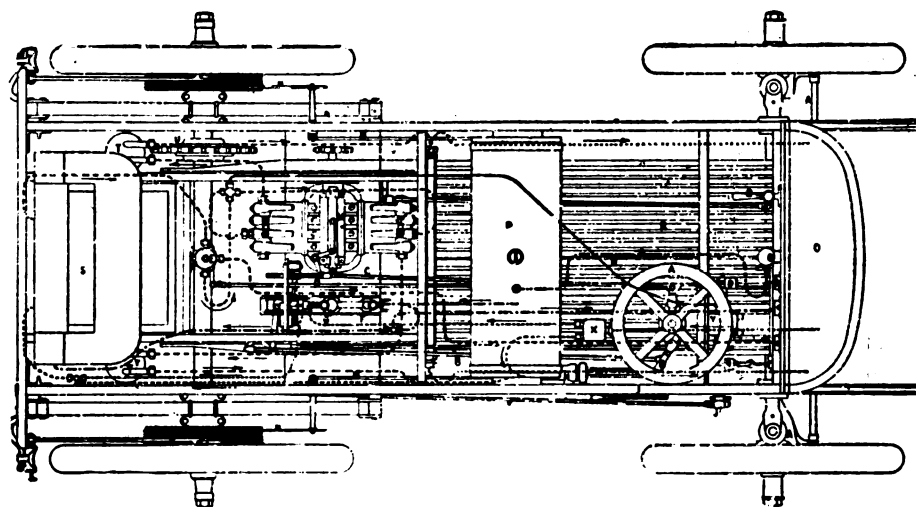


FIG. 4.—PLAN OF SERPOLLET STEAM CAR.

THE "HUDD" SPARKING PLUG.

THERE has just been put on the market by the "Hudd" Syndicate, of 27, Fumival Street, Holborn, E.C., a sparking plug which, while not departing materially from the standard plugs now in use, is claimed to possess several advantages. The platinum points are completely protected by the extension of the casing, so that, even without a case, the plug will stand a fair amount of knocking about. The connection is made by a hook, so that the wire can be disconnected from the



FIG. 1.

plug instantaneously. At the same time the wire cannot be broken, while the electric connection is claimed to be absolutely perfect. Moisture cannot get in between the insulated wire and the plug, while the parts cannot be moved or loosened when screwing up, and though breakages are very improbable, repairs are very easy.

Fig. 2 shows the plug in section and in Fig. 1 it is shown with the insulated wire from the coil, and a span hook for the insulated wire. A is the platinum wire completely protected by the extension or casing G. The central rod B carries at one end the central platinum point and at the other the terminal for connecting up. The porcelain filling C is held in the casing by the nut E and the asbestos washers D. Another asbestos washer, D, provides for any difference of expansion between the rod B and the porcelain. The screw K, with milled nut, takes

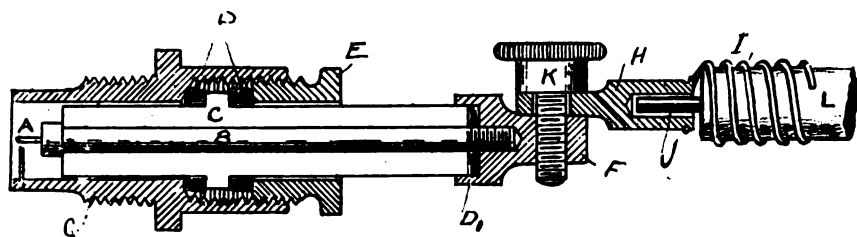


FIG. 2.

the "hook" connector H, which hooks on to it as shown in Fig. 1, and is held by the screw. The hook H has a hole drilled through it so as to take the clean copper wire cable J (with the insulation cut away, as usual) from the coil. This wire is held in the hole by soft solder, the clean wire cable being wrapped in tinfoil with a little powdered resin and then, put in place, warmed, the tinfoil melting and making the connection safe, the insulated wire coming flush up, but being encircled and gripped by the spiral spring, brazed to the hook H, so absolutely preventing breaking away or movement. The hook admits of the wire being set at any angle. We understand that the sparking plug, with other accessories, is part of a new two-cylinder engine to be shown at the forthcoming exhibition, and for which great claims are made. The plug will, however, be put on the market separately.

At a recent meeting of the Automobile Club of America, Mr. Cornelius J. Field, chairman of the Technical Committee, gave an interesting address on petrol cars, and how to operate them.

A RACE from Vienna to Budapest, to be run off in June next, is being organised by the Austrian Automobile Club. It will be run in three stages.

A PETROLEUM-SPIRIT DISTANCE CONTEST.

THE Automobile Club is organising a petroleum-spirit distance competition for Saturday, April 13th. It is intended that this trial should be a sporting event amongst members of the Club to ascertain the consumption of petroleum-spirit by their respective motor-vehicles over a given course. The trial will be confined to vehicles carrying more than one person, owned and driven by members of the Automobile Club or of affiliated clubs.

Entry forms to the Club secretary must be filled in and returned to the Club secretary not later than Thursday, April 11th.

The competing vehicles will assemble at Sheen House Club Yard not later than 2.20 p.m. on Saturday, April 13th. The route will be by the Sheen House entrance of Richmond Park to Robin Hood Gate, and (still keeping in the park) to Kingston Gate to Kingston (4½ miles), Esher (8½ miles), Cobham (11½ miles). At the top of the hill after Cobham (Pain's Hill, under suspension foot-bridge) proceed straight on and take first turn to the right on the Weybridge Road. At fork, 1½ miles farther, take right hand road for Hersham (16½ miles). Turn to right for Esher (18½ miles). Turn left for Kingston (22½ miles); over Kingston Hill by High Road for 4½ miles, then turn left down Roehampton Lane. Then to left along Richmond Road and to left to Sheen House Club (30 miles).

The drivers of vehicles on arrival at Sheen House Club will, under the supervision of their observer, be required to fill to the utmost extent the running spirit tanks of their cars. On the return of a vehicle to Sheen House, the running tank will be refilled with petroleum spirit under the directions of the committee and the immediate supervision of the observer. The amount of spirit required to refill the running tank will represent the consumption of spirit during the trial. A seat must be placed at the disposal of the Committee for the carrying of an observer on each vehicle. Vehicles having no seat in addition to that of the driver will, therefore, not be eligible for this competition. Drivers of vehicles must see that all seats in their vehicles are occupied by passengers having an average weight of not less than 10½ stones each. Drivers of vehicles entered for the trial will be required to take observers on board at the Club before proceeding to Sheen House Club.

Observers on cars will be charged not only with seeing that petroleum spirit tanks are not replenished during the run, but also with taking notes of the times of arrival at various points, and duration of stoppages and their causes. If the total running-time of a vehicle after deducting stoppages exceeds four hours, the vehicle will be disqualified. The passing of one competing vehicle by another whilst both are descending gradients or within towns or villages is prohibited, and the vehicle of any driver who may break this regulation may be disqualified. The usual regulation as regards speed in towns, villages, etc., will be in force.

THE success of M. Serpollet on his 12 h.p. steam-car has been much commented upon. The intrepid *chauffeur*, whose average speed for the race works out at about 44 miles per hour, was accompanied throughout the race by his wife.

THE United Motor Industries, Limited, of 40, Holborn Viaduct, E.C., have just issued a supplementary price list. It contains 48 pages, and all the goods referred to in it are new. We understand that this supplementary list will be sent free on application.

THE ever-active Mr. E. Shrapnell Smith gave a lecture on Automobilmism up-to-date at the Technical Schools, Bolton, on Wednesday night. On Friday, the 29th inst., he was to lecture on the subject of Heavy Motor Vehicles, to the Engineering Society of the Technical Institute, Coventry.

LAST year in Germany there were altogether twenty-five automobile races, the most important being the one from Mannheim to Pforzheim and back, in which there were twenty-four competitors. There are in Germany altogether thirty automobile clubs, all affiliated with the Automobile Union.

HERE AND THERE.

THE Automobile Club will, on Tuesday next, the 2nd April, hold its quarterly 100 mile non-stop trial.

THE question of establishing a motor-racing track at Koekelberg, near Brussels, is at present under consideration.

It is stated that an American company is now building fifteen special 18 h.p. petrol car vehicles of the Panhard-Levasor type.

THE Brighton Cyclist Club is organising a race meeting to be held at Preston Park on Easter Monday, April 8. Included in the events is a five-mile motor-tricycle handicap.

THE first motor-car, a steam vehicle, to appear in Armagh district is one owned by Mr. Jos. Atkinson, secretary of the County Council.

WE learn that Mr. F. H. Clingoe has resigned his position with Messrs. Friswell to take up an appointment with the General Automobile Agency, 100-104, Long Acre, W.C.

THE Hampstead Works Committee have decided to recommend the Council to spend £1,500 in the purchase of motor-vans for street cleaning and watering purposes.

WE understand that a company is being formed for the purpose of introducing a public service of motor-cars in Scarborough. The company will commence with three cars, and it is expected that these will be ready before the end of July. The cars will be constructed on the plan of char-a-bancs, with accommodation for twelve passengers.

THE Annual Motor Cycle Meeting of the Automobile Club will be held in July. The events will be as follows:—(a) One Hour Scratch Race for the *Autocar* Challenge Cup, open to any motor-tricycle; (b) Five Miles Scratch Race for the *Motor-Car Journal* Challenge Cup, for motor-tricycles with engines of 2½ h.p.; (c) Ten Miles Handicap for the *Automotor Journal* Challenge Cup, for motor-tricycles of not more than 2½ h.p.; (d) Three Miles Club Handicap, for motor-bicycles only.

THE British Automobile Commercial Syndicate, Limited, whose formation we announced in a recent issue, will shortly open a large dépôt at 97 and 98, Long Acre, W.C. The building consists of four large floors and is well adapted for the service. At a recent meeting of the company, the following were elected as directors:—The Rt. Hon. Earl of Shrewsbury and Talbot (chairman), M. Chabert, president of the Société Commerciale d'Automobiles, Paris, and Mr. D. M. Weigel (managing director).

ON calling at the dépôt of the Sports Motor Car Company, 103, Fulham Road, S.W., one day last week, Mr. Capellen showed us an example of the latest type of Mayfair Voiturette. It is fitted with 4½ h.p. De Dion Bouton or 5 h.p. Sports motor, and has a starting handle from the seat, lubricator to crank chamber, etc. A large water tank is placed under seat, the capacity being sufficient for a run of 120 miles, while the petrol tank capacity will suffice for 100 miles. The frame of the car has been considerably strengthened.

THE Hon. Secretary of the Reading Automobile Club has written to the local papers stating that arrangements can generally be made between Club members owning cars and those owning restive horses, with a view to familiarising timid animals with the modern means of transit. The offer is made solely with the idea of expressing the desire of the Reading Club to act with as much courtesy as possible to all fellow travellers on the King's highway, and we trust will be appreciated by horse owners accordingly.

A "SINGER" motor-bicycle and a tricycle of the same make were ridden from Coventry to London and back on Friday of last week, by Messrs. Duret and Perks. No attempt at record breaking was made, the riders contenting themselves with a steady average. They turned at Highgate Archway, and the total time for the journey, 176 miles, was 17h. 59m. The riding time was much less, as nearly six hours were occupied in calling on agents and in attending to the requirements of the inner man, which the motor-cyclists found indispensable to keep up their temperature in the keen air which prevailed during the ride. We may add that, with the exception of a little misfiring on the bicycle, no trouble was experienced.

THE CORNU VARIABLE-STROKE PETROL MOTOR.

ONE of the novelties at the recent motor-car exhibition in Paris was the variable-stroke petrol motor shown by Messrs. Royer and Cornu, of Rue St. Pierre, Caen, and of which we are now able to give illustrations. The motor consists essentially of an ordinary cylinder with its piston, valves, etc., etc., and of a rocking lever, A, which is pivoted about the shaft, Z, and is caused to rock backwards and forwards by the piston, M, through the connecting rod, U. It will be seen that a second connecting rod, K, transmits the power from the lever, A, to the crank-shaft, D, and that the position of the

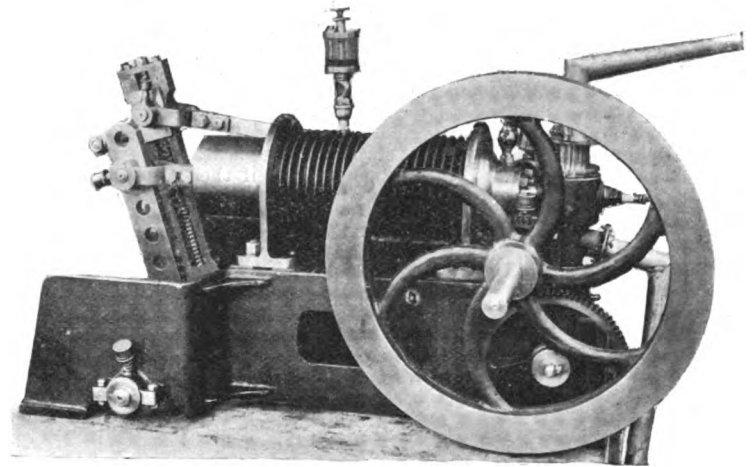


FIG. 1.—THE CORNU VARIABLE-STROKE MOTOR.

rod, K, relatively to the lever, A, can be varied by means of the moving block, B, in the lever, A. The object of this device is to vary the stroke of the piston, M, according to the power required, and this, it will be seen, is effected by causing the slide, B, to approach or recede from the shaft, Z. A feed screw carries the block, B, and this screw terminates in two ratchet wheels, R, which are free to turn near the shaft, Z, in the slot, E. These ratchet wheels can be caused to rotate by allowing one of two pawls, H, to engage with its corresponding wheel as the lever, A, rocks to and fro; in this way the block, B, can be moved up or down to increase

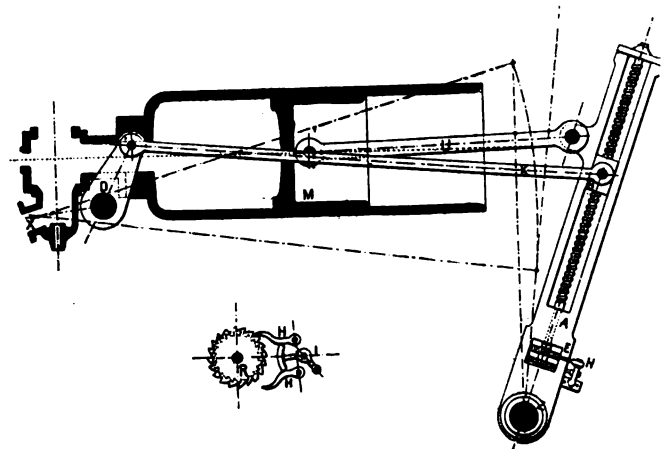


FIG. 2.—DIAGRAM OF STROKE-VARYING ARRANGEMENT.

or decrease the stroke of the piston, M. In the motor built the range of stroke varies from 8 to 24 centimetres. The position of the two fixed points, D and Z, relative to the cylinder has been designed so that the rod, K, in lowering, that is to say, in increasing the stroke of the piston, describes an arc of a circle and draws the piston from the bottom of the cylinder to the dead point, the result being that the compression chamber is

always proportional to the stroke and to the quantity of gas drawn in on the suction stroke. The makers claim that their variable-stroke motor entirely obviates the use of mechanical speed change gear, which they estimate absorbs 30 per cent. of the power of ordinary petrol engines. Another great advantage claimed for it is that the system adopted permits the engine to draw in the exact quantity of explosive mixture desired to get the full power at any speed. We understand that Messrs. Royer and Cornu are open to negotiate for the sale of their British patents.

OBSTRUCTION BY MOTOR-CAR.

At the Birmingham Police Court last week Mr. F. Lanchester was charged with obstruction in the street. Police-constable Taylor stated that on March 10th he saw a motor-car standing outside Lincoln's Inn, Corporation Street, at 6.50. A large crowd collected, and a tram pulled up, the driver stating that he could not get past. No one came to the car till 7.10, when defendant came out of the Chambers. Witness told him the car had caused an obstruction, and asked for his card. This defendant produced, and gave it to the officer, together with a shilling, which, however, he declined to receive. For the defence it was contended that the car itself caused no obstruction, but if there was an obstruction it was caused by the crowd, and that defendant was not responsible for this. Defendant himself gave evidence, stating that when he left the car at 6.50, and when he came out again at 7.5, there was no crowd near. In reply to the Stipendiary, he admitted offering the officer 1s., but he

going at a greater rate than eight miles an hour. It was a car made for two, and there were five persons on it, so that a furious speed was impossible. He was canvassing and picking up voters in the interest of Mr. Mark Mayhew, one of the candidates. The Magistrate: The poll closed at eight? The Defendant: Yes, but we had plenty of time. Another witness having been called, the magistrate observed that the defendant's conduct of the case showed the wisdom of the old saying that a shoemaker should stick to his last. He might be very skilful in driving a motor-car, but he should have refrained from trying his skill at advocacy, for the very answers elicited by him from his own witness corroborated the police-constable's evidence. The facts were plain; there was an exciting election, the close of the poll was at hand, and the car careered down the road like a fire-engine. He fined the defendant 40s., with 2s. costs.

At Hereford last week Mr. F. Rough was summoned for driving a motor-cycle at a greater speed than fourteen miles an hour in Whitecross Road. Several competent witnesses said defendant was travelling about twenty miles an hour. Defendant told the Bench that he had since tested the machine, and found that it was impossible for it to go at the rate mentioned. If he could conscientiously think he was going at an excessive pace he would have acknowledged it and apologised. The Chairman told defendant that he was an experienced man and ought to know better. They would inflict a fine of £2 and costs 13s. 6d., but they would be inclined to inflict the maximum penalty of £10 if he came there again on a similar summons. Mr. Rough in sending us a cutting from a local paper adds sarcastically, "Cycle is for sale—too good for me."

A NEW motor-car depôt is being opened in Mortimer Street, London, W.C.

THE Creek Street Engineering Company, of Deptford, S.E., have taken up the manufacture of the Capel car illustrated in our issue of July 21st last.

AN hotel-keeper on the Ripley Road had a notice on the front folding doors of his establishment last week to the following effect:—"Slam the door; there's someone ill here." Somewhat pertinent our readers will think, and perhaps many may be of opinion also "a trifle rude."

THE programme for the English Motor Club's motor meeting at the Crystal Palace, on Easter Monday, is a varied one, and will consist of the following events:—Five miles scratch motor-tricycle race; two miles motor-tricycle handicap; ordinary voiturette race running in two heats, two in each heat; pursuit race between two De Dion-Bouton racing spiders, 10 h.p.; attempt on the one mile record from flying start; one mile roadster tricycle handicap and a match between two steam cars. Members of the club who desire to compete and who have not yet entered, should communicate at once with the hon. secretary.

AN interesting demonstration of the first Diesel engine made in England took place on Monday, at Guide Bridge, near Manchester. The motive power of this engine is crude petroleum, or any practical inflammable oil or gas, gradually introduced into an excess of compressed air. The heat of the compressed air causes slow combustion, not explosion, without any material increase of temperature, the heat being turned into work. It is claimed for the Diesel motor that there is an all-round economy of fuel, and that it works at half-load with only a slight increase over the proportionate cost of working at full load. Several indicator diagrams were taken during the course of the afternoon, and were regarded by experts present as being of a highly satisfactory character. The Diesel Motor Company state that the engine has been used for automobile purposes on the Continent, and they expect to enhance the popularity of this form of locomotion by the application of the engine.

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THE GENERAL AUTOMOBILE AGENCY'S GARAGE IN LONG ACRE, W.C.

said he did this because of the trouble he had been put to. It was not with the intention of bribing him, and had he thought he would have been summoned he would not have done it. The Stipendiary said he believed every word the police had said, and he thought they had given their evidence most fairly. It was clear there had been obstruction, and he imposed a fine of 10s. and costs.

FURIOUS DRIVING CASES.

AT the South-Western Police Court last week Mr. A. Ellis, of Tooting, was summoned, for that he did drive a motor-tricycle on the High Street, Tooting, furiously on March 13th. Police Constable McKenna stated he was unable to catch the defendant, who was travelling at the rate of eighteen miles an hour. Witness had cautioned defendant in January last. Defendant denied having driven furiously, and stated he had been driving a motor for years, and had always kept within the speed limit. The magistrate, however, convicted, imposing a fine of 10s. and costs.

AT the South West London Police Court last week Mr. R. Moffatt Ford, managing director of the Motor Car Company, was summoned at the instance of the police for driving a motor-car along Streatham Hill at a furious rate on the evening of the 2nd inst.—Two police-constables swore that they saw the defendant drive the car past Streatham Hill Station at the rate of sixteen miles an hour. He was driving some voters to the polling station in Christchurch Road, and on his return they stopped him and took his name and address. As the car sped along the occupants shouted out "Hi! hi!" to the people in the road. The defendant went into the witness-box and denied on oath that the car was

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COMMENTS.



AS mentioned in our last issue, the members of the Automobile Club were invited by the Hon. John Scott Montagu, M.P., Vice-Chairman of the Club, to drive to and take tea at his residence, Ditton, near Datchet, on Saturday last, on the occasion of a meeting of the Eton Beagles. Forty members accepted the invitation, but unfortunately the weather was extremely bad, especially during the earlier part of the day, thus preventing many of those who had promised from turning out. Mr. and Mrs. Carl Meyer drove down on their 12 h.p. Panhard; Mr. Richardson, with Mrs. Richardson and friend, drove a 6 h.p. Daimler; Lord and Lady Edward Churchill and friend arrived on a four-seated Locomobile; Mr. T. B. Browne, with Mr. Martineau and Mr. Loeffler, drove his 6 h.p. Panhard; Mr. Heyermans and Mr. Harrington Moore were on an 8 h.p. Panhard, Mr. Cecil Edge on a 6 h.p. Gladiator voiturette, Mr. S. F. Edge and Mr. C. Jarrott were on a 5 h.p. Panhard light carriage, and Mr. Bruce and Mr. Johnson (the secretary) on a Darracq. Mr. Montagu and Lady Cecil Montagu did all they could for the comfort and enjoyment of their guests. At about 6 o'clock the majority of the party drove to Windsor and took dinner there at the Castle Hotel. The drive home at night was extremely pleasant.

Identification of Motor-cars.

MR. JOHN ROLFE, of Beaconsfield, writes to the *Daily Telegraph* stating, "On Thursday last week a motor-car came from Beaconsfield and rushed towards Wycombe past my house at the rate of about seventeen miles per hour. My retriever, a valuable dog, ran from the house into the road, and before he could get out of the way the car went over him, nearly killing him." Not being able to trace the driver of the car, Mr. Rolfe asks, "Would it not be possible to compel all motors to carry some conspicuous number so that they might be recognised in cases where they had done some damage? If it had been a human being instead of a dog that was run over the failure of identification would have been the same."

The Other Side of the Case.

THE other side of the case is put forward by Mr. Frank H. Butler and two other motorists in Wednesday's *Telegraph*. Mr. Butler points out that "In France anyone who allows his dog to pursue a cyclist or motorist and does not restrain the animal is liable by the penal code to a fine of from six to ten francs. Several valuable lives have been lost through cycles and motors skidding over dogs which were not under proper control. To get clear of a dog often means upsetting the vehicle and killing yourself instead of the dog." A military correspondent also writes that last summer he was driving a motor between Southsea and Chichester at, fortunately, about eight miles an hour. Two large retrievers lying on the footpath suddenly got up and charged at the car. One got in between the wheel and the spring, tearing the steering-handle out of his hand, which was strained and cut. The car turned right round, and if the

road had been narrower the party must have upset in the ditch. This correspondent adds, "It seems to me this is very like what happened in Mr. Rolfe's case, and goes to prove it is dogs allowed to stray on the high road that should be numbered. In what better position would Mr. Rolfe have been if it had been a dog-cart with a trotting horse going seventeen miles an hour? Some people want motors numbered, others carriages and horses; I say retriever dogs, and there are probably more would go for perambulators and cats, but the law as it is is quite strong enough to punish anyone who commits an injury through carelessness without attending to all these fads."

Municipal Motor-Cars.

AT the London County Council meeting, on Tuesday, Mr. Benn, chairman of the Highways Committee, in answer to a question, said something might be done in the direction of a municipal motor-car service, and the Committee had recognised the importance of the subject by electing as a member Mr. Mark Mayhew, who was a recognised expert on this modern means of locomotion. The Committee, however, did not, he thought, consider Mr. Balfour's idea of radiating thoroughfares a practicable one.

The Automobile Club's 100-Mile Trial.

ONLY two cars underwent the 100-Mile Non-Stop Trial of the Automobile Club on Tuesday—a 6 h.p. Gladiator car, driven by Mr. Cecil Edge, and a Marshall 6 h.p. dog-cart. The starting-point was the milestone on Notting Hill, two miles from the Marble Arch, and the turning point was the fifty-second milestone, two miles short of Oxford. After making a good non-stop run for eighty miles, the Marshall was suddenly thrown out of the running by the unusual accident of a broken crank-shaft, owing to a flaw in the metal. The Gladiator made an excellent run over the whole course, with only one short stop.

Motors in Orkney and Shetland.

FOR districts which are badly served or not served at all with railways the advantages of the horseless carriage are very great. Although this is admitted by all who are interested in self-propelled traffic, "outsiders" are slow to grasp the more pleasing, therefore, to learn that a movement is on foot in the far north to take advantage of the new method of locomotion for business as well as pleasure purposes by inaugurating a motor service in Orkney from Kirkwall to Stromness, a distance of fourteen miles. During the tourist season the traffic between the two places is very heavy. The attractions of Maeshowe and the Standing Stones of Stennes and the Loch of Harray, the happy hunting grounds of the disciples of Izaak Walton, are largely responsible for this. Whether the introduction of the motor-car will prove a success or not remains to be seen, but at any rate the experiment will be watched with interest by all followers of the automobile. So much depends upon how these running companies are managed that it is difficult to forecast regarding the successful working or otherwise of the scheme. One thing is certain—unless

THE GENERAL AUTOMOBILE AGENCY, D. Farman, Man., Garage open day and night, all cars in stock, 100-104, Long Acre, W.C.

punctuality in running be strictly observed the public very soon begin to "kick." To ensure promptness of start and arrival, two or three spare cars, more or less, according to the fleet to be engaged in the service, are an absolute necessity, for one never knows the minute when some small matter (trifling in itself maybe, but these trifles take time sometimes to "spot") may result in a car refusing to move, and one must have another ready to take its place almost instantaneously. We know those who have had considerable experience in the management of running companies and the *bête noire* which they had to contend against was unpunctuality, caused in most cases through not having spare cars ready to take up runs—at a moment's notice—in the event of the breakdown of the regular car.

The Steam-Car as a Racer.

THE performances of the Serpollet steam-car in the various contests at Nice put the prospects of steam in a much more favourable light than ever before. M. Serpollet won the tourists' race of 84 miles at an average speed of about 31 miles an hour. By gearing up his car tremendously M. Serpollet also made the fastest time in his class in the flying kilomètre contest, travelling at a speed equal to 66 miles an hour. In the hill-climbing race the steam-car was less prominent, the time, 24 min. 11 3-5 sec., being considerably inferior to that of the petrol-driven cars. None the less, the merits of steam have been very strikingly displayed. It may be of interest to mention here that the right to manufacture and sell the Gardner-



STARTING FOR AN EASTER TOUR.

Serpollet steam-cars in the British Empire has been acquired by the British Power-Traction and Lighting Company, of York, who are arranging for a large output of 6, 9, and 12 h.p. cars.

A Big Race in America.

As a result of a conference held in Buffalo between the Director-General of the Pan-American Exposition, and a committee appointed by the Board of Governors of the Automobile Club of America, it has been decided to hold a grand international road race of 200 miles, from Buffalo to Erie and return, as the culmination of a week of automobile sports at the Pan-American Exposition. The sports and contest will take place during the week beginning September 16. It is intended that the international race shall rank with the famous long-distance automobile races of the world—large purses and valuable cups and medals will be presented to the winners.

Another End to End Trip.

WE referred in a recent issue to the trip from John o' Groat's to Land's End lately undertaken by Mr. W. R. Warren Smith in a motor-vehicle. The chief merit of his performance is that it was made in wintry weather and under most disadvantageous conditions, for some of the roads, especially in Perthshire and Inverness-shire, were so blocked with snow that

a road had to be cut for a mail cart which immediately preceded the motor-car. The negotiation of the ascent of the Ord of Caithness and the formidable Shap Fells in Westmoreland put the vehicle to the severest trials, but after the heavy country was left behind good progress was made, notably one run of 160 miles from the north of Shrewsbury to Bristol in the day. Mr. Warren Smith accomplished the journey on an Argyll voiturette of 5 h.p., weighing only 4½ cwt. The ride was performed in easy time without any attempt at record breaking, the cost of the petrol consumed being £3 5s., and Mr. Smith estimates, taking into account certain detours which he made, that he covered just over one thousand miles. The only mishap experienced was the breaking of the piston when three miles west of Penzance. The identical car is now on view at the Hozier Company's London dépôt in Baker Street, W.

The Glasgow Exhibition Trials.

At a meeting of the Committee of the Scottish Automobile Club, held in Edinburgh a few days ago, the proposed Glasgow trials were fully discussed, and the members present decided that it was necessary to have a committee of gentlemen residing in Glasgow and vicinity to confer with the Glasgow Exhibition authorities in the arrangement of these trials. A committee was therefore appointed, with Mr. R. J. Smith, C.A., 59, St. Vincent Street, Glasgow, as chairman.

A Word of Caution.

IN a recent issue the *Horseless Age* sounds a useful note of warning which may well be repeated here. Our contemporary remarks that quite a number of serious accidents have occurred of late which may be ascribed to what might be termed repaired patchwork. A car altogether too light in its original construction has been time and again strengthened and repaired by its owner. Parts that proved too light have been replaced by heavier metal, until the total weight of the vehicle has been raised one or two hundred pounds. Some of the crucial parts, however, like wheels and axles, have remained unchanged, and in consequence are carrying additional weight when their original load was far beyond the factor of safety. The overworked metal gives way under some unusual strain, and a dangerous spill is the result. A motor-car of too light design for durability and safety cannot be rendered safe and durable by patching. Unless great care is used in handling it and only moderate speeds are indulged in it will fail at some critical moment as certain as there are laws that govern the strength of materials and the strains to which these are subjected in road work.

How Long a Motor Lasts.

THE question of the "life" of the engine of a motor-car is discussed by M. F. Gaillardet in a recent issue of *La Locomotion Automobile*. M. Gaillardet compares the motor to the human heart, each having a limited number of revolutions or pulsations to perform during its busy existence. The more rapidly the motor works or the heart beats the sooner it will wear out. A one-horse motor running at 2,400 revolutions per minute will, therefore, last half as long as a motor of the same force and of 1,200 revolutions. Accordingly, M. Gaillardet is opposed to the application to "voiturettes" of high-speed motors—that is to say, motor-cycle motors, which are made to give a maximum of force with a minimum of weight, which implies the necessity of high speed. This fault in the motor-cycle was partly corrected by means of the lightness of the "ensemble," which made it possible to obtain sufficient speed on the road without making use of the full power of the motor. "But," says M. Gaillardet, "in the 'voiturette,' by means of the speed-changing mechanism, one can utilise without mercy the maximum of the power developed. This power, given the weight of the entire outfit, is not so great that one can think of economising it, and, in fact, it is never economised."

Electric v. Incandescent Tube Ignition.

IN the modern racing machine of twenty and more horse power—the incandescent tube has been superseded by electric ignition, although for other reasons than that of safety. In racing machines everything which increases the effective power of the motor is of the highest value. The motors of racing vehicles naturally have a high normal speed and a variable ignition is therefore an essential feature of such motors. Thus it has been found that in races a higher average power can be obtained from a motor when fitted with electric ignition than when using an incandescent tube, and electric ignition has now been sufficiently developed so that when handled by expert motorists, such as race contestants naturally are, it is found unnecessary to supplement it by tube ignition, as was done when the change from tube to electric ignition was first made in such machines.

The Carlsbad Automobile Week.

FOLLOWING the example of the Automobile Club of Nice the Austrian Automobile Club intends to organise an "automobile week" in Carlsbad. If the negotiations at present going on are successfully concluded the meeting will take place at the end of July or the beginning of August in that international watering-place. For the moment the following programme is put forward:—First day, automobile flower *corso*; second day, race for racing machines, starting from Carlsbad; third day, race for touring machines; fourth day, hill-climbing contest; and fifth day, automobile festival and distribution of prizes.

Automobile Racing in Russia.

THE St. Petersburg Automobile Club held its annual race on the 17th ult. It had been postponed once because a heavy fall of snow rendered progress impossible. On this occasion the snow was thawing, which made matters almost as bad. The race was, as on two previous occasions, over the 65-verst triangle formed by the Volkoff, Gachina and Krasnoe-Selo high-roads, starting and finishing from Alexandrovskoe. The following started:—Motor-cyclists: Messrs. Alexeieff, Sourmetz, and Kroupsky; voiturettes: Messrs. Barbet and Mikhayloff; and cars: Messrs. Henrick and P. Orlovsky. From start to finish the race was a chapter of accidents. Skidding, waltzing, and plunging into snow drifts, the competitors were unable to make any great speed. Sourmetz on his motor-cycle was the only one who finished within the time limit of four hours. He took 3h. 58min. to cover the sixty-five versts.

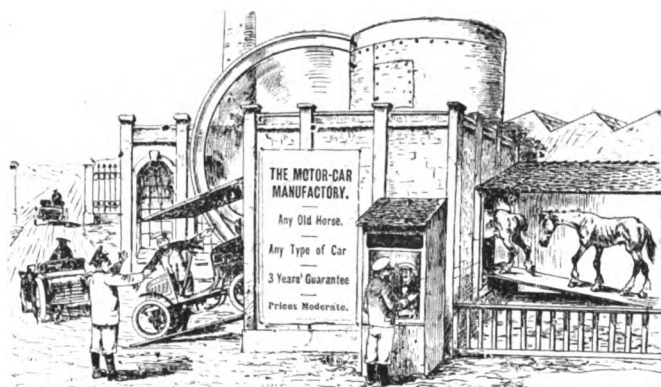
The Stirling Voiturette.

"FOR some time past I have," writes our Scottish correspondent, "had the promise of a trial of one of these smart little carriages, but until last week I was not able to avail myself of it, chiefly on account of the weather, which was not at all comfortable. Last week, however, I had an opportunity of closely scrutinising the details of this voiturette and of experiencing a fifteen miles spin thereon. The car submitted for my inspection and trial was one of the maker's Standard No. 1, a front driver and rear steerer. The side steering "tiller," similar to that used on the "Locomobile," has been adopted in place of the centre tiller first introduced, the object being to give a "free" foot board. This was my first experience of front driving and steering by the rear wheels, and I was much interested to witness the effect of the same in comparison with the usual practice of front steering. I was agreeably surprised at the result. In hill-climbing there was a very marked improvement over the rear-driver, and so far as the "driving" is concerned I had ample confirmation of what most engineers are agreed upon, viz., that the front wheels ought to be the "drivers." The important matter of steering, however, has also to be considered in motor-car construction, and a good deal of prejudice exists, in this country at least, against rear-steering, I myself sharing the prejudice. After

my ride on the Stirling voiturette I must admit that if my prejudice was not destroyed it was certainly greatly diminished, and I dismounted from the car with an inward feeling that the last word had not been said on this subject, and a strong inclination to believe that the question of preference for front or rear steering was largely a matter of habit, assuming, of course, that the steering apparatus was properly designed, as it appeared to be on the Stirling voiturette. I was much pleased with the running qualities of the car as well as its substantial and businesslike appearance. For the benefit of people preferring front steering Messrs. Stirling have their No. 2 voiturette in this form, a batch of which I saw coming through the works on the day I visited Hamilton, several of them being fitted with *tonneau* bodies."

The Position of the Coachbuilder.

WITH reference to our Comment on this subject in our last issue, the following extract from an article in the last issue of the *Carriage Builders' Journal* is not without interest:—"The feeling, arising from many causes, is growing gradually stronger that for many purposes for which carriages and horses are used to-day, motor-cars will take their place before long. Carriage builders are not so suspicious and doubtful as they were, say, a couple of years ago, and it is to be hoped that they will, in their own interests, wake up to the immense possibilities there are in the development of the motor. Our ideas of what a carriage should be may not be possible with some styles of motor-frames at present in favour, but are carriage builders quite sure that their ideas in this respect are infallible? Is it not possible that the tastes and requirements of the carriage user may vary, and that there may arise a fashion which is not the present style of carriage, the designing, building, and finishing of which may pass as effectually out of the hands of the carriage builder as did the building of railway carriages?"



IF IT WERE POSSIBLE!

The A.C.F. Carburant Competition.

A SERIES of tests of carburating agents is being organised by the Automobile Club of France for the 1st May and following days. The carburants to be subjected to test will be those manufactured for use in explosion motors, all experiments being made in comparison with a special spirit of the specific gravity of 700 at a temperature of 15 deg. Cent., and with motors of various types, viz., high-speed motors with short stroke, 3.12 in. cylinder diameter, 3.12 in. stroke, 1,300 to 1,600 revolutions per minute; motors running at mean speed with mean stroke, 3.12 in. bore, 4.68 in. stroke, 850 revolutions per minute; and slow-speed motors long stroke, 4.29 in. bore, 6.24 in. stroke, 650 revolutions per minute. The experiments to be carried out will bear upon the consumption of the carburant per horse-power per hour taken off the crankshaft at various speeds. To this end the consumption per horse-power per hour taken off the shaft at various speeds will be noted, both for the standard and the tested carburant, etc., under the best possible conditions of carburation, advanced ignition, cooling, lubrication,

etc. After a continuous run of ten hours with each carburant, the motor will remain untouched for the night, and afterwards careful note will be taken of the condition of the valves, cylinder walls, exhaust pipe, etc., before same are cleaned. Competitors who have specially designed carburettors for use with their particular carburant may have them tested with their carburant. The fact that any carburant is not purchasable will not bar it from the tests, but the fact that it cannot be generally bought will be noted in the report.

Accumulator Charging at Chester.

At a recent meeting of the Chester Town Council an interesting question cropped up, viz., that of the charges to be made in connection with the charging of the accumulators of electrical vehicles at the Corporation electric light station. Mr. Thursfield, the Corporation electrical engineer, reported that he occasionally catered for the convenience of tourists passing through the city by charging their accumulators, and asked the Council to state a rate at which the necessary current might be supplied. It was resolved that the charges be as follows:—6d. per unit, with a minimum charge of 2s. to cover cost of supervision; exceeding twenty units, 3d. per unit. These charges seem reasonable enough, and are worthy of imitation on the part of other provincial centres.

Another Automobile Gun Carriage.

IN our issue of October 6, 1899, we illustrated a motor gun carriage, which Major R. P. Davidson, of the U.S. North-Western Military Academy at Highland Park, Ill., had had built, and with which he made some experiments between that place and New York. Owing principally to tire troubles the trials were not successful. We now learn that Major Davidson has decided to construct, in the manual training shops at the Academy, two entirely new carriages, using steam as the motive power. He expects to start with these two carriages in June for Washington, taking the southern route through Indianapolis, Columbus, and over the mountains. After giving exhibitions before the U.S. War Department at Washington, he will go north through Baltimore, Philadelphia, and New York to Buffalo, spending a week or ten days giving exhibitions there at the Exposition, and from there back to Chicago, making in all between 2,000 and 3,000 miles' run over roads of all conditions.

Heavy Motor-Vehicles.

IN the series of lectures which have been given to members of the Coventry Technical Institute Engineering Society during the present session, the subject of motors and motor-vehicles has engaged a largeshare of attention. On Friday evening last week the members had brought to their attention some facts regarding "Heavy Motor-Vehicles." The lecturer was Mr. E. Shrapnell Smith, the hon. sec. of the Liverpool Heavy Propelled Traffic Association. He commenced by remarking that in Liverpool they laboured under the impression that they were badly treated by the railway companies. They were not alone in that, for other parts of the country seemed to think the same. Consequently they had devoted the last five years to endeavouring to find out whether self-propelled vehicles would convey goods for, say, distances of from twenty to forty miles more economically than did the railway companies. Passing on to speak of the nature of the problem which had to be faced, Mr. Smith pointed out the fundamental fact of the very considerable amount of power necessary to deal with loads upon common roads, especially when they had to ascend gradients. Dealing with the question of tires, he said experience had taught them that in putting these on hydraulic pressure had to be utilised. After giving some lantern views of the Liverpool trials, Mr. Smith dealt exhaustively with the question of boilers and burners. The lecture was of a most practical nature, and after its delivery there was a discussion in which several gentlemen took part. Replying to the points raised, Mr. Smith estimated the total cost of working a motor wagon to

carry four tons at 27s. 6d. per day, and there was no doubt that, at any rate in Lancashire, they would be able by motor-propelled vehicles to beat the railway companies in regard to cost of conveyance.

Plain Facts about the Automobile.

THIS is the title of a little pamphlet we have received from the Nature Study Press, of Manchester, N.H., U.S.A. It is from the pen of Mr. Albert L. Clough, and has for sub-title: A Popular Description of the Several Systems and Suggestions for Prospective Users. This sub-title clearly specifies the scope of the little work, which is written in a clear style, devoid of technicalities, and enumerates all the advantages and disadvantages of the three propulsive systems now in vogue in an impartial spirit. The special adaptations of each system are pointed out. A special chapter gives suggestions as to the selection of a motor-car. The care and housing of automobiles are also dealt with, and in the concluding chapter the author points out the advantages of motor-cars as compared with horse vehicles.

Motor-Cars for Municipal Purposes.

As we announced in a recent issue, the Beckenham District Council lately invited tenders for the supply of motor dust carts. On the opening of the tenders last week it was found that the following offers had been sent in:—Thornycroft Steam Waggon Company, £700; Bailey's, Limited, £700; Lancashire Motor Company, £555; and the Creek Street Engineering Company, £500. No orders were placed, but a Committee was appointed to inspect the cars manufactured by the Lancashire Motor Company and the Thornycroft Steam Waggon Company referred to in their respective tenders.

Motor-Car Driving Schools.

WE have already referred in these columns to the opening that exists for "motor schools," and as progress in that direction does not seem to be very rapid, we would draw the attention to all those interested in the advancement of the motor industry to the fact that the lack of knowledge and familiarity with motors is a great barrier to the use of automobiles. Every cycle manufacturer and agent knows that cycle riding schools brought them a very large proportion of their customers in the early days. Even so motor schools will make customers for motor cycles and cars. Another point is that if purchasers go through a regular course of tuition they will get more satisfaction and service out of their vehicles, which, of course, is an important consideration to both maker and dealer. For these reasons makers should lend their aid and influence to the establishing of motor schools.

THE Locomobile Company of America has sent us a copy of a new leaflet they have just got out showing the Locomobile in use in Yosemite Park, Belgium, California, Mexico, and elsewhere.

ONLY seven out of nearly four hundred applicants for motor-vehicle licences in Chicago failed to answer the necessary questions correctly.

THE *Horseless Age* of New York has just published a most interesting special number devoted entirely to the use of motor-cars for business purposes. It should do much to advance the use of automobiles in this direction in America.

A SPEED contest for automobiles fitted with motors using alcohol as fuel is to be run off between Paris and Roubaix, a distance of 268 kilometres, on Easter Monday. The course is divided into five categories, ranging from heavy cars down to motor-cycles.

OF 378 licences to drive motor-vehicles through the streets which the municipal authorities of Chicago have granted, 226 are for electric vehicles, sixty for petrol, and nine for steam propelled vehicles. The remaining eighty-three permit their holders to use either steam or petrol.

THE NICE WEEK.

THE first event on Thursday of last week was the mile race, on the Promenade des Anglais. This race, together with the flying kilomètre course, which followed it, was confined to the competitors who took part in the speed race on the previous Monday. The following were the results:—

Class A—Motor-cycles.

	Mile Race.		Kilomètre Race.	
	Standing Start.	Flying Start.	Standing Start.	Flying Start.
	m.	s.	m.	s.
Osmont...	1	22 3-5	—	42 2-5
Demester	1	27	—	44 1-5
Bardin ..	1	30	—	44 3-5

Class B—Light Cars.

Edmond (14 h.p. Darracq) ...	1	32 1-5	—	48 4-5
Marcellin ...	1	37 3-5	—	52 4-5

Henri Farman did not start, for some reason or other; whether this will disqualify him remains to be seen.

Class C—Heavy Cars.

	Mile Race.		Kilomètre Race.	
	Standing Start.	Flying Start.	Standing Start.	Flying Start.
	m.	s.	m.	s.
Werner (Baron Henri de Rothschild's 35 h.p. German Daimler) ...	1	16 4-5	—	41 4-5
Lorraine-Barrow (35 h.p. Mercédès car) ...	1	17 2-5	—	42
Serpollet (12 h.p. steam-car) ...	1	17 4-5	—	38
Decaters (40 h.p. Mors) ...	1	24 3-5	—	45 3-5
Chauchard (28 h.p. Panhard)...	1	26 2-5	—	43 3-5
Degrais (40 h.p. Rochet-Schneider) ...	1	30 2-5	—	46 3-5
Ratishauer (12 h.p. Serpollet steam-car) ...	1	32 4-5	—	46 2-5
Schneider (40 h.p. Rochet-Schneider) ...	1	44	—	55 4-5
Bernard (12 h.p. Serpollet steam-car) ...	1	44 4-5	—	60 2-5

The Henri de Rothschild Cup Race was next run off. This was over a distance of one kilomètre, with flying start, the result being:—Serpollet, 35 4-5 sec.; Lorraine-Barrow, 42 3-5 sec.; Werner, 41 4-5 sec.; Sir Knapp (M. Thorn's 35 h.p. German Daimler), 42 4-5 sec.; Prince Lubecki (Stern), 41 4-5 sec.; Mercédès (Turner), 44 1-5 sec.; Chauchard, 43 4-5 sec.; Docteur Pascal, 44 1-5 sec.; Prince Lubecki, 51 3-5 sec.; Pinson, 51 1-5 sec.; and Collomb, 51 4-5 sec.

This event over, a special series—mile standing start and flying start kilomètre race—was inaugurated for the non-placed competitors in the courses on the previous Monday. Some fast times were set up, as will be seen from the following table:—

	Mile.		Kilomètre.	
	Standing Start.	Flying Start.	Standing Start.	Flying Start.
	m.	s.	m.	s.
Béconnais (Perfecta tricycle with Soncin Motor) ...	1	12	—	39 1-5
Lorraine-Barrow ...	1	12 3-5	—	42 2-5
Baras (14 h.p. Darracq) ...	1	15 2-5	—	44 3-5
Maugin... ..	1	38 3-5	—	54 3-5
De Rothschild ..	1	38 4-5	—	46 4-5
Serpollet (small car) ...	1	40	—	49 3-5
Oury (voiturette) ...	1	40 2-5	—	59 4-5
Bucquet (Werner bicycle) ...	1	56 3-5	1	8

The Nice-La Turbie race, a contest over a hilly course of 15½ kilomètres, formed the principal event on Friday, the 29th ult. The contest was divided into seven categories, viz.:—(A) Vehicles weighing less than 250 kilogrammes; (B) cars weighing between 250 and 400 kilogrammes, and carrying two persons; (C) cars weighing between 400 and 600 kilogrammes, and carrying four persons; (D) two-seated cars weighing more than 400 kilogrammes; (E) four-seated cars weighing between 400 and 1,000 kilogrammes; (F) six-seated cars weighing over 1,000 kilogrammes; and (G) steam and electric cars.

Series D was sent off first, at minute intervals, in the following order:—Chauchard, Lemaitre, Lorraine-Barrow, Werner,

De Caters, Pinson, Schneider, Degrais. Then came series G:—Ratishauer, Bernard, and Serpollet, all on Serpollet steam-cars. Series A followed, the starters being:—Portal, Béconnais, Gleizes, Bucquet (Werner motor-bicycle), Bardin, Osmont, Bensa, Demester, Cormier. The starters in series C, which came next, were:—Rudeaux, Cuchelet, Kreutler, Koechlin, Ravenez, and Cornilleau. Series E was next despatched, Barbereau, Katzenstein, Rigoullot, and Braun starting. Then came series F, with Sir Knapp (Thorn), Collomb, De Turckheim, and Durand. Series B was the last to be got away, the competitors being Baras, Marcellin, Farman, Edmond, Pietrasanta, Théry, Boyer, and Oury.

The route was lined with spectators, particularly at the Montée du Pin, where the grade is about 1 in 10. The results, according to the official classification, were as follows:—

Series A.—(1) Béconnais, 17 min. 21 sec.; (2) Gleizes, 18 min. 40 3-5 sec.; (3) Osmont, 19 min. 2 4-5 sec.; (4) Bardin, 20 min. 33 1-5 sec.; (5) Demester, 21 min. 56 3-5 sec.; (6) Bensa, 23 min. 27 1-5 sec.; (7) Bucquet, 27 min. 34 4-5 sec.; and (8) Portal, 34 min. 7 4-5 sec. Cormier did not finish.

Series B.—(1) Baras, 19 min. 40 2-5 sec.; (2) Edmond, 20 min. 38 1-5 sec.; (3) Boyer, 22 min. 37 4-5 sec.; (4) Oury, 30 min. 22 2-5 sec.; (5) Théry-Duanip, 33 min. 12 4-5 sec.; and (6) Ferber, 45 min. 38 1-5 sec.

Series C.—(1) Koechlin, 28 min. 35 4-5 sec.; (2) Rudeaux, 30 min. 10 sec.; (3) Ravenez, 41 min. 17 4-5 sec.; (4) Cuchelet, 45 min. 49 sec.; (5) Cornilleau, 1 hr. 7 min. 4 4-5 sec.

Series D.—(1) Werner (Mercédès), 18 min. 6 1-5 sec.; (2) Lemaitre (Mercédès) 18 min. 49 3-5 sec.; (3) Chauchard (Panhard) 19 min. 2-5 sec.; (4) Pinson (Panhard), 22 min. 4-5 sec.; (5) Degrais (Rochet-Schneider), 23 min. 19 1-5 sec.; (6) Schneider (Rochet-Schneider), 24 min. 44 1-5 sec.; (7) Lorraine-Barrow (Mercédès), 42 min. 45 1-5. De Caters did not finish.

Series E.—(1) Katzenstein, 28 min. 20 sec.; (2) Braun (Pinson), 33 min. 6 sec.; (3) Rigoullot, 35 min. 32 2-5 sec.

Series F.—(1) Sir Knapp, 21 min. 46 sec.; (2) Collomb, 28 min. 35 1-5 sec.; (3) De Turckheim, 30 min. 32 2-5 sec.; (4) Durand, 31 min. 37 3-5 sec.

Series G.—(1) Serpollet, 24 min. 11 3-5 sec.; (2) Ratishauer, 30 min. 54 1-5 sec.; (3) Bernard, 44 min. 40 2-5 sec.

Levegh's record of 19 min. 2 sec., established last year over this route, was thus lowered by Werner to 18 min. 6 sec. In the motor-cycle class Béconnais established a new record, 17 min. 21 sec., as against 20 min. 10 sec. by Gasté last year, while in the light car class Théry's 1900 record of 31 min. 21 sec. was lowered by Koechlin to 28 min. 35 sec.

A *concours d'elegance* took place in the afternoon at Monte Carlo, while in the evening there was a grand procession of decorated and illuminated cars.

On Sunday last the Coupe de Nice race was run off. The course was Nice-Cannes-Le Luc-Brignoles-Le Val-Carces-Lorgues, Draguignan-Frejus-Nice, a distance of 264 kilomètres. The Coupe de Nice is a challenge cup, and was held by the Nice Automobile Club, who selected Messrs. Chauchard, Pinson, and Stead to defend it against the challengers—the Moto-Club de Lyons, who chose Messrs. Schneider, Marge, and Collomb to represent them. At the starting point, however, only Messrs. Collomb, Chauchard, and Pinson turned up, the latter abandoning almost at the start. Little interest was shown in the race, which proved an easy victory for M. Chauchard, so that the cup still remains with the A.C.N.

A CYCLE and motor-car show opens at Lille, France, to-day, the 6th inst., and runs to the 21st inst.

AT the last meeting of the Westmoreland County Council a letter was read from the East Suffolk C.C. suggesting an amendment in the law relating to the speed of light locomotives, and the clerk said the effect of the proposed amendment was that motor-cars would be limited to ten miles an hour instead of twelve, and that there should be continuous and sufficient warning of approach. The letter was referred to the Main Roads Committee for consideration.

THE RENAUX LIGHT CAR.

WE are this week able to publish illustrations of the light car lately brought out by the Société L'Energiee of Paris, and which attracted so much attention at the recent Paris Automobile Exhibition. The vehicle is not a voiturette, but really a small car of very robust make and with a long wheel base, allowing plenty of room for four passengers, and not cramping them as in the ordinary voiturette. The frame, which is of tubular construction, is built low and carries the whole

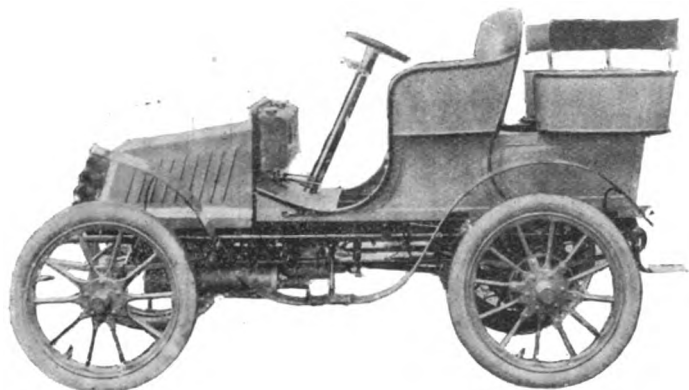


FIG. 1.—GENERAL VIEW OF RENAUX LIGHT CAR.

of the motor and transmission gear, so that any type of body can be fitted, Fig. 1 showing a *tonneau*. The motor is a two-cylinder Buchet developing 8 h.p.; it is located under a bonnet in the fore part of the frame. The ignition is electrical and the cylinders are of course water-jacketed. A geared pump maintains the water circulation, in connection with which a radiating coil is fitted in the front of the bonnet. Three forward speeds and one reverse are provided, all controlled by one lever; the third

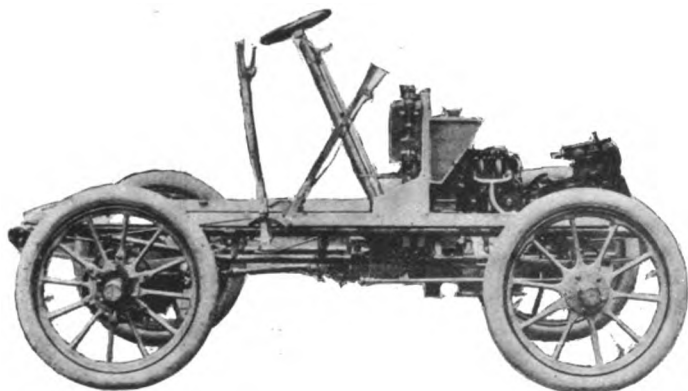


FIG. 2.—VIEW OF FRAME OF RENAUX LIGHT CAR.

speed is direct-acting, and by this means a considerable amount of loss by friction is avoided. There is the usual clutch between the engine and the intermediary shaft, but this clutch is worked in and out by means of a four-threaded screw, so that all jerk is avoided. From the change-speed gear box to the rear axle the motion is transmitted by a shaft with universal joints and bevel gearing. Steering is controlled by an inclined hand-wheel, while the road wheels are of wood, 31½ in. in diameter and shod with pneumatic tires. The weight of the car complete is about 9 cwt., and its width and long wheel base make it very stable. A speed of 34 miles per hour on the level has been attained by a car of this type, and its hill-climbing qualities are unrivalled—it holds the record of the famous hill of Gaillon, and has beaten all previous records by 16 seconds.

WE have received a copy of the Reading Automobile Club's Handbook for 1901, from which we learn that the Club will organise a non-stop run and hill-climbing contest during the coming summer.

CORRESPONDENCE.

MORE ROOM WANTED.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I am anxious to obtain a motor-car to carry four, and have been to several of the dépôts, but so far have failed to find anything to suit my requirements. At present there seem to be principally three types—the large Daimler type, the voiturette and the Benz type. The first of these, owing to the heavy cost, is out of the question, except for the wealthy. Many of the voiturettes of about 5 h.p. appear very satisfactory except that the seating accommodation in the *tonneau* or other form of back seat is absurdly inadequate, in most cases only big enough to carry two children. Of the Benz class there are several which would carry four comfortably, but to my mind this type is open to serious objections.

Will not one of the many firms in this country now taking up the motor business give us a car with engine in front, gear driven, about 5 to 6 h.p., with comfortable accommodation for four passengers? The increased size of the body required could not increase the weight more than about 20 lbs., and such a car at from 200 to 250 guineas would probably find a ready market. Perhaps the greatest attraction of a motor-car is the possibility of going long distances, and for this purpose it is essential to have a seat of comfortable size with a fairly high back to it.—Yours truly,

C.

ACCUMULATOR AND DRY BATTERY PUZZLES.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—The following may interest some readers, who may be able to explain the variation of action in accumulators. I have two batteries, each 4 volts—call No. 1 and 2. On the first day, (car not run) No. 1 showed 4½ volts, and more ampères than the meter would give; No. 2 showed 4 volts, 6 ampères, both at separate times, connected up, and volts taken at terminals. On second day No. 1 showed 3½ volts, 12 ampères; on third day, 4½ volts, 3 ampères. Thinking this must arise from a short circuit I examined all wires, cleaned the terminals, and recharged cells; still I found the same variation occurred on different days, the battery not connected.

Then again I have a dry battery, which ought by now to be on the scrap heap, showing after runs of more than 1,000 miles, 2 volts, 3 to 4 ampères, and it still gives better or as good ignition as accumulators showing over 4 volts. I could understand it if the temperature had altered considerably, but in this case the mean is 40 F. Further, it has been my experience of dry cells that those charged in winter months last longer than those charged in summer. A dry battery charged in February is one alluded to here.

Is it not a pity that a universal thread is not used on all engines, or that the manufacturers do not make sets to supply purchasers of cars? I am quite willing to go to an expert when in real trouble, but it is annoying to send for one to put in a screw.

Yours truly,

AUGUSTUS KENT.

GEARS AND IGNITION FOR MOTOR-QUADS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I see in your issue of the 30th ult. that Mr. G. T. Taylor advises me to try a 22-tooth pinion wheel on my Allard quad. I was under the impression that you must reduce the number of teeth on the pinion, giving more revolutions to the motor engine, to obtain power for hill-climbing. I should be pleased if Mr. Taylor would explain how he obtains more power by doing this.—Yours truly,

CHUM.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Before "Chum" makes any alteration whatever to his quad, I should advise him to consult Mr. F. Cox, Swanley Junction, Kent. My Allard tricycle had the same complaint as "Chum's"

appears to have, but Mr. Cox made it mount the hills very much better and give a greater speed on the level without alteration to the gear. He tells me he would not answer the letter himself as it would appear as a sort of advertisement, and he also tells me that mine is not the first Allard he has improved.—Yours truly,
MAN OF KENT.

6 H.P. PANHARD CAR.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I notice in your issue of March 30th, that a correspondent signing himself "Phoenix" wishes for information as to 6 h.p. Panhard cars on the following points, i.e., (1) their wearing qualities; (2) how many miles gear will run without renewing; and (3) how long piston rings, chains, and sprockets last. Now, I do not wish to take up much of your valuable space, but as I am a private user, and have had in all eight cars and tricycles within two years, I can speak from good practical experience as to my last and best car, a so-called 6 h.p. Panhard, which I have used almost daily for nine months. I say "so-called 6 h.p.," because it gives off over 8 h.p., and is geared up to thirteen teeth on the chain sprockets.

The wearing qualities of the Panhard car are all that could be desired. The time the gear will last and the mileage that can be covered without renewing any part of it is easily answered. "It is the hand that manipulates the lever for changing the speeds that will be solely to blame if the gears wear out before many thousand miles have been covered." Care in driving tells the tale. I am having my Panhard overhauled, after using it since last June almost daily, and if your correspondent "Phoenix" is in London, and will communicate with me through your valuable journal, I will with pleasure take him to Mr. Wellington, 36, St. George's Square, Regent's Park, N.W. One look, and he will see the gears are as good as the day they were first fitted. My piston rings also have never been renewed, and the compression on my car is, as my mechanic remarks, tremendous—that speaks for itself.

I have had one new set of chains, and these should last a considerable time, provided they are taken off about every three weeks, and placed in molten Russian tallow and graphite mixed; this will keep the chains in splendid condition, and they require little or no lubrication. My sprockets are in perfect order. The distance I have travelled exceeds 9,000 miles.

Give care and proper attention to the car, also in driving, for in the latter especially lies the secret. And, lastly, treat the car as you would a valuable horse, and do not expect it to run for ever, and never on any account interfere with the engine, or grind in the valves, until they really shows signs of needing this. Mechanics are very fond of laying the car up for a day or two on the pretext that the valves must want doing, simply because they have not been done for some weeks, but now I always wait until I find by experience that they require it. My motto with regard to the motor itself is, "Leave well alone."—Yours truly,
JOHN D. HILL.

3½ H.P. ALLARD CARS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Can any of your readers oblige me with information of the 3½ h.p. Allard Rapid car as to the wearing qualities and of its engine power; whether it is a good reliable vehicle, and also the cost of running per mile?—Yours truly,

SECOND.

THE LOCOMOBILE STEAM CAR.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I shall be glad if any of your readers can tell me how the "Locomobile" works in practice, and if there is any special trouble with either the boiler (furring) or the oil supply? What is the actual oil consumption on average roads per mile?

I am now wavering between a De Dion voiturette and a "steamer"; the one noisy, economical, and far-travelling; the

other silent, costly (I fear) in running, and requiring stoking every twenty-five miles—at least I presume so.—Yours truly,
"NOVICE."

MAIDENHEAD BRIDGE TOLLS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I am glad to notice in your last issue that you refer to Mr. Taylor's agitation against the tolls levied on Maidenhead Bridge, which connects Berks and Bucks, and is on the main road to Bath. Believing Mr. Taylor will have the support of every user of a motor-car, I venture to ask for your influence in giving publicity to our object—that of freeing the King's highway.

This is a matter that affects all automobilists, as success in one instance should materially affect all tolls throughout the country. Mr. Taylor has taken up the case in a public-spirited manner, and will, if supported, carry it through. With a view to obtaining such support may I appeal through your columns to any motorist willing to assist? I shall be pleased to forward a copy of a pamphlet on the question drawn up by Mr. Taylor, and also to receive any offers of assistance.

Thanking you in anticipation for inserting this, yours faithfully,
Slough, Bucks.

J. FULLBROOK.

MR. C. P. COBB writes that in his letter published in last week's issue "without igniting the plates" should read "without injuring the plates."

A KILOMETRE race is to be run off on the 21st April, under the auspices of the Antwerp Automobile Club.

At the Moto-Club de Belgique in Brussels on Saturday last M. de Meuse, of the Pieper Company, gave an interesting address on "Carburettors and Methods of Ignition."

MR. GOULD, of Barry, South Wales, has decided not to run his motor-wagonette for public service any longer, owing to the continued persecution of the local authorities. He finds greater pleasure in using the car privately.

WE are requested by the Committee of the Automobile Club to remind members that entries for the Petroleum Spirit Trial of Saturday, the 13th inst., should be in the hands of the Club Secretary not later than Thursday next, the 11th inst., at 12 o'clock noon.

MR. MICHAEL MOYLE was brought up before Mr. Mead at the Thames Police Court on 26th ult., by the police, for driving furiously. They swore the pace at which he was going to be between fifteen and twenty miles an hour: one constable declared that he had never seen anything go so fast on the road before. After a severe fight the case was dismissed; Mr. Staplee Firth defended.

THE Right Hon. J. H. A. Macdonald, K.C.B. (Lord Justice Clerk of Scotland), has consented to take the chair at the Automobile Club dinner, which, by permission of the management of the Sheen House Club, will be held at Sheen House Club on Saturday, the 13th inst.

A FEW days since our attention was drawn by the Automobile Manufacturing Company, of Long Acre, W.C., to a remarkably small and compact lifting jack, for which they have the agency. The length is just about one foot, and the weight about 2 lbs. The jack has a screw action, is very easy to work, and will lift a Darracq voiturette, as we saw for ourselves, without any trouble. The same firm are also introducing a new acetylene lamp, somewhat similar to the Bleriot, but smaller and lighter, and which they claim gives as good a light.

HAVING noticed that many new purchasers of automobiles who have occasion to use accumulators meet with these articles for the first time, and have naturally the most vague ideas of what an accumulator or storage battery is, and how it differs from the dry cells or primary cells generally, Messrs. Peto and Radford, Limited, have got out a little pamphlet on the subject, which explains accumulators without unnecessary technical detail. The firm will be pleased to send a copy to any of our readers on application.

Building a Racing Motor-Car.

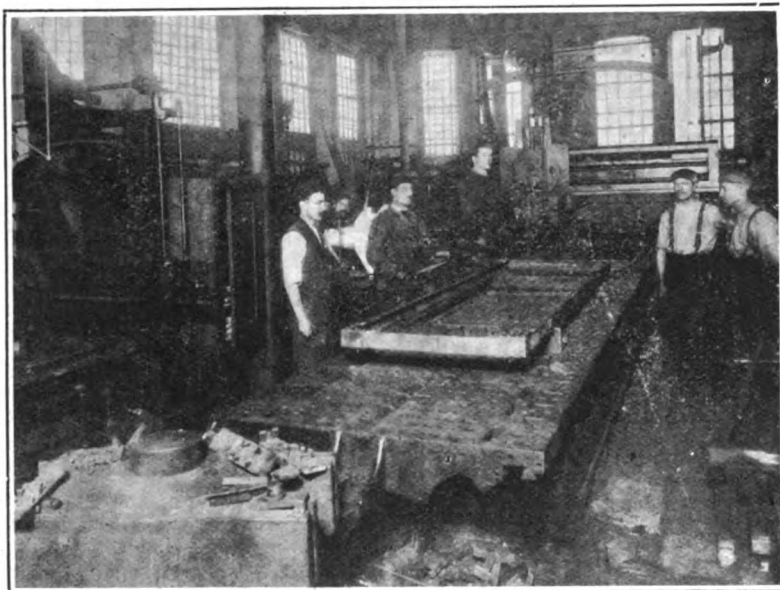
THE ENGLISH CARS FOR THE GORDON-BENNETT CUP RACE.



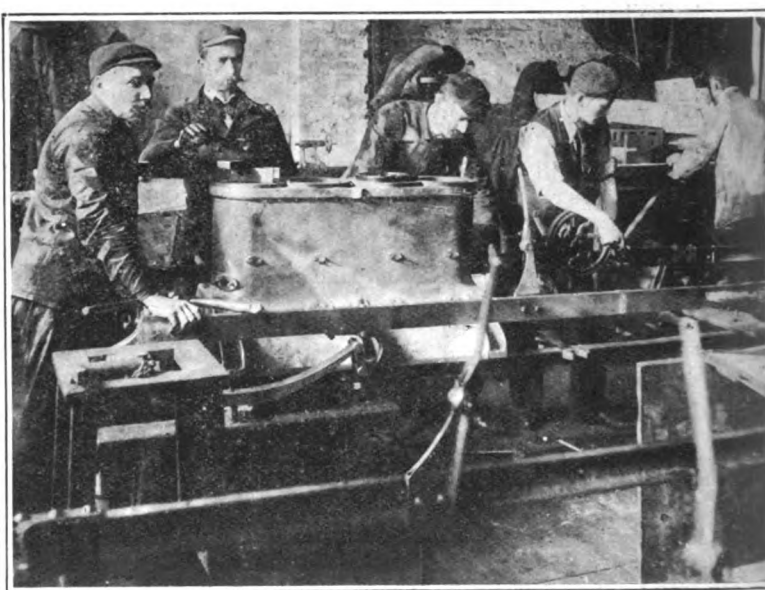
THE Gordon-Bennett race is the Derby of the Automobile World. It derives its name from Mr. Gordon-Bennett, the well-known American, who gave a valuable trophy to the Automobile Club de France to be raced for annually, and who desired it to be known as the International Challenge Cup, a wish that has hitherto not been complied with, for as the Gordon-Bennett race it has been popularly known and it is likely will continue to be. It is an international event, every country being able to send three selected and accepted cars, which cars must have been made throughout in the country they represent. The course, from Paris to Bordeaux, is a long and trying one. The fastest time accomplished in the Gordon-Bennett race last year, when the course was from Saint Cloud to Lyons, averaged out at a speed of thirty-eight miles per hour for over twelve hours. When one reflects for a moment that this

to make an effort to bring the trophy to these shores. To build a racing motor-car with a view to win a race of this description is quite as serious, perhaps even more serious, a matter than building a yacht, say, for the America Cup. Details are more numerous, there is less previous experience to go on, and since every part has to be English made to comply with the rules of the contest, and we are yet young here in automobile construction, many difficulties arise and delays occur, and, in fact, it takes nearly a year to complete a car. Needless to say, everything has to be the best obtainable, regardless of cost, one slight bit of false economy, one case of undiscovered scamped work, might cause a terrible accident, indeed the possibilities of a collapse when travelling at the rate of close upon 100 miles an hour are too great for contemplation.

So little is generally known as to how a racing motor-car is



PLANING THE FRAME.




FITTING ON THE 50 H.P. MOTOR.

prolonged high speed is maintained a whole day over highways and through towns and villages with their attendant obstacles, and that each car is driven from start to finish by the same driver, it will in some degree be realised what a fierce contest it is, and how terrific the strain both on the cars and their helmsmen.

For this year's race, on May 29th, three countries only will compete—England, France and Germany—Belgium and the United States, previous contestants, standing down. Each country competing can only have three starters, and as, for England, four Napier cars and one Motor Manufacturing Company's have been entered, it is necessary to have an eliminating contest, which has yet to be held. The four Napiers have been ordered by Count Zborowski, an English gentleman with a Polish title, the Hon. C. S. Rolls, Mr. Mark Mayhew, and Mr. S. F. Edge, and will be driven by them. The driver of the M.M.C. car is as yet uncertain. France will be represented by two Panhard and Levassor cars and a Mors, and Germany by a Cannstatt Daimler, a Canello-Durkopp, and a Benz.

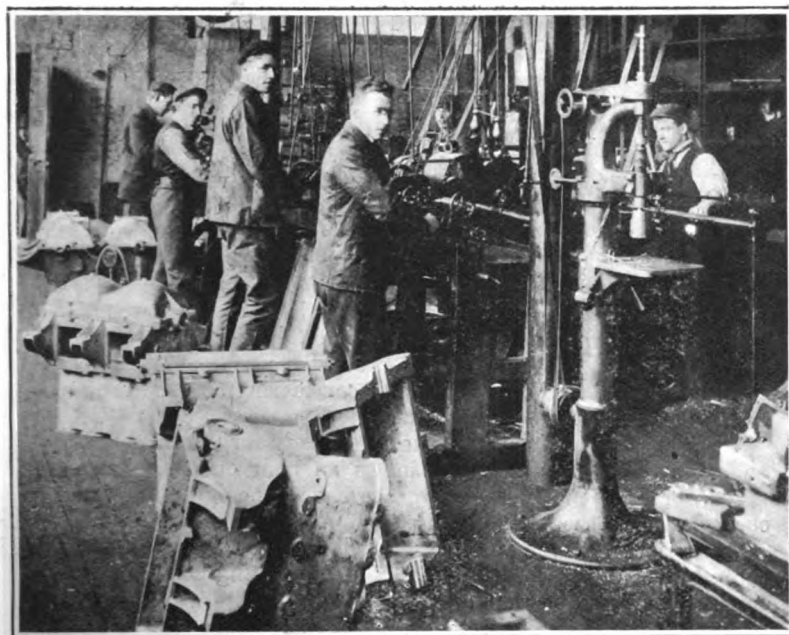
The race this year has particular interest to Englishmen, since it is the first time cars manufactured in this country have been obtainable with sufficient speed power to warrant gentlemen

made, and how it slowly grows from a seemingly meaningless mass of steel and aluminium and gear wheels into a thing of wondrous power if not of outward beauty, that some hitherto unpublished details will doubtless be of interest. The majority of the cars being built to fight for England were designed for 50 h.p. motors, but the latter develop on what is known as the brake test 70 h.p., and it is the building of these speed giants that we will now briefly describe, our description in the main being, of course, equally applicable to the M.M.C. car.

The first thing required for a car is its frame, as it is to this that the motor itself, gearing, steering, axles, etc., have to be fitted. The frame is made of English channel steel, the name "channel" being derived from its shape, thus . Joined firmly together, the frame is carefully and slowly planed on a huge metal planing machine so as to get it absolutely true in every direction, a most essential thing where ultimate perfection is aimed at, but as the process takes about a week to perform, it is only in the case of expensive cars that we find it done.

The frame having been finished and tested by delicate measures and proved, big massive thing though it is, to be as true as an apothecary's scale, the springs are bolted on and then the axles. These axles are not particularly heavy, but they have

a goodly weight to carry, and as a broken axle at a speed of ninety miles an hour is a thing not to be risked, the forging of axles is one of the most important operations. When they arrive at the big steam hammer they are three pieces of good, honest metal; when they depart, after a brilliant pyrotechnic display of



LATHING THE ALUMINIUM CASTINGS—CASTINGS FOR 50 H.P. ENGINES IN FOREGROUND.

sparks, these three pieces are one, and in their unity attain a strength far above even what is required of them.

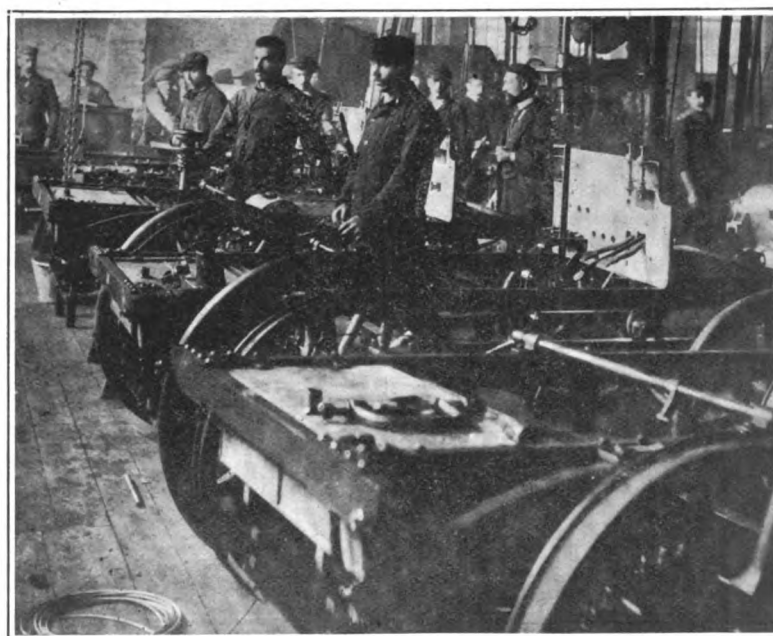
No special process is adopted with regard to the springs, but in making the wooden artillery wheels for these big racing cars extraordinary care is taken. The spokes are made from the true English oak. The tree after felling lies for a year where it fell to allow the sap to evaporate. It is then quartered and cleft into suitable pieces for spokes, and these pieces have to be stacked for several years until they are thoroughly and naturally seasoned. After this long and patient preparation the actual making of the spokes is quickly accomplished by two machines. The rim of the wheel is made of specially selected ash, free from knots, also kept a long time to thoroughly dry; and the steel rim that receives the pneumatic tire finishes the wheel proper. But there is yet the big 5in. pneumatic tire to be fitted, made of pure rubber and flexifort material, and it can be understood that by the time all is accomplished, the wheel is a somewhat costly item—indeed the pneumatic tires alone cost over £100 the set. But now the wheels are on the frame, which for the first time assumes the appearance of a vehicle, and being easily moved about the factory, the process of fitting the motor and gearing is commenced.

The motor itself is, of course, the all-important thing in a racing car, for there the power is developed that is capable of propelling at times the heavy vehicle over an ordinary road at a speed never attained by a locomotive over its carefully prepared and graded track. The cars that will fight for England in the great International event have four-cylindere motors, in other words they have four separate motors coupled together and working in unison. The "liners" are not made of steel, as might be supposed, but of cast iron, the reason being that this metal is not so liable to "seize" as engineers term the overheating of the cylinder, and also, being a metal with a finer grain than steel, it polishes better. This polishing of the cylinder takes five days to accomplish and is done with emery and oil. When it is mentioned that the pistons in these cylinders move up and down at from 760 to 1,100 times a minute, the necessity of their being perfectly true and as smooth as plate glass will be appreciated. The four cylinders being made are forced into a bed of

aluminium weighing 260 lbs. There they are tightly and solidly held, and, thanks to their expensive bed this remarkable result is attained, that the weight of the completed motor works out at 10 lbs. per horse power, the lightest engines that have ever been constructed.

Probably the next in importance to the motor proper, in the sight of the expert critic of a racing motor-car, is the crank shaft. This starts its career as a solid block of steel 4 ft. 6 in. long. With a powerful machine metal saw a rough semblance of a crank shaft is first hewn out, and then begins the long and painfully accurate process of lathing the seven bearings that the crank shaft carries. Each one of these seven bearings must be absolutely true in relation to every one of the other six, and all the while it is equally required that every part of the shaft should balance perfectly in weight. An inaccuracy no greater than the thickness of a piece of brown paper would represent the loss of about five horse-power in ultimate results, and therefore the most minute error in cutting condemns a crank shaft in spite of the three long weeks of continuous expert labour that has been spent in its creation.

The gear wheels for the gearing are made, as all gear wheels now are, by wonderful machines that cannot err, and we need only mention that they are cut out of solid forged steel and run continuously for five days in a bath of oil and hardened emery, in order to bring them to a glass-like polish before being fitted to the cars. In cars of the class we are describing much is hidden away, and is quite unsuspected by the casual observer. For instance, there are no less than fifteen roller bearings, eight in the wheels, the rest on the various shafts. These roller bearings are made up of a number of small rollers like thin lead pencils, each running in a bed of its own. They are essential for speed purposes, and, costly though they be, they are fitted. As in other parts of the car most minute accuracy is insisted upon, even in these roller bearings each roller that is more than a quarter of a thousandth of an inch out being rejected. It is as if they were intended for some small and costly chronometer rather than a great racing car. In addition to the roller bearings some ball bearings are used, notably in the steering (which, by the way, is as light to handle as a bicycle) and for the hubs of the wheels



FRAMES OF RACING CARS READY TO RECEIVE MOTORS.

to bear against when turning corners, so that speed even then shall in nowise be affected.

Having now seen the frame made and the engine, the speed-changing gear, and the wheels fitted to it, there remains one more link of leading importance, the means by which all

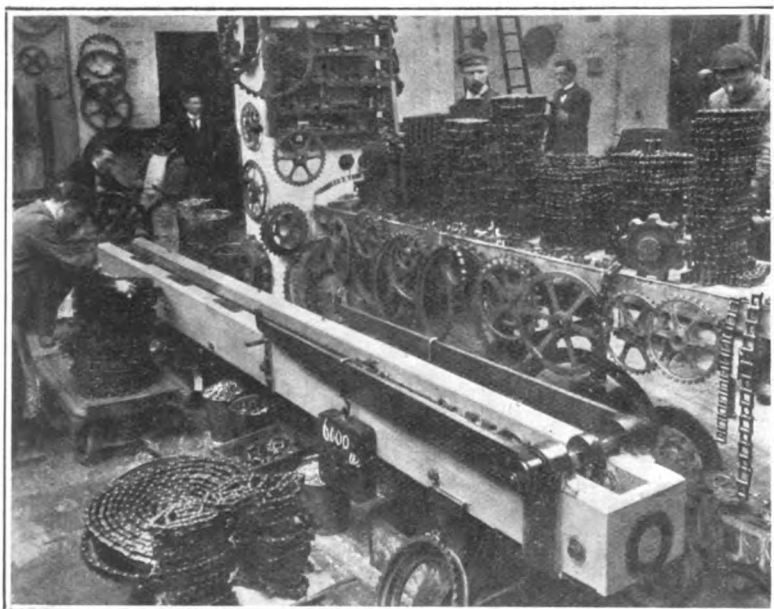
the power generated in the motor is conveyed to the road wheels. In different cars different means prevail; in the case of the cars that will fight for England the transmission is by gear wheels and chains. The chains are tested before being fitted to the car for a breaking strain of ten tons. Each chain used has 270 separate parts in it and takes seven days to make, having to go through



MAKING WHEELS OF ENGLISH OAK AND ASH FOR RACING CARS.

processes obviously impossible to describe here, since they are sixty in number. Accuracy in measurement of every part of the chain is insisted on, for an inaccuracy affecting the length of the link is multiplied by as many links as there are in the chain.

As may be supposed, in the case of a car that is expected to be called upon to average fifty to sixty miles an hour and at times



TESTING THE DRIVING CHAINS FOR RACING CARS. CHAIN IN PICTURE IS BEING TESTED UP TO A STRAIN OF 6,000 LBS.

to travel at possibly one hundred miles per hour, for over twelve hours at a stretch—a trial no locomotive has ever been called upon to bear—much thought is expended on its lubricating and also cooling arrangements. Every bearing on the car, except in the wheels, is fed continuously from what is known as a "sight-feed" oil tank, being conveyed from thence to each bearing by a separate

copper tube, the whole forming a perfect net work of tubes, running off in all directions like wires from a central telephone exchange. The engine lubricates itself by a force pump of its own working, so that the faster it goes and the more food it requires, the more it ladles out for itself from the oil tank into its parched and fiery mouth.

As for the cooling, a water pump, as long as the engine is running, keeps forcing 200 feet of water every minute up to the engine, circulating round it in a frigid embrace, away to the radiators, racing round and round the long lengths of copper pipes, smothered in radiating gills of tin, and thus, cool and refreshed, flow back to the pump ready for the same useful round of work again. There are many details in the process of building these mighty speed kings of the road that space will not permit us to detail, such, for instance, as the four powerful brakes, water-cooled, or they would otherwise fire when pulling up a vehicle travelling at fifty miles an hour; the electric spark that ignites the charges whose explosions provide the motive force for the engine; the body, etc., etc.; but enough has been said to show that the building of a motor-car worthy to fight for England is no light undertaking, and, incidentally, to what perfection motor-car building has reached in this country, considering how few are the years of experience that have gone before.

And so the cars are finished and ready for the fray, ready and able to run seventy-three miles an hour on their normal speed, or on being pressed, by advancing the ignition, which corresponds to the forced draught of a steam boiler, to run at over 100 miles an hour. May they have good fortune in the contest of giants and worthily uphold the sporting honour of the country they were made in.

THE hill-climbing competition between Neuwaldegg and the Exelberg has been fixed by the Austrian Automobile Club for May 5th next.

AN automobile race meeting is to be held on the track of the Renn Club, at Frankfort-on-the-Main, on July 29th next; it is being organised by the Frankfort Automobile Club.

THE U.S. Secretary of State has been requested by the District Commissioners, Washington, D. C., to assist them in securing information relative to the regulation of the speed of automobiles in the cities of foreign countries.

A NOVELTY shown at the recent Paris motor exhibition consisted in a pinion with movable teeth. By means of a rack which may be displaced inside a series of pinions, the teeth of the latter may be withdrawn below the surface and the pinion and its corresponding gear thus disengaged.

THE Olds Motor Works, of Detroit, Mich., have sent us a copy of a tastefully-prepared little catalogue they have lately issued. Both petrol and electric vehicles are among their product; the new petrol light runabout particularly is attracting a great deal of attention. It is a powerful little machine, fitted with a 4 h.p. engine. The electric vehicles, which are built in several styles, are exceedingly handsome in appearance, specially adapted for town use.

THE Panhard cars taken over to the United States by Mr. J. W. S. Langerman, and seized for alleged false valuation by the owner, have been appraised by the Customs authorities at £1,442. One is of 12 h.p., seating four, and the other of 8 h.p., seating four. In accordance with law the United States Court has been notified of the seizure, and if the owner does not contest the case within about a month the Court will order the United States marshal to sell them. The sale must be advertised three weeks in advance.

MR. MARTIN DODGE, director of the Office of Public Road Inquiries of the United States Agricultural Department, will shortly take a party of eight experts over the old National Road, from Washington to Springfield, O. They will travel in a motor-car, the object of the trip being to learn the present condition of the National Road. If the roadway is in a fair state of preservation Mr. Dodge will seek to have it improved and converted into a model highway for motor-vehicles and for practice cavalry marches.

SIDE-SLIP.



THE only source of lack of control in an automobile which cannot be entirely got rid of is that which gives its title to this article, a risk which with the increase of speed and the accompanying necessity for pneumatic tires has grown in importance. It may, however, be partially avoided, and its effect minimised, by suitable design, and a short consideration of the principles involved will throw some light on the direction in which this should be attempted.

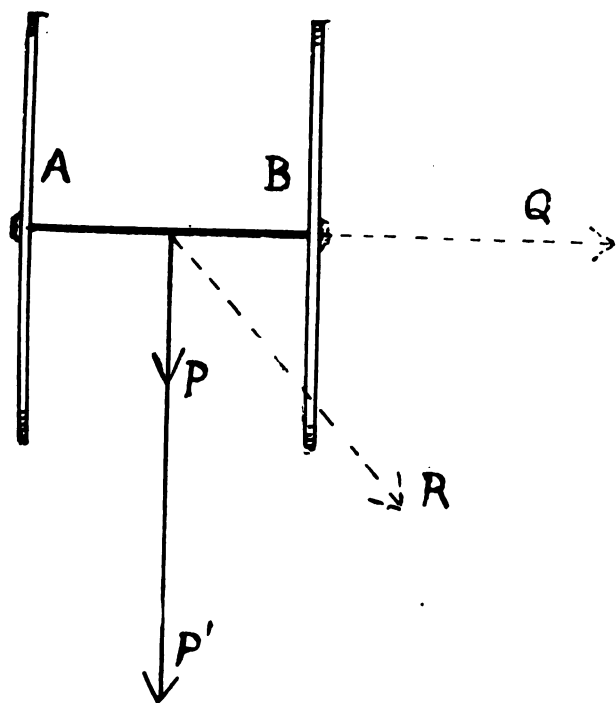


FIG. 1.

The ability to steer any vehicle depends on the fact that while the rolling friction of a wheel is small, its resistance to sideways motion, which involves sliding friction, is large, and is unaffected by the former motion; if therefore the latter resistance can be increased, it will be one means of attaining the desired end. Unfortunately this seems difficult, and may be left for later consideration, the more important problem, as to the effect of car design on side-slip, the resistances being given as usual with ordinary tires, being first discussed.

Let A, B (Fig. 1) be a pair of wheels on an axle, which a small force P is sufficient to draw along a level surface, and suppose a much larger force Q, which is yet insufficient to skid the wheels sideways, to be applied at the end of the axle. When the force P is applied, it will draw the wheels along in a straight line, quite unaffected by the force Q.

If now the wheels be supposed locked, as by a powerful brake, a much larger force, say P', will be needed to drag them forwards, and when it does so (Q remaining the same), the motion will be somewhere in the direction R, the force Q, inoperative as long as the wheels roll, producing its effect as soon as sliding motion is started by the force P. From this it appears why the application of brakes tends to cause side-slip, and it may be added that sufficient driving force to cause the wheels to slip would do so equally, and though this is never important, it may sometimes be noticed when driving up a steep, greasy hill.

In the case of a four-wheeled car (Fig. 2) the force Q is due to the inertia of the car, when turning a corner, tending to carry it in its original line of motion.

It obviously acts at the car's centre of gravity, and when—as usual—this is nearer the back axle than the front, tends to swing the back round. This tendency might be diminished by having the weight evenly divided between the wheels; but as it

is less risky for the rear than the front wheels to slip, the usual position of the chain gear is preferable. Moreover, while the tendency of the car to slip as a whole cannot be altered by any variation of design, its tendency to rotate diminishes with the length of wheelbase; it will be sufficiently obvious that, given two cars on a greasy asphalt surface, one of short and one of indefinitely long wheelbase, but otherwise equal, they will offer equal resistance to being moved bodily sideways, but the longer one will offer an indefinitely greater resistance to being twisted out of its course.

Also, to move the car bodily requires the resistance of all four wheels to be overcome, while to divert its course only needs that of two; it is fortunate, therefore, that the latter can be obviated by lengthening the wheelbase, while the former, a less dangerous fault, can only be modified by in some way giving the tires a better grip of the road.

The tendency here described was notably exemplified in the Bollée, where the small adhesion of the single rear wheel was aided by the weight of engine and accessories, carried far to the rear, and aggravated by the short wheelbase. It will be noticed that the effect of increased weight causing increased adhesion on the back wheels is here neglected: it actually seems to be negligible compared with the effects above described, though the reason for this is rather obscure; it is probably, however, to be sought in the fact that slip is only noticeable on wet and muddy roads, where the friction cannot be taken as increasing with the weight. So far, then, as design goes, the adoption of a long wheelbase, and chain gear somewhat, but not too far, behind the centre, appear the only methods for securing stability in steering, and the only remaining point to dwell on relates to the tires. Iron tyres, though having a low coefficient of friction with the road, did not seem to be liable to slip; and though high speeds were obtained on them in the early steam-carriage days, no mention of it occurs to the writer's knowledge. Solid rubber tires do not slip, except on asphalt or hard roads with thick mud thereon. Pneumatics, of course, are the chief offenders, and the reason is, apparently, that they present too large a surface to the road to penetrate through mud to the solid surface below. It would, therefore, seem that small wheels are preferable to large ones, as the devices for increasing grip by a rough surface, successful on cycles, are so far useless with heavy loads. There is, moreover, a pseudo-slip due to the roll of the tire on the rim, which might be roughly estimated by the comparison of a pneumatic with a solid or practically solid tire of

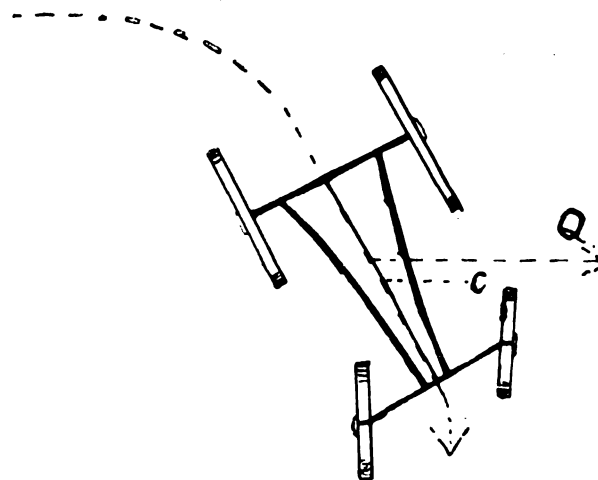


FIG. 2.

similar dimensions, such as the Falconnet-Perodeaud, which should be comparatively free from this; but until some means are found of endowing the pneumatic with a tread capable of penetrating mud and gripping the road surface, it is difficult to imagine any palliative other than that obtainable from the design of the car.

R. W. BUTTEMER.

LA COMPAGNIE FRANCAISE'S 6 H.P. "TONNEAU."

La Compagnie Française des Cycles et Automobiles, 7, Rue Darboy, Paris, have recently introduced a new four-seated *tonneau*. Fig. 2 gives a plan of the frame, from which it will be seen that the engine is located at one side, at about the centre. The motive power is provided by a 6 h.p. Onfray single cylinder

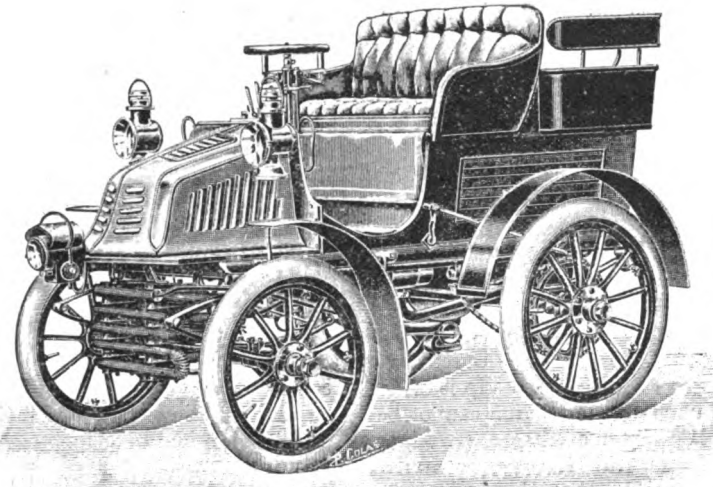


FIG. 1.—GENERAL VIEW.

horizontal engine (Fig. 3), fitted with electric ignition, using the De Dion plug; the cylinder is water cooled, the circulation being maintained by a centrifugal pump actuated by friction on the fly-wheel of the motor. The valves are of relatively large size, as is also, it will be noticed, the exhaust box or silencer,

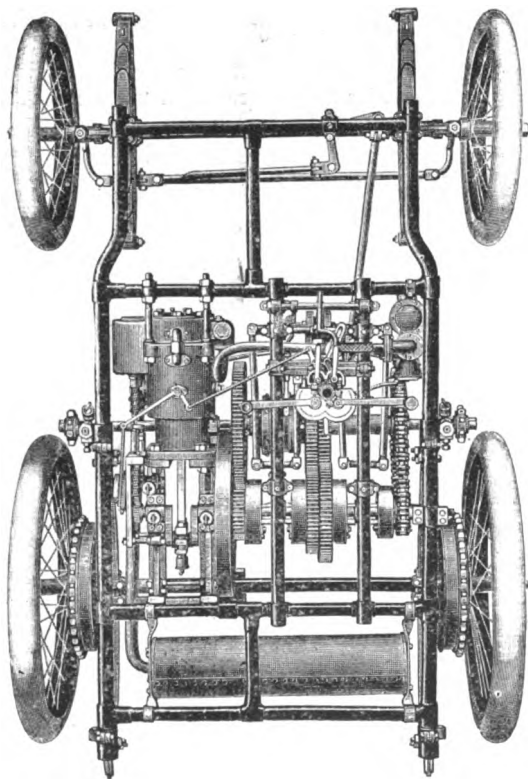


FIG. 2.—PLAN OF FRAME.

which is located at the rear of the tubular frame. The carburettor is of the Longuemare type. As regards the transmission, three speeds forward and a reverse motion are available. From the motor shaft the power is transmitted to a countershaft by spur wheels, the teeth of which are always in mesh. The pinions

on the countershaft are rigidly keyed, while those on the engine shaft are free to revolve over separate friction clutches. On the engine being started, the engine shaft and the clutches fixed thereto revolve inside the gear wheels, but upon any one clutch being expanded the gear wheel instantly becomes a part of the main shaft and the car is started. This, of course, brings all the gear wheels into motion, so that in changing speeds the operation is done with the gear wheels running in mesh. The same prin-

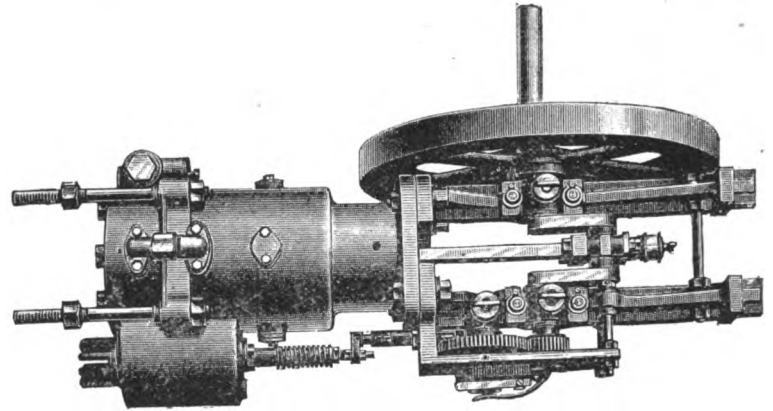


FIG. 3.—THE ONFRAY 6 H.P. MOTOR.

ciple is applied in the reverse motion, but a chain is substituted for gearing. Wheel steering is fitted while the engine is started by a handle at the side. The petrol tank has a capacity of a little over four gallons, said to be sufficient for an eighty miles run under adverse conditions. Eight gallons of water are carried. Ample brake power is provided, while the road-wheels are of the cycle type, shod with 90mm. pneumatic tires.

AN AMERICAN 100-MILE ENDURANCE TEST.

THE following are the conditions which have been authorised by the board of governors of the Automobile Club of Long Island for the 100-mile endurance test shortly to be held on Long Island.

- 1 and 2. Open to three classes—steam, petrol, and electricity. Special prizes issued for each class.
3. Application for entrance of other motive powers will be received and given due consideration.
4. Course to be over macadamized roads on Long Island, including grades, levels, etc.; no retracing; 100 miles within a 12 hour limit.
5. Notices of the forthcoming endurance test to be sent to all village authorities through which the course may be laid, requesting their co-operation.
6. Speed limit of 8 miles through villages and towns, with a maximum speed limit of 15 miles per hour.
7. All contestants are to provide their own fuel and water, either by preliminary arrangement or by transportation.
8. Owners of electric carriages to arrange for battery relays.
9. In case of a tie between two vehicles of the same type, the best average time, taking into consideration the amount of fuel consumed, the weight of the carriage and non-stops.
10. Hill-climbing contest to take place on the grade between Jamaica and Flushing. At this point there is a grade estimated to be about 20 per cent., and about one quarter of a mile long.
11. Entries are to be confined to self-propelled vehicles, so constructed as to carry at least two passengers seated side by side. All vehicles have to carry the full complement of passengers.

CONSEQUENT on applications being made to the authorities in the Wilmslow district of Cheshire for permission to store motor spirit, several members of the local Council have raised objections to the liquid being kept in quantities anywhere near dwelling-houses or other buildings.

THE AUTOMOBILE MANUFACTURING Co., Ltd., 48/49, Long Acre, and North St., Manchester Sq., all cars in stock, Garage, Repairs.

CONTINENTAL NOTES.

BY "AUTOMAN."

I MET the Hon. C. S. Rolls at the A.C.F. last Sunday, busy pasting cuttings out of many maps for the route between Paris and Bordeaux. He tells me he had his first run in his new 24 h.p. Mors a few days ago. He took the car from Paris to Versailles through the snow and mud, and although the conditions were so bad it behaved very well, the second speed giving about the same result as the fourth speed of his old 12 h.p. Panhard. The new car is seated for two, racing trim, aluminium body, four cylinders, electric ignition only. The total weight of the vehicle is 1,350 kilos., and it is very silent, especially when slowed down by the new regulator. Mr. Rolls starts in a few days to learn the route thoroughly from Paris to Bordeaux, ready for the Gordon-Bennett race. He is not, of course, driving his Mors in the Gordon-Bennett race, but expects to steer a Napier to success.

MR. ROLLS was, I believe, about the first Englishman to be authorised by examination to drive a Panhard car in France—his examination dates as far back as the beginning of 1898. Although he has driven in France to a very considerable extent, he has not had a single contravention. He has just passed a further examination on his new Mors, and has been granted a certificate authorising him to drive any petrol car. The examination is made by the Chief Engineer of the Mining Department.

FASHION in motor-cars has made many victims, and the latest is the French company which was founded to develop the Renaux tricycle. Every motorist will remember the race from Paris to St. Malo in 1899, when young Renaux on his 3 h.p. tricycle made such a brilliant record, beating all comers, whether motor-cars or motor-cycles. Just about the time of the formation of this company tricycles went practically out of fashion, and the makers, having been unable to sell their production, have decided to dispose of their undertaking to two of their late employees, who intend to abandon the tricycle and make an 8 h.p. motor-car on the lines of Renault or Darracq.

EVERYONE is talking about the unqualified success of the Mercedes car in the Nice races. Only a year ago the German Daimler was chiefly identified by its heavy, ungraceful lines, when a gentleman whose stage name is Mercedes, but whose real name is Jellineck, took it into his head that a better article could be turned out by the Cannstatt manufacturers. Heset to work with Mr. Maybach, of carburettor fame (who is, by the way, manager of the German Daimler factory), and very soon the low, racy, trim-looking 35 h.p. car, which has already been illustrated in the *Journal*, began to make its appearance, and also to make its mark in the automobile world. The brakes on this car are a special feature: they cannot fire, as by a special arrangement they are sprinkled with water whenever in use. The cooling arrangements are costly but very efficacious, consisting of 5,800 tubes with a cooling surface of thirty-six square metres, and only requiring a gallon and a half of water. In racing trim the car weighs only 1,060 kilos.

THE A.C.F. are organising, in connection with the coming race between Paris and Berlin, a touring competition in which regularity rather than speed will be taken into consideration. A start will be made from Paris about June 25th, and the journey will last about ten days, an average of 150 kilometres per day being maintained. In order to encourage manufacturers to enter their cars diplomas will be given to those whose average running is the best and most regular. Several plans are proposed for obtaining a record of the results. On the one hand it is suggested to give each driver a photographic apparatus, and let him take pictures of the faces of clocks which will be placed at agreed spots on the route. Another suggestion which seems more practicable is to have fixed controls at various intervals and a moving control to take a record of the stops, either voluntary or in-

voluntary, and to prevent racing. It promises to be a most interesting tour, and it is open to tourists of all nations. Arrangements are being made by which a Belgian contingent will join the caravan in Luxembourg and a German contingent on the frontier of Germany.

AUTOMOBILISM seems to have taken root in Spain, in spite of the bad state of the roads in general, and it is said that £80,000 worth of cars have already been imported. There are two motor-car works being established, one in Barcelona and the other in Madrid.

THE motor-car is becoming quite a factor in politics nowadays, and the fortunes of politicians may often in the future depend upon a carburettor or a pneumatic tire. Mr. Max-Regis, the arch-enemy of the Jews in France, laid a deep plan for spreading his doctrines in Tunis with the help of a four-seated automobile, and by means of which he was going to make his crusade in Northern Africa in a speedy and comfortable manner. However, he did not reckon with the strike in Marseilles, and his car only got as far as the docks in that city, where it has been "stuck up" to await the termination of the dockers' dispute.

THE latest automobile club is that about to be formed in Tunis, as a result of the recent tour in Algeria. The club is to be called the Auto-Vélo Club Tunisien, and the first president will be the Count de Farconnet. The club will seek to be affiliated with the A.C.F. This step will greatly facilitate tours in Algiers, and would-be tourists belonging to any of the affiliated clubs will be able to get information as to the routes and transport across the Mediterranean, and thus touring in Algiers will be made easy.

THE *Auto-Vélo's* second article by Michelin is distinctly disappointing. Whereas the reader of the first was lead to expect some good hints which would enable him to avoid puncturing his tires, this second article is purely an advertisement for Michelin rims, advising their use in every case, and stating that they are different in section to any other rims. They are made so that the thickened edges of the Michelin cover fit exactly in the rim like a foot fits in a well-made boot, and, as in the latter case, a good fit prevents soreness and injury to the foot, so argues Michelin the cover resists longer, and is less injured when fitted into a Michelin rim.

NOW that Nice has closed its series of automobile races and fetes, Draguignan is inviting *chauffeurs* to take part in a meeting which is being organised for the 21st and 22nd inst. The programme for the 21st inst. comprises a 1 kilometre contest in the form of a pool, and for the afternoon of the same day a grand *carrousel*. The next day there will be a race of 180 kilometres, from Draguignan to Hyères and back, followed by an exhibition of the cars that have been in the contests. Many vehicles have already been entered for these events, and the success of the chief contest for speed is almost assured in advance by the excellent quality of the roads and the scarcity of villages along the route.

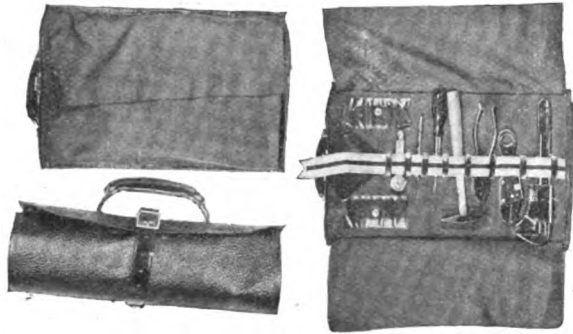
THE members of the Yorkshire Automobile Club will hold a run on Easter Monday from Leeds to Bolton Woods, starting at 10 a.m.; on Good Friday there was to be a run to Harrogate and Ripon.

COUNT KARL SCHOENBORN, who is to be married in Rome in the middle of the present month, will immediately start on his honeymoon trip in an automobile; he intends thus to cover the whole distance between Rome and Miscolez, in Hungary, where his estates are situated.

MR. JOHN G. MIDDLETON, assistant-secretary of the Church Society for the Promotion of Kindness to Animals, in the course of an address delivered in Scarborough last week, said all would agree that horses were subject to poignant suffering which might be entirely avoided by the use of motor-cars in dragging heavy loads, whether of merchandise or of passengers, along the streets and up steep ascents.

THE DYKE TOOL KIT.

THE accompanying illustration shows the Dyke automobile tool kit, with its set of tools specially adapted for automobile use. The kit, which is manufactured by the St. Louis Automobile and Supply Company, St. Louis, U.S.A.,



folds up into a small space when not in use, and will be found handy for roadside adjustments.

THE BUCHET PETROLEUM-SPIRIT MOTORS.

SINCE M. Buchet introduced his well-known *culasse* considerable attention has been centred on his products, so that a brief description of the latest engines turned out from the Ateliers Buchet, at Levallois-Perret, near Paris, may not be without interest. Fig. 1 gives a view of a two-cylinder air-

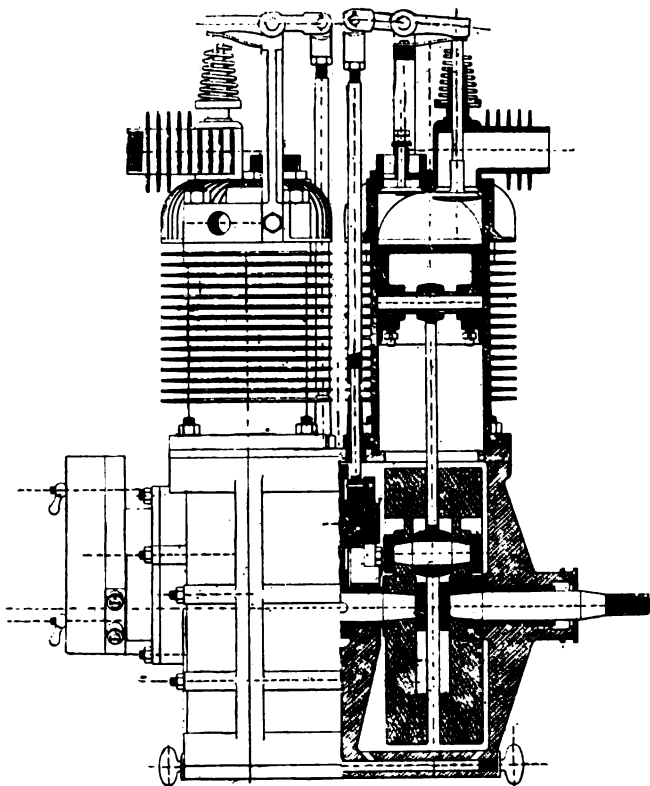


FIG. 1.—THE BUCHET 6-H.P. 2-CYLINDER AIR-COOLED MOTOR.

cooled motor recently introduced for racing motor-cycles and for voiturettes. The cylinders have a diameter of 85 mm. by 80 mm. stroke, the capacity being rated at 6 h.p. The construction closely follows the De Dion type, except as regards the combustion chamber. It will be seen that both the inlet and exhaust valves are located directly on the cylinder top. From this construc-

tion a freer escape of the exhaust gases is obtained, which is claimed to be the cause of the high power developed by the engine. The exhaust valves of the two cylinders are operated by a double cam in one piece, which makes it impossible to shift the time of exhaust of one cylinder with regard to the time of exhaust of the other. This double cam is located between the two cylinders. A long-armed bracket is bolted to the cylinder head, and a double-arm lever, pivoted on the end of this bracket, reverses the direction of the motion of the cam-rod. The ignition gear is so arranged that the lead given to the ignition spark is absolutely the same for both cylinders. A single cam operates both vibrator springs or tremblers. M. Buchet has recently supplied a four-cylinder air-cooled engine of this type to M. Santos-Dumont for his dirigible balloon; it is said to develop 16 h.p. and to weigh only 202 lbs. There are altogether eight fly-wheels, connected by cemented steel shafts running in phosphor-bronze bearings. The

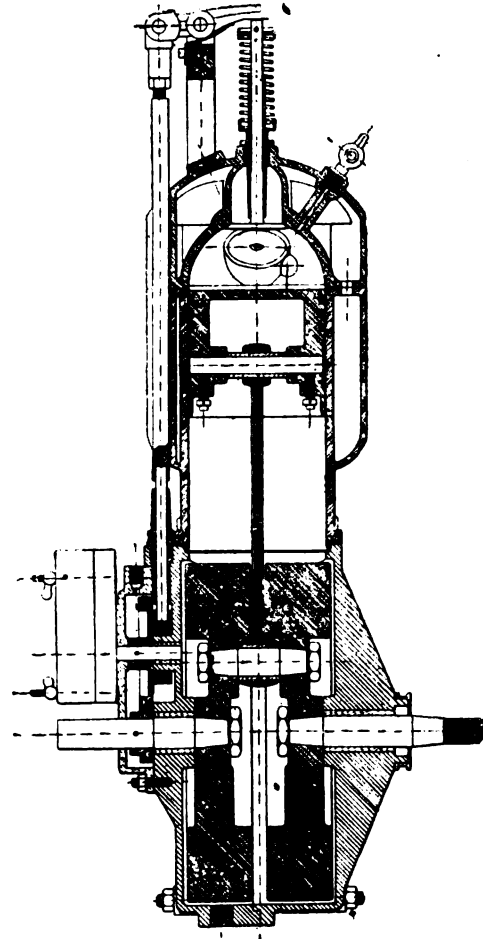


FIG. 2.—THE BUCHET 6-H.P. WATER-COOLED MOTOR.

exhaust valves of each pair of cylinders are controlled by a single double cam. The ignition device is so arranged that the explosions take place in the following order—cylinders 1, 3, 2, 4, so that the parts are well balanced.

Water-cooled motors are also now being made by M. Buchet in one, two, and four cylinder types. Fig. 2 gives a section of the single-cylinder water-cooled engine. The exhaust valve is arranged, as usual, in the cylinder top, while it will be noticed that the water-jacket is carried round the valve chambers as well as round the cylinder. The diameter of the cylinder is 100mm., and the stroke 100mm. (roundly 4in. by 4in.), and tests have shown the engine, although rated at only 6 h.p., to develop, running at 1,600 revolutions per minute, 6.72 h.p.; at 1,800 revolutions, 6.78 h.p.; and at 1,972 revolutions, 7.2 h.p. The fly-wheels and crank shafts work in aluminium oil-containing cases provided with outlets at the bottom for draining off old lubricating oil, etc.

THE MOTOR VEHICLE USERS' DEFENCE ASSOCIATION.

IT will be remembered by most of our readers that this association was formed in the early part of last year for the general protection of motor vehicle users against proceedings and actions at law, either civil or criminal, and where necessary to commence proceedings at law, either civil or criminal, and generally to protect the interests of motor vehicle users throughout the United Kingdom.

Captain the Honorable Cecil Duncombe, J.P., the Honorable John Scott Montagu, M.P., and Sir David Salomons, J.P., consented to act as trustees. A representative committee was elected to conduct the business of the association. Mr. Roger W. Wallace, K.C., was chairman, and Mr. Frederick R. Simms, vice-chairman; the other members of the committee being Sir Edward Jenkinson, K.C.B., Major H. C. L. Holden, R.A., F.R.S., the Honorable C. S. Rolls, and Messrs. R. E. Phillips, J. J. Mann, Claude Johnson, C. Cordingley, S. F. Edge, and F. F. Wellington.

Mr. Thomas W. Staplee Firth (Messrs. Firth and Company) acted as solicitor, Mr. George R. Helmore, A.C.A., barrister-at-law, acted as treasurer and secretary, and the hon. auditors were Messrs. Helmore and Helmore, Chartered Accountants.

During the year there were frequent meetings of the Committee, who had important cases to deal with, and in all cases in which they were asked to assist a member of the Association, funds were voted for that purpose.

Mr. Helmore presented a very satisfactory report upon the work of the Association during the year 1900, which showed that very good and useful business had been done, and that the financial position (certified by the hon. auditors) of the Association was sound.

Our readers are aware that an Association styled the Motor Union has been formed to act in a more comprehensive and extensive way, and with a view to bringing more interest to bear for the general protection of automobilists, and it was unanimously agreed that it would be greatly to the advantage of the above Association to be merged in the Motor Union.

A general meeting was called for this purpose on the 29th March last, and resolutions to the following effect were passed:—

- (1.) "That the Motor-Vehicle Users' Defence Association hereby agree to be merged in the Motor Union about to be formed, and that the trustees be and are hereby authorised to direct that the funds of the Association be handed over to the Motor Union.
- (2.) That the secretary be authorised with the consent of the trustees to cancel the trust deed.
- (3.) That the committee and secretary be and they are hereby authorised and directed to hand over such funds as may be in their hands to the said Motor Union.
- (4.) That all necessary steps be taken to wind up the affairs of the Motor Vehicle Users' Defence Association."

It must therefore be observed that the Motor Vehicle Users' Defence Association now becomes extinct and is merged in the Motor Union, which will be conducted upon the same lines as the Motor Vehicle Users' Defence Association, but under the scheme of the Motor Union much larger funds will be available and the area of its operations will be extended.

The general meeting referred to was a most successful one, and a cordial vote of thanks was passed to the Hon. John Scott Montagu and Sir David Salomons, for acting as the Trustees of the Association, and to Mr. T. W. Staplee Firth and Mr. G. R. Helmore, for their active co-operation and assistance in carrying out the objects of the Association.

An interesting article entitled "Electric Vehicles v. Tram-cars" appears in the current issue of *Cassier's Magazine*.

THE Allgemeine Schnaufferl Club, of Munich, Germany, has offered three prizes for the best Germanisation of the words automobile, automobilism, and automobilist.

HERE AND THERE.

THE Scottish Automobile Club held a run to Peebles on Saturday last.

A RACE from Strassburg to Colmar and back, a distance of 230 kilometres, is being organised by the Alsace-Lorraine Automobile Club; it is to be run off on June 16th next.

THE unusually heavy snowstorms which have occurred throughout England and the Continent during the past winter have done much to prove the practicability of the motor-vehicle.

WE hear that the Progress Motor Company, of Coventry, are working on designs for a new car, with the motor in front, but otherwise practically similar to their present pattern of vehicle.

TWO candidates for Local Council elections at Pontypridd, South Wales, who used motor-cars to assist the lagging voters, were both returned at the head of the poll.

EARL DE LA WARR, who headed the poll at the Bexhill Urban Council election last week, found his motor-car very useful on the voting day.

MESSRS. JOHN HUTTON, SONS AND CO., of Dublin, are arranging to have a large display of motor-cars in the Veterinary Paddock at the spring show of the Royal Dublin Society, which opens at Ball's Bridge, Dublin, on the 9th inst.

THE Speedwell Motor Company, of Reading, have sent us a copy of their catalogue, which comprises illustrations and descriptions of the Argyll, Sirene, Boyer, De Dion, Darracq, Renault, voiturettes, Benz and Panhard cars, Locomobile and Serpollet steam cars, etc.

WITH regard to Mr. Ballin Hinde's motor-car journey from Frankfort over the Alps to Cannes, reported in our last issue, Messrs. Hewetsons, Limited, inform us that the car is a 12-h.p. Benz tonneau, supplied by them to Mr. Hinde, and that it carried four persons.

FOR the convenience of their customers touring, etc., at Easter time, the United Motor Industries, of 40, Holborn Viaduct, E.C., have arranged to have their premises open on Saturday morning for the purpose of attending to urgent orders.

IT may be of benefit to those readers who may be visiting the Crystal Palace during the Easter holidays to know that Mr. Robin Wood, of the Crystal Palace Engineering and Cycle Works, Church Road, West Norwood, stocks petrol, lubricating oil, etc., which can be obtained at any time. Mr. Wood also undertakes motor repairs.

WHAT is said to be the finest car yet seen in South Wales has recently been delivered from the Daimler Works, to Mr. T. Penrose Thomas, of Swansea, for his private use. It has been fitted with all the latest improvements, and was supplied through Messrs. Morris Brothers, Pontypridd, the local Daimler agents.

WE are sorry to learn that the Merthyr Motor-Car Service has been terminated in consequence of the decease of the active proprietor of the company, Mr. Lewis Jenkins. The deceased started his motor-career in October, 1899, and persevered diligently, but a serious attack of rheumatic fever affected his heart.

CALLING in at the United Motor Industries' depot on Holborn Viaduct, E.C., the other day we had an opportunity of inspecting one of the "U.M.I." frames which should be of interest to those firms who are contemplating building up light cars. The frame, which is intended for a light car with engine up to 4½ h.p., is complete with the differential and speed-changing gears, including three speeds forward and reverse, steering gear, including the inclined steering wheel, on the standard of which all the levers are fitted, springs, axles, and hubs. The frame, which is arranged for the motor to be in front, is of tubular construction, a channel-steel support being, however, fitted to receive the motor. The system of transmission is on the lines of that adopted in the Sirene and Renault voiturettes, viz., by *cardan*, or universally-jointed shaft, terminating by bevel gearing direct on the rear axle.

THE first general meeting of the shareholders of the Northern Carriage and Motor Company, Limited, of Aberdeen, was held a few days ago. Mr. J. McRae, the managing director, explained that the progress made was much beyond what was anticipated, and that he had little doubt that the business they had undertaken would prove a great success. A discussion afterwards took place regarding the running of motor-cars on the Echt road.

MOTOR-LORRIES are rapidly coming into favour in Aberdeen, as elsewhere. Recently a company was formed in Aberdeen, under the name of the "Speedwell Motor-Lorry Company," for the manufacture of these lorries, and it is understood that there is every prospect of it being carried on with success. One of these lorries travels constantly between Aberdeen and Dunecht Quarries, and conveys granite to the city from the quarries. A regular goods traffic is also conducted between Banchory and Aberdeen by another lorry. The vehicle journeys by the North Deeside Road, and arrives in Aberdeen from Banchory in the early morning, and proceeds back in the afternoon. It has been in use for upwards of a week.

AMONG the several concerns that are devoting attention to the question of lubricating oils for motor-cars are the Vacuum Oil Company, of 47, Victoria Street, Westminster, who are making five different oils for the purpose, viz.:—No. 1, Mobiloil, suitable for water-cooled motors, and for air-cooled up to 1½ h.p.; No. 2, ditto, for air-cooled motors larger than 1½ h.p.; Rarus cylinder oil, a clear and not too limpid oil, also suitable for air-cooled motor lubrication; Red V cylinder oil and Red M engine, for steam motors. The Vacuum oils are being used by several motor-car firms, the Locomobile Company recommending Red V and Red M for use on their steam cars. They are claimed to be free from charring and evaporation, to retain sufficient viscosity under extreme heat conditions, and to give off no objectionable odours.

THE Swift Cycle Company, of Coventry, who have been building motor-tricycles and quadricycles for some time past, have just completed their first car. It underwent its trial run a few days ago from Coventry to Hinckley and back, and stood the test in a very satisfactory manner. The car is fitted with a 4½ h.p. M.M.C.'s engine, placed under a bonnet in the fore part of the frame. Chain driving is used, with two speeds, while a brake is fitted on the countershaft and a double brake on the rear hubs. Reversing gear is fitted if required. Electric ignition is used, and the steering wheel is brought up by a slightly-raked pillar to within convenient reach of the occupant of the right-hand seat. The car, as at present built, accommodates three persons, two in front and one at the rear, but a body to accommodate either two or four persons can be fitted. The frame is of tubular construction.

THE LONDON MOTOR COMPANY v. THE DAIMLER MOTOR COMPANY.

THE case of the London Motor Company, Ltd., v. the Daimler Motor Company, Ltd., which was down for hearing in the King's Bench Division, was mentioned before Mr. Justice Lawrence on Monday. Mr. Danckwerts, K.C., who appeared on behalf of the plaintiff company, said he had consulted with his learned friend, Mr. Hammond Chambers, K.C., on the other side, and he was in a position to say that the parties thought they had agreed to settle their differences. It only required a meeting of the directors to confirm the acceptance of the terms, and therefore he asked his lordship to allow the case to stand over until next sittings. The matter stood over accordingly.

THE LINCOLN MOTOR 'BUS COMPANY.

THE annual meeting of the shareholders of the Lincoln Motor 'Bus Company was held last week. The chairman of the company, Coun. W. S. White, presided, and amongst those present were Coun. Goy, Messrs. F. Brown, F. Higgs, J. W. Enderby, Sneath, A. W. Goodall (manager), and J. H. Foster (solicitor to the company). The balance-sheet showed a loss on the year's working of £694. In moving the adoption of the balance-sheet, Mr. W. S. White said it was a somewhat disappointing one, but considering that the company was a new one too, they were not altogether surprised. After going carefully into the whole matter he saw a silver lining to the dark cloud. There would be in the future a saving in repairs, cost of petrol, management, etc., of about £475. The whole of the six cars were now running, and that was something which every company could not say. They looked forward, therefore, to a much larger return, and they hoped to add considerably to their income during the coming summer by catering for private hire. One satis-

factory feature of the year's working was the fact that during the whole twelve months there had not been a single accident from the 'buses. In a town where motor 'buses had not been before, and where people were naturally somewhat nervous about them, that was no small tribute to the skill of the drivers. The adoption of the report was seconded by Mr. F. Brown, and carried, after a number of questions had been asked as to the working of the company.

THE LONDON ELECTRIC CAB COMPANY.

A SHAREHOLDER'S petition to wind up this company compulsorily was heard last week. It was stated that the petition was first before the Court in October last, when it stood over in order to ascertain the value of certain licences. The official receiver had now reported that they were practically of no value, and it was at his request the matter was now brought before the Court. Mr. Justice Wright said that he must dismiss the petition, as the petitioners were shareholders. The official receiver's report showed that there were practically no assets, and therefore no benefit could accrue to the petitioners from an order.

FURIOUS DRIVING CASE.

AT the Lymington Borough Bench last week Frederick Mills was summoned for driving a motor-car at an unreasonable speed on the highway. Defendant did not appear. P.C. Osgood stated that on Monday, March 11th, about 2.25 p.m., in Queen Street, he saw defendant driving a motor-car. As he came round the corner of St. Thomas Street witness took out his watch and timed him from the corner of St. Thomas Street to Avenue House. It is 380 yards, and he covered it in thirty-five seconds—that is, over twenty-two miles an hour. Isaac Newton Hayball, who was with Mills in the motor-car, said they had to slow up and put the car on half-speed. In reply to the Chairman, witness said: "We were not going more than ten miles round St. Thomas Street. We could pull up in six yards by throwing the engines out of gear and patting on all the brakes. Fined 10s. and 13s. costs."

OMITTING TO SIGNAL.

AT the Greenwich Police Court last week, William Stone, of New Cross, was summoned for neglecting to sound a bell or whistle whilst riding a motor-car on approaching another vehicle. Police constable 103 P said that on March 10th defendant was riding along New Cross Road, and on approaching a tramcar neglected to sound a bell or whistle. The horse of the tramcar was frightened and fell. Defendant said that he thought the noise of the machine was sufficient. It frightened the horse, and if he had sounded his whistle it would have made matters worse. The magistrate fined him 5s., with 2s. costs.

TO CORRESPONDENTS.

All communications intended for insertion in this Journal or relating to Editorial matters should be addressed to THE EDITORIAL DEPARTMENT, MOTOR-CAR JOURNAL, 39 and 40, Shoe Lane, London, E.C. Letters must in all cases be accompanied by the name and address of the writer, as no notice will be taken of anonymous communications.

The Editors cannot undertake to return MSS. or drawings, although every effort will be made to do so in the case of rejected communications. Where such are regarded as of value, correspondents are requested to retain copies.

The Editors do not hold themselves responsible for the opinions expressed by their correspondents, or for statements and facts which do not appear in the editorial columns.

The Editors and publishers beg also to state that they will accept no responsibility for unsolicited contributions, even if used, unless payment for same is directly specified in forwarding, and the terms arranged before publication.

To insure insertion communications and contributions must be in the Editor's hands by Wednesday forenoon of the week in which the same are intended to appear. Disappointment may be caused by non-compliance with this rule, and to avoid this earlier receipt, if possible, is necessary.

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THE Motor-Car Journal.

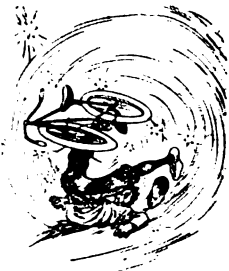
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COMMENTS.



THE Easter Cyclist Manœuvres, beside teaching cyclists many and valuable hints, have also clearly demonstrated the capabilities of the motor-car for quick and effective transportation. The wretched condition of the roads seriously handicapped the work of the cyclists, who were often seen plodding laboriously along, whilst with a quick sharp buzz, a motor-car, carrying a glittering staff of officers, rushed quickly past. Nothing handicapped the motor-cars, and only in one case was there anything like a break-down.

This was with a contingent on its return from Epping Forest to the Bank. The break-down was of a trivial character, and solely gave the costermongers in their barrows a grand opportunity for hurling unsympathetic remarks at the horseless vehicle. A motor-cycle proved a boon to one contingent of the invading force, but a convoy of war material in motor-cars was unfortunately captured. A Singer motor-bicycle took part in the Suffolk manœuvres on Good Friday, and gave the greatest satisfaction to all parties.

Mr. Benn on Municipal Motor Service.

THE London County Council are still considering the possibilities of a service of municipal motor-cars as a solution to the Housing question difficulties. In an unofficial interview Mr. Benn, chairman of the Highways Committee of the County Council, stated that the system of radiating thoroughfares, as proposed in Mr. Balfour's letter of February 12th, "must not be taken too seriously." However, Mr. Benn spoke in optimistic terms of the realisation of Mr. Balfour's ideas on the possibilities of motor-cars. As a first step, Mr. Benn suggested that motor-buses should be substituted on the short routes, which, because they could not be joined with the tramways, are at present served by horse buses. With regard to the capability of motor-manufacturers to cope with municipal demands, Mr. Benn stated that some months ago nothing entirely satisfactory was on the market, but as a result of the advance of the trade in the interim it was practically certain that the demands could now be satisfied. Whether or not the L.C.C. could run motor-cars without additional Parliamentary powers Mr. Benn was not in a position to state, pending the appeal to the House of Lords. If, however, the decision were given against them, he thought that there would be little or no difficulty in securing an Act, backed by the Leader of the House.

The Right of Traffic in Main Streets.

By a tyrannical order the Provost and magistrates of the Royal Burgh of Stromness sought to prohibit cycle traffic in five of the main streets of the town. In order to test the legality of such an order Mr. William Baikie rode through one of the forbidden streets. Immediately the police seized him, and at the local police-court he was fined 10s. or seven days. Not content with the decision of the police-court magistrates, who in more than one town have displayed marked inaptitude for their

positions, Mr. Baikie appealed to the High Court of Justiciary. After strongly commenting upon the illegal order of the Provost and magistrates, the High Court of Justiciary not only quashed the conviction but awarded the appellant ten guineas and expenses. The action of Mr. Baikie in the interests of the public not only deserves the warm appreciation of all cyclists but of every automobilist in the kingdom, seeing that if the Stromness authorities were left in undisputed command of the streets, it would be a very small step indeed to the prohibition of motor traffic.

A Gear-Driven New Orleans Car.

AMONG the many cars which took part in the Easter tour of the Automobile Club was a new one weighing complete about 8 cwt., turned out from the New Orleans Works at Twickenham. Outwardly it resembles the company's 6 h.p. vehicle, the chief alteration being the adoption of gear driving in place of belts. Power is supplied by a water-cooled two-cylinder engine of 7 h.p. The variable speed gear is adapted to give three speeds forward and reverse. From the gear box the power is transmitted to the rear axle direct by a longitudinal shaft and bevel gearing. The performance of the car in the tour, particularly as regards its hill-climbing qualities, has been much commented upon.

County Councils and Motor-Cars.

SEVERAL members of the West Riding of Yorkshire County Council attended at the Automobile Club recently. The Chairman of the County Council explained to the Club Secretary that they were strongly in favour of numbering motor-vehicles, and asked for the views of the Club on the matter. The Secretary explained that the Automobile Club were very adverse to numbering, as it would undoubtedly do great harm to the industry. He pointed out that although some four months had elapsed since the letter sent by the Club to every Chief Constable asking that the Club might be informed in the event of any automobilists failing to stop when called upon to do so upon the driver of a restive horse or a police constable holding up his hand, not a single instance of the offence had been reported by Chief Constables to the Club. The Secretary further pointed out that the number of motor drivers who refuse to stop when called upon to do so is extremely small, and that the numbering of vehicles would not assist the police in identifying offenders, as a driver who would ignore a signal to stop would not hesitate to cover his number when guilty of an offence. The members of the County Council were then given drives through the traffic of London in a wagonette lent by the Motor Manufacturing Company, and in Mr. Alfred Harmsworth's 6 h.p. Daimler. A most unfortunate accident occurred in connection with the former vehicle, although the occupants of the vehicle all agreed that the driver of the car was in no way to blame. A spirited horse being driven by Lord Chelmsford took fright at the automobile and bolted. Lord Chelmsford was thrown out, the trap was upset and broken to pieces, and finally the horse jumped the park railings and was thus pulled up by the remains of the trap remaining on one side of the paling whilst the horse was on the other side.

THE GENERAL AUTOMOBILE AGENCY, D. Farman, Man., Carage open day and night, all cars in stock, 100-104, Long Acre, W.C.

Demonstration at Gloucester.

REPRESENTATIONS having been made to the Committee of the Automobile Club that there was a strong feeling against motor-vehicles in the county of Gloucester, it has been decided to invite members of the Highways Committee of the Gloucester County Council to take drives in motor-vehicles, which will be in attendance at the Shire Hall, Gloucester, at 2 p.m. on Saturday, the 27th inst.

Another Demonstration in June.

A BIG demonstration before County Councillors is being organised by the Automobile Club to take place on the three days immediately after Derby Day, viz., Thursday, June 6th, Friday, June 7th, and Saturday, June 8th. The demonstrations will take the form of drives from the Club, starting at 11 o'clock, to Richmond Park and to Sheen House Club, where lunch will be served. After lunch there will be an informal discussion on automobile regulations, and subsequently the Councillors will be given further drives and eventually taken back to London.



A LOCOMOBILE ON A STIFF GRADE.

The Bournemouth Motor Service.

RIDING into Bournemouth on Bank Holiday it was impossible to fail to observe the crowds waiting for the motor-cars as they arrived from their various points and to note the rush of passengers to secure seats. There were seven wagonettes in use and we learnt that the great total of 2,460 passengers were carried during the day, the total receipts for the seven cars being roundly £26—one car alone earning £4 9s. 10d. There is no doubt the Bournemouth cars are extremely popular and that the service is well managed. Although the cars are known by the popular name of the "Boscombe buzzers" yet they are extremely silent running. Useful information to motoring visitors will be the knowledge that the depot is in charge of a first-class fitter, who can be relied upon to do all sorts of repairs satisfactorily. In our instance a new third speed gear had to be fitted and a complete overhauling of the car indulged in.

The Anti-Skidding Tire Competition.

THE Anti-Skidding Tire Competition, held in the old velodrome of Courbevoie, on Thursday, 28th ult., under the auspices of the Union Automobile de France, provided an interesting and instructive exhibition to a large assembly. There were five entries, and with one exception the competitors put in an appearance. The cars were tested (1) on the old racing track, which had been specially watered and made slippery; (2) on the pavements of certain adjacent streets, which were well greased and covered with a light mantle of frost; (3) on an incline sufficiently steep to test the stopping powers of the cars. The contest resulted in a tie for the first prize of 200fr. between MM. Chameroi and Le Grand. A consolation prize of 50fr. was awarded M. Lucas, who obtained the second place, whilst M. Menier, who came third, received special mention.

Control Contests at the Crystal Palace.

WITH the object of demonstrating the perfect control of drivers over their motor-cars, the English Motor Club has arranged to hold a series of control contests at the Crystal Palace on Saturday, the 27th inst. The course will extend over a distance of about two miles and will include hills of a gradient of one in ten, the roads varying in width from fifty to fifteen feet. About six places will be fixed at which the cars will have to be brought to a standstill within a space of about twenty feet. To prevent the unfairness of pitting a small type of car against the racing cycle, the competitions will be divided into the following classes:—(a) Motor-bicycles (riders to dismount in controls); (b) motor-cycles with three or more wheels which can be assisted by pedalling (free engines barred); (c), motor-cycles with free engines; (d) cars driven by ladies; (e) voiturettes under 6 h.p.; (f) cars over 6 h.p. and under 12 h.p.; (g) cars over 12 h.p.; (h) racing cars; (i) steam cars; (k) electric cars. Whilst racing and hill-climbing tests are very valuable in their way, they hardly cover the point as to the practical use and utility of the average motor-car as supplied to and driven by the public. For this purpose, as already stated, a course has been marked out over the Crystal Palace grounds which will test the cars over roads of the same character as those met with in every day driving. It is obvious that whilst the distance that has to be traversed is, comparatively speaking, short, the variations in regard to wide and narrow roads, declines, inclines, etc., will supply an extremely good test of the capacity of the motor vehicles competing.

Electrical Cabs in New York.

THROUGH the courtesy of the New York Electric Vehicle Transportation Company, the New York Electrical Society held its 213th meeting at the new Main Station, Eighth Avenue and 49th Street, New York, on the 27th ult., when Mr. G. Herbert Condict, consulting engineer of the company and of the Electric Vehicle Company, delivered a brief address on "Automobiles in New York City." After the address the visitors were conducted through the station, which is claimed to be the largest of its kind in the world. The method of generating the current, charging the batteries, inserting and removing batteries from the vehicles, the inspection and dispatch of vehicles, and the whole routine of the vast system of handling daily hundreds of electric automobiles, was illustrated in full operation.

New Regulations at Havre.

THE following circular issued by the Mayor of Havre has caused great indignation in French motor-car circles, and has been the subject of a strongly-worded appeal to the Minister of Works from the Union Automobile de France. This circular states (1) that in turning corners and in the squares and on the quays the speed of a motor-car is not to exceed that of a horse going at a walking pace; (2) that no car shall be allowed in the

THE AUTOMOBILE MANUFACTURING Co., Ltd., 48/49, Long Acre, and North St., Manchester Sq., all cars in stock, Garage, Repairs.

town unless it carries a metal plate bearing a certain number in Arabic figures at least 15 centimetres high and 3 centimetres broad; (3) that this plate shall be affixed to a panel at the back of the car, and in the absence of the panel shall be placed in a conspicuous position behind; (4) that before a motor-car can be run in the town the permission of the mayor must be first obtained. Vehicles only passing through or staying in the town for not less than three days need not obtain the permission of the mayor, but the drivers must first obtain a numbered card at the municipal offices. English motorists passing through Havre would do well to make a note of the new regulations in that port.

A Motor-Car Service for Scarborough.

PROMISES of capital in excess of the sum considered necessary for the establishment of a syndicate for the introduction of motor-cars into Scarborough have been received by the promoters, Messrs. Walker and Hutton. A company, with a capital of £2,500, is to be formed forthwith, and operations will be commenced by the running of three cars, which are expected to be ready for use before the end of July. The vehicles will be provided with two distinct bodies, one for summer and one for winter use. The summer body will be in the form of a char-à-banc, constructed to carry twelve passengers and a driver and conductor. The winter body will be an improved roomy omnibus. The motors will be of 13 h.p., and capable of propelling the car up steep gradients with heavy loads. It is contemplated to utilise the char-à-banc during the summer season for runs to Hackness, Filey, and other places during a portion of the day. During the winter months the cars will be converted into motor omnibuses and used for a regular public service in those districts that furnish the largest traffic.

A Novel Challenge Cup Race.

A CHALLENGE-CUP race for voiturettes for the benefit of manufacturers is being organised by the *Auto-Vélo*. It will be held a little before the Paris-Bordeaux race in June, and each competitor will be required to run three vehicles of the same make. The following are the rules:—(1) The race shall be held annually over a distance of 200 kilometres; (2) Every competitor must run three vehicles; (3) Classification will be determined by adding together the time taken by the three vehicles entered in completing the course; (4) Eight hours is allowed to complete the distance, and any time over that period will be reckoned as twelve hours; (5) The cup shall go to the competitor whose three vehicles shall have completed the course in the shortest time; (6) The entrance fee is 20 francs for each vehicle; (7) Each vehicle must contain seating accommodation for two passengers side by side, be without pedals, and weigh not more than 13 cwt.

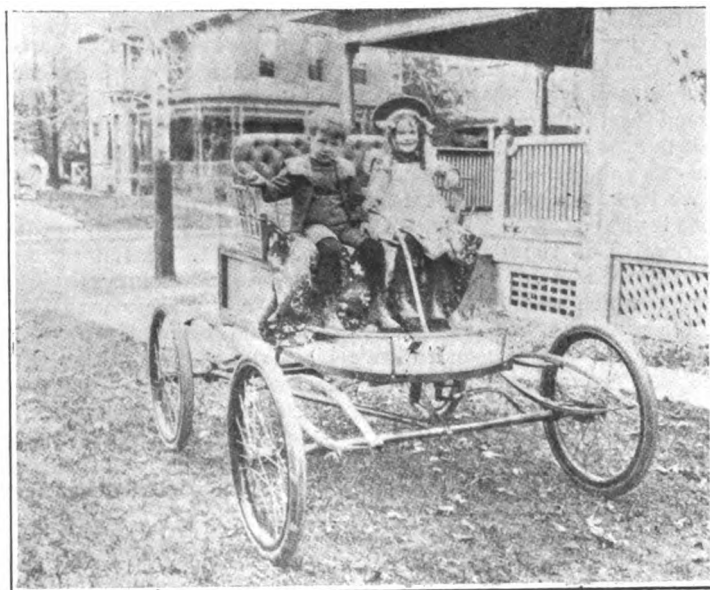
A Lecture at Bolton.

UNDER the auspices of the Technical Instruction Committee of the Bolton Town Council, a lecture was recently delivered in the Mawdsley Street Technical School, to a large audience, on the subject of "Motor-Cars; Past, Present, and Future," by Mr. E. Shrapnell Smith, hon. secretary of the Liverpool Self-Propelled Traffic Association. In the course of his lecture Mr. Smith alluded to the Lancashire and Yorkshire Railway Company recently purchasing a motor-wagon for the conveyance of goods, and used in Liverpool so satisfactorily that he (the lecturer) believed they were about to construct others at their locomotive works at Horwich. Mr. Smith also incidentally alluded to an interview which had taken place between himself and Councillor E. P. Greenhalgh and Mr. John Stewart, Superintendent of Scavenging and Manager of the Sewage Works under the Bolton Corporation, at Glasgow, some time ago, in reference to motor locomotion. In proposing a vote of thanks to Mr. Smith, Councillor E. P. Greenhalgh, J.P., said that about eighteen months ago he and Mr. Stewart were on a deputation to Glasgow, and they were much interested and impressed by

what Mr. Smith had shown them. His (Mr. Greenhalgh's) idea was that the motor system might very well be introduced by the Bolton Corporation, especially in regard to road-sweeping machines and other vehicles in the scavenging department, and he should try and induce the Committee to adopt it to some extent. The wear and tear and cost of horse power was something immense, and he thought much saving might be effected by the change.

Motor-Car Service for Southampton.

AT last the Southampton Borough Council have decided to purchase motor-cars, and for this purpose a sum of £1,600 was voted at a recent meeting of the Council. It has taken the magnates of this far-famed naval port a long time to arrive at a final decision, and even at the present there are some who regard the expenditure as unnecessary, and who look upon the motor-cars as a future white elephant to the town. Fortunately the pessimists are in a minority, and it can only be hoped that in a short time they will change their views on the matter.



TWO JUVENILE MOTORISTS.

A Steam Bus Service in the Midlands.

THE Potteries Electric Traction Company have during the Easter holidays been running some steam automobiles for the conveyance of passengers between Newcastle-under-Lyme and Trent Vale, a connection being thus established with the Newcastle and Trent Vale termini of the electric tramways. The automobiles have been largely patronised, and a good number of people have been thus enabled to visit Trentham Park—the seat of the Duke and Duchess of Sutherland.

An Automobile Market in Ireland.

THE directors of certain Austrian railway companies are negotiating for the acquisition of an automobile to be driven by petrol on the railway lines. The first experiment will be made on a section of the Bohemian line. Two other Austrian companies have also decided to try the experiment. Mr. J. F. Maxwell, writing from Ireland, points out the possibilities of such an arrangement in that country for the carrying of mails and passengers. "There are hundreds of miles of 3 ft. gauge lines in Ireland," he says. Already American capitalists are issuing circulars on the subject, whilst the English traders have done nothing in the matter.

The Yorkshire Automobile Club.

ABOUT a dozen motor-cars assembled in the City Square, Leeds, on Good Friday, for the first run of the Yorkshire Automobile Club. The destination was Ripon, *via* Headingley and Harrogate. At the latter place luncheon was partaken of, and after a good run Ripon was reached. The return journey was made by the same route. The vehicles included a Mytholm car, a Dougill four-seated car, a De Dion voiturette, two De Dion tricycles, a Locomobile steam-car, two Royal Enfield quadricycles, a Mors 8 h.p. car, an Eadie tricycle, a Korte-Atkinson tricycle, and a Marot-Gardon quadricycle. On Monday last a run to Bolton Woods was enjoyed.

Starting from the Seat.

THE necessity of getting out of the car and turning the handle once, twice or more when restarting the engine of a petrol vehicle has often been pointed out as a serious objection by parties investigating the different motive powers, and means of avoiding this operation have been studied by many manufacturers of petrol vehicles. The arrangement usually adopted to overcome this difficulty is a lever operated by the driver from the seat, and connecting with the engine shaft by a ratchet device. The advantages of starting the motor by a lever or other device near the seat, and thus obviate getting out of the car when a stop has to be made to allow unruly horses to pass, etc., would seem to be obvious, yet there is a difference of opinion among *chauffeurs* as to the advisability of such devices, or at least as to the advisability of relying entirely on them. The great question is whether the starting-from-the-seat device will be a convenience to the operator. This, we think, should be answered in the affirmative if the device is well worked out. In touring on country roads it is a very frequent occurrence to encounter shying horses which cannot be made to pass a motor-car with the motor running. Stopping the motor would ordinarily require the motorist or his man to leave his seat, take the crank from the tool box, or other place in which it is kept, and start the motor. If the motor could be started from the seat much trouble might be saved in such cases. If there is anything out of order on the motor, it cannot be started any more with the handle than with the hand or foot lever or other device near the seat.

Motor-Cars for Military Purposes.

THE writer of the Volunteer notes in the *Daily Telegraph* considers that in times of peace "There are few spectacles more exhilarating than the dashing teams and guns, whether in the arena of the Agricultural Hall at Islington or on the plains of Salisbury, but we live in a utilitarian age, when the fittest only are allowed to survive. During the present war the road-engines sent out to South Africa from Aldershot have done splendid service, and it is quite possible that a motor may be devised capable of drawing a 15-pounder field-gun over the rugged country lately occupied by the Boer Republics. But the experimental stages are still far from complete, and the horse will probably be relied upon for the rest of the present year. Lord Roberts would have sacrificed a great deal at Poplar Grove for the possession of such machines as our foreign friends claim to have constructed. All the Boers, some 10,000 in number, were in full retreat, but our horses were too tired to take advantage of the fruits of victory, and so the enemy were allowed to escape. For the most part the country was plain and even, and would have afforded abundant scope for any military automobile worthy of the name."

A THIRCE sounding whistle as a signal for automobiles has been devised by Messrs. Colle and Ackermann, of Wiesbaden, Germany. The whistle, sounding three times in succession, is actuated by a hand or foot lever, and is operated by utilising part of the consumed gases of the engine.

AN AMERICAN CHAUFFEUR'S TOUR IN EUROPE.

D R. J. GRANT LYMAN, a prominent member of the Automobile Club of America, writes to an American contemporary regarding his recent automobile tour in France and a portion of England, as follows:—"In some paper or magazine devoted to sports and travels I read last summer the account of an automobile trip taken in France by Mr. Poultney Bigelow, one of our pioneer automobilists, and as I was just entering the ranks of motor enthusiasts myself, I took a peculiar interest in his experience. We were in Paris at the time awaiting the completion of my Panhard machine, which was to be christened with a trip through the glorious wine country of France. I had heard too much of the erratic and uncertain manœuvres of automobiles to expect anything different in my own experience, and it was with the full expectancy of encountering all the annoyances an automobilist is subject to that I took the wheel in my hands on the morning of August 15th, preparatory to leaving Paris. In spite of every effort to make an early start, it was half past ten before everything was in readiness and the necessary luggage piled into the back of the car. It was under the curious gaze of a crowd of passing pedestrians and hotel porters that the start was made on the slippery rise of the Champs Elysées, and the machine careened and waltzed around as if it were on roller skates, the rubber tires slipping and sliding over the freshly-sprinkled asphalt till it seemed as if we should turn over as a starter. However, after a time it struck a dry spot, and righting itself sped down the avenue and through the boulevards till the city gates were reached.

"It was a fête day, and the streets were deserted by the traffic which ordinarily makes the crossing of the town most tedious and unpleasant. Our guide was a book published by the Automobile Club of France, and a most complete little work it was, outlining perfectly the routes, stating where petrol could be purchased, indicating the best hotels, and with careful parentheses foretelling steep hills and dangerous places. As soon as the gates were passed and we had left behind the immediate environs, we struck into one of those unsurpassed roads for which France is famous, and which makes touring in that country a joy for ever. Under highest speed little towns and villages were quickly left behind, and it was most gratifying to notice that peculiar feature of even the more pretentious settlements—the totally deserted streets and apparently untenanted condition of the villages. This of course enabled us to keep up full speed without the annoying necessity of putting on the brakes for obstacles. The most serious obstructions we had to encounter were occasional herds of sheep, which seemed to have a decided penchant for the middle of the road, and I am quite sure that at least one of their herders had mutton for dinner the day after we passed through.

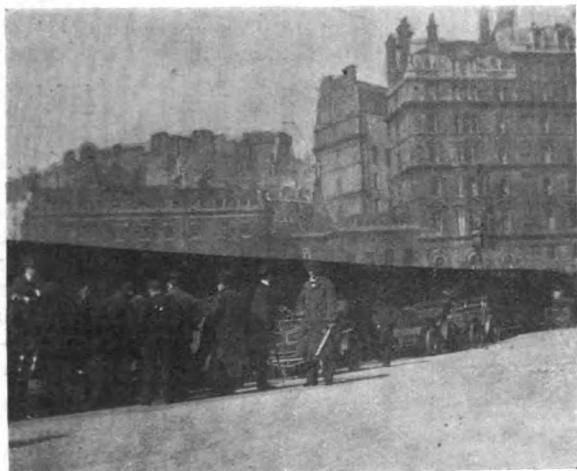
Nothing in the least eventful happened on our trip. It was devoid of accidents and the interesting annoyances which usually come to strike upon the sympathetic cord of experience of kindred automobile spirits. Our fleeting visit to Reims, where we visited the prodigious wine caves of Pommery and Greno, sampling some of their choicest vintages, and a night spent in the Chateau d'Ardennes, formerly a summer home of the sporting King of the Belgians, were among the pleasant features of the trip, the most unpleasant part of which was the almost impassable condition of the roads from Namur to Brussels, which gave us a terrible shaking up and proved an excellent test to the strength of the machines and durability of the motor.

"Shipping our car from Ostend to Dover, we made the trip to London in a trifle over four hours, in spite of the thickly scattered villages. We sampled some of the British aversion to everything French in frequent salutations from workmen passed on the road, in which derisive jests were made about the machine and the land of its birth. However, these were quickly left behind, and we reached London in time for lunch, enthusiastic devotees of the sport of automobilizing.

THE Automobile Club of America will hold its annual dinner in New York on the 18th inst.

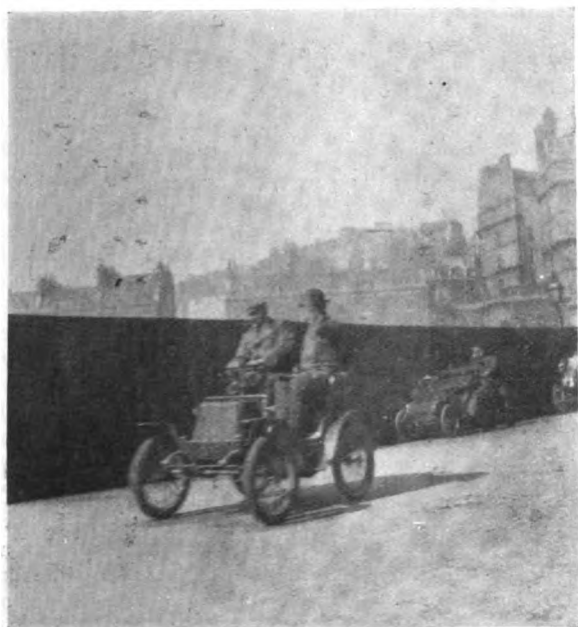
AUTOMOBILE CLUB'S EASTER TOUR.

THE new arrangement of members writing direct to the hotels in place of booking through the Club Secretary, left those who intended participating in the Easter tour of the Club somewhat in the dark as to who and how many intended risking the uncertainty of the weather for the opening tour of the season. Consequently the few cars starting from the Club on Thursday last week at the appointed



GETTING READY AT WHITEHALL.

hour did not look as if the tour would be largely attended, and therefore it was an agreeable surprise to find such a large and representative muster in Salisbury on Good Friday, more than twenty cars being in the spacious and convenient yard of the White Hart Hotel at one time. A goodly company had assembled, as a matter of fact, at Winchester on Thursday, but the majority of cars were driven straight through



A NEW ORLEANS STARTS.

from London to Salisbury, the roads being in fair condition, although a high wind gave one or two member troubles with the burners of their motors.

Good Friday opened dismally enough, the rain falling continuously till after lunch—so very few members were able to take advantage of the Hon. John Scott Montague's invitation to visit Beaulieu, the journey after lunch from Lyndhurst being quite

risky enough in the uncertain state of the elements. For ourselves we had made our headquarters at the "White Hart," Salisbury, an hotel we have frequently stayed at and always found most comfortable. In the afternoon we plucked up sufficient courage to proceed for a few miles on to the Lyndhurst road, where, about a dozen miles out, we met Earl Russell and party on his American car. The vehicle was going well but steaming visibly. Other cars soon came along, including Mr. Pearce and friend on a 9 h.p. Napier; Mr. and Mrs. Richardson on a Daimler tonneau; Mr. and Mrs. Manville on a Daimler; Mr. and Mrs. Howard on a Marshall car; the Mr. and Miss Keneally's on a new 12 h.p. Delahaye; Mr. and Mrs. Owers, and Mr. and Mrs. Estcourt, on Daimlers, both with Estcourt coolers; Dr. Aldridge on a Benz; Mr. Pilcher and friends on a Daimler; Mr. Jarrott and Mr. Cecil Edge, on the 16 h.p. Napier; Mr. Johnson and Mr. Bruce, on a Darracq voiturette; Mr. Astell and Mr. Freeston, on a new gear-driven voiturette, with a two-cylinder engine of 7 h.p., a most serviceable looking car and a very fine hill climber; Mr. Willoughby, on a New Orleans; Mr. and Mrs. Edmunds, with party of seven, on a Daimler, recently fitted with a new 9 h.p. motor; Mr. Bird, junior, and party on a 12 h.p. French Panhard; Mr. Campbell Swinton on a motor-bicycle; Mr. Gorham and Mr. Claude Crompton on a new De Dion voiturette; and Mr. R. E. Crompton on a safety bicycle. Ultimately there was a very fine collection of over twenty cars in the stable yard.

The several days' stay at Salisbury proved most enjoyable, members touring by themselves in various directions—all returning to headquarters in the evening, when a party of over fifty sat down to dinner. On Monday some of the members returned to town. Mr. Bird drove his 12 h.p. Panhard as far as Basingstoke in order to give seats to Mr. Staplee Firth and Mr. W. J. Crampton. From Basingstoke these gentlemen were given seats in other vehicles, whilst Mr. Bird proceeded to Birmingham, and arrived there after having made a "non-stop absolute" run from Basingstoke to Birmingham. Several of the members, ourselves included, continued the tour to Bournemouth. The tour was voted a most enjoyable one, the system of having one headquarters for the Club for the time being much appreciated, and the new Tours Committee is to be congratulated on its initial success.

AFTER a whole year spent in the law's delays, judgment has at length been delivered by the Versailles Correctional Court in the case of the motor-cyclist Dorel, who, by turning at full speed near the Croix de Noailles during the Paris-Roubaix race, last year, nearly killed Mme. Bos, wife of the Deputy, and injured three other persons. It will be remembered that this accident led to a campaign against automobile races. Dorel was condemned to one month's imprisonment, subject to application of the First Offenders' Law, 100fr. fine, and damages; 15,000fr. to M. Charles Bos, 1,000fr. to Martin (the motor-cyclist, whom the defendant threw from his machine), 1,000fr. to M. Biele, and 200fr. to M. Goonstadt.

THE Munich Postal Department is experimenting with an electric tricycle built by Messrs. Schuckert and Co., of Nuremberg, the machine to cover during each trip a distance of from four to four and a-half miles, the trials being intended to determine whether the vehicle can compete with the pedal-propelled tricycles now in use. The problem was, therefore, to produce a vehicle which would combine low cost of operation with minimum maintenance. The vehicle frame is built up of steel tubes; the battery is placed very low, between the rear wheels, in order to insure perfect stability. The weight of the vehicle is 840 lbs., and it can carry a load of 350 to 410 lbs. The maximum speed is ten miles an hour. The battery consists of twenty-four Tudor cells of eighteen ampère-hour capacity, and the mean discharge pressure is forty-five volts. A single series motor of 1 h.p. normal capacity is used. The load of the motor on level streets is about 7 h.p. The controller has five positions for forward motion, one stopping, two braking, and two reverse positions. The current consumption when the vehicle is loaded is sixty-five watt-hours per kilomètre (104 watt-hours per mile).

THE "HUDD" STARTING VALVE.

THE Hudd Syndicate, of 27, Fumival Street, E.C., to whose sparking plug reference was made in a recent issue, has now introduced what may be described as an automatic starting valve. The device, which replaces the compression cock, is a means of rapidly opening and closing the compression, so alternately easing the compression and holding the full force of the explosion. When the motor is started with the compression open in the usual manner, the mixture drawn in by the suction stroke from the carburettor is altered by the air also drawn in through the compression cock. When the compression is effected and the explosion is effected, the full force of the explosion is lost by leakage through the open compression cock, several attempts having often to be made to start in this manner. Occasionally it happens that after the compression tap is closed explosions cannot be made, although they could be obtained before the compression tap was closed. The "Hudd" starting valve is designed to overcome this difficulty and to automatically ease the compression and immediately offer full resistance to the explosion.

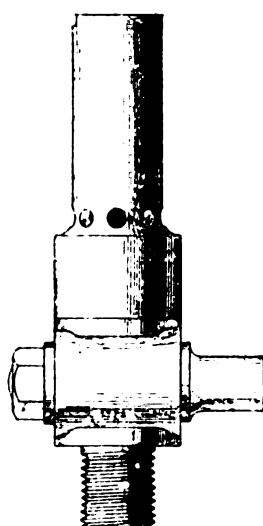


FIG. 1.

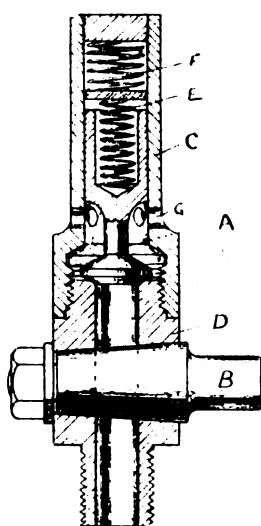


FIG. 2.

On the plug B being turned and the fly-wheel (or in the case of a tricycle, the pedals) being revolved, the explosion mixture is drawn into the cylinder as usual from the carburettor, but the valve A being on its seat on D, prevents air entering through the starting valve, which is in place of the compression cock, as it would through the latter open. On the charge being compressed the weak spring E gives, and reduces the compression by allowing the valve to rise from its seat to a slight extent, discharging the unnecessary explosive mixture through the holes G. On explosion taking place the stronger spring F is compressed and the valve A closes on the upper seating formed on the casing C, and thus prevents any loss of the force of the explosion. In brief, the force of the compression is eased and the force of the explosion maintained. The device should certainly simplify matters a great deal and make starting much easier. It is, of course, entirely automatic.

A MOTOR-CAR repairing depôt has been opened in Clwyd Street, Ruthin, North Wales, by Mr. D. Cushion.

AN automobile race meeting is being arranged to be held at the Hillsgrove Track, Rhode Island, about June 1st. Endeavours will be made to secure the attendance of all the well-known users of motor-vehicle racing machines in America.

THE Panhard and Levassor motor-car which has been ordered by the Rt. Hon. A. J. Balfour will be fitted with a nominal 7 h.p. two-cylinder engine giving 9 h.p. on the brake. The car will be provided with a body of the well-known *tonneau* shape. It is expected that the car will be delivered in June next.

CONTINENTAL NOTES.

By "AUTOMAN."

THE Antwerp exhibition of automobiles, or as it is more correctly styled, "Troisième Salon de l'Automobile, du Cycle et des Sports," will open its doors on the 20th inst., and remains open to the public until the 24th inst. The show which is thus to be held in the commercial metropolis of Belgium is under the patronage of King Leopold, and has, for a president of honour, Prince Albert. It has also, as patrons, the Automobile Clubs of Belgium and also of Antwerp, the Touring Club of Belgium and the Chambre Syndicale de l'Automobile, and the Members of the Committee include the Presidents of the A.C.F. and A.C.B., and Sir David Salomons representing the A.C.G.B. and I. It strikes me as rather an object lesson to us in England to see how united is the effort to push the automobile movement on the Continent, and how much better it would be for us to thus unite our efforts, instead of having irresponsible people getting up shows of their own which can only, if they take place, cause unnecessary waste of time and money to the manufacturers without resulting in any good to the public, whose best interests would be served by attending one good official show, where all the known makes could be seen and tried and compared—and why not under the patronage of the very highest in the land—like the horse shows.

WHILST the Antwerp show is open there will be trials for the record run of one kilometre. The trials will take place on the 21st inst., and are open to any member of the A.C.B., or of any affiliated club. There will be six different classes. 1, Motor-bicycles; 2, water-cooled tricycles; 3, air-cooled tricycles; 4, small cars weighing less than 5 cwt.; 5, small cars weighing from 5 to 10 cwt.; 6, cars weighing more than 10 cwt., and with motors of less than 8 h.p.; 7, cars weighing more than 10 cwt., and with motors of 8 to 16 h.p.; 8, cars weighing more than 10 cwt., and with motors of more than 16 h.p.; 9, large and small cars, electrical and combined electrical and petrol; 10, large and small steam-cars. The trials will take place on a good wide and straight military road, in excellent condition, between Mortsel (Vieux-Dieu) and Borsbeek. The entries, which must be accompanied by a fee of 5 francs for each vehicle, close on the 18th inst., and should be sent to the Automobile Club of Antwerp, 40, Grand Place, Antwerp.

THE Dutch Automobile Club has just held its general meeting at the Hotel de l'Europe in Amsterdam, and has decided to make a public tour round Holland, after the style of the English 1,000-mile trial. There will be altogether four days' running, covering a distance of 331 miles, the longest distance covered in one day being 114 miles. The time of departure and arrival will be fixed so that an average speed of about twelve miles an hour will be quite sufficient to cover the distance in the time allowed. All repairs and work of any kind on the competing cars must be accomplished during the three hours which immediately follow official time of arrival and during the three hours which immediately precede the official time of departure. The trial is to be held in June next, and there are already seventy entries.

THREE Belgian automobilists have just accomplished a very interesting and important tour on three 6 h.p. Belgian Daimlers. Starting from Charleroi three weeks ago they returned on the 30th of March, having covered successfully 2,500 miles, going right down to the Mediterranean *via* Chalons-sur-Marne, Dijon, Aix-les-Bains, Grenoble, and Nice, and returning *via* Saint Raphael, Orange, Saint Etienne, Vichy, Fontainebleau, and Compiègne. Crossing the mountain pass of Croix Haute was particularly difficult owing to the snow. The road had not been cleared and no horse-drawn vehicle had been able to pass since the fall of snow. The accidents of the whole trip are to be summed up in four punctures, and on the last day a distance of 105 miles was covered, from Compiègne to Charleroi. This little 6 h.p. car is most satisfactory in its running, as I have

had personally occasion to know. I believe I was the first to drive one in England—during the last winter I drove one from Harwich to London for a friend, who has since had many pleasant hours and covered some thousands of miles on it.

It is now possible for English tourists—members of the Automobile Club of Great Britain and Ireland—to tour in Belgium, without paying duty on their motor-cars. The A.C.G.B. and I. have only to apply to the A.C.B. and to sign a contract with the latter Club, and permits will be furnished for any members who wish to visit Belgium with their automobiles. The journey from London to Harwich (about fifty miles) is very interesting, and the road is good when once the suburbs of London are cleared. At Harwich the crossing to Antwerp is both convenient and economical; the boats leave at 10.30 p.m., and Antwerp is reached at 9 a.m. the next morning, comfortable cabins and a good breakfast being available on board—the former without extra charge. Should any English enthusiast wish to compete in the speed trials on the 21st inst., entry should be made at once. Antwerp is a most interesting city to visit, being the scene of the labours of Rubens. There is a good road from Antwerp to Brussels, where the beauties of the Boulevards and the Parks are well worth a visit, covered as they will be by the end of April with the fresh green leaves of the spring-time. Any speed competitors should note that last year the records of the world were beaten in Belgium by M. Jenatzy with an oil car, who did the kilomètre at the rate of fifty-nine miles an hour, and by Miesse with a steam car at forty-five miles an hour.

THE Baron Pierre de Crawhez, famous for his pioneer tour in the Sahara, has just arrived in Brussels with his newly-acquired 24 h.p. Panhard car, for which it is rumoured he has paid £1,400. It is certainly a very fine car and he expresses himself quite satisfied with his purchase. He and his brother have just purchased a house in the Avenue Louise, Brussels, and have converted the garden into an automobile garage.

A PECULIARLY paradoxical incident, which I have not seen reported in any English paper, took place at the Nice races, and was alluded to in an amusing manner in his speech at the final banquet by the Baron de Zuylen, the president of the A.C.F. The incident was in connection with Serpollet, of steam-car fame. Serpollet is the president of the Union Automobile of France, a society which was got up in opposition to the A.C.F. The first thing the U.A.F. did was to issue a manifesto against road racing, and this manifesto was signed by M. Serpollet. There was a counter manifesto issued by the A.C.F., and the result of the crossing of swords might be seen in the prominent position taken in the races by M. Serpollet, who, finding the A.C.F. was too strong for him, had to haul down his colours and compete in road racing under the flag of the A.C.F. So great is the commercial value in France of these road racers that one may say the trade is ruled by them, and it is quite certain that the public profit thereby—because it brings the best makes to the front infallibly.

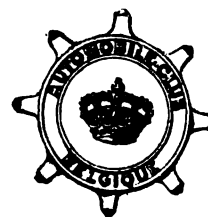
MICHELIN, continuing what he calls his Monday's in the *Auto-Vélo*, brings forward this week an important point which may have escaped the observation of the great majority of motorists, and will therefore probably be of interest to the readers of the *Journal*. One of the great causes of rapid deterioration of pneumatic tires lies in the fact that the wheels are not always parallel. This has a greater effect than most people would imagine. As a general rule the pneumatics of front wheels last about twice as long as those of the back wheels, this, of course, being accounted for by the fact that the back wheels usually carry nearly twice the weight that the front wheels carry. There have, however, been cases in which a certain make of car used up the tires of the front wheels quicker than those of the back wheels, and on examination it was found that the reason lay in the fact that the wheels were not mounted parallel to each other.

It is easy to see that if, for instance, the front wheels are not parallel to the direction of motion, an enormous amount of friction will be produced from the fact that the front wheels are working in a conical, instead of a cylindrical manner. This excess of friction will result in slowing the car considerably, and also in wearing away the rubber. Most of the manufacturers have now taken steps to prevent this defect, but still a new hand at motoring is sometimes liable, when first he becomes owner of a vehicle, to run into the footpath and knock his wheel a little bit out of truth. It would be well, therefore, now and then to look to this point and make sure that all four wheels are parallel to the line of motion. It is quite easy to do this by the eye, though of course it can also be accomplished by measurement.

SOME AUTOMOBILE CLUBS' BADGES.



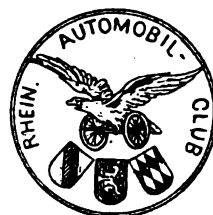
THE AUTOMOBILE CLUB OF AMERICA.



THE BELGIAN AUTOMOBILE CLUB.



THE YORKSHIRE AUTOMOBILE CLUB.



THE RHENISH AUTOMOBILE CLUB (MANNHEIM).



THE NICK AUTOMOBILE CLUB.



THE ITALIAN AUTOMOBILE CLUB (MILAN SECTION).

PRINCE DON MIGUEL OF BRAGANZA has ordered a 12 h.p. Panhard similar to that of Princess Hohenlohe.

ON Saturday, the 20th inst., the Automobile Club will hold an afternoon run to Dunstable, dinner being taken at the Sugar Loaf Hotel.

THE Motor Fittings and Engineering Company have removed from Redhill to the Star Foundry, 28, North Road, Brighton.

AN automobile tour from the Canadian cities of Toronto and Hamilton by way of Niagara Falls is being encouraged by the management of the Pan-American Exposition.

DR. FRENCH, of Forfar, has appealed to the Sheriff-Principal against the decision of Sheriff Lee in connection with the action raised by James M'Farlane, cycle and motor-car dealer, Perth, against him for the price of a motor-car.

MESSRS. STANBURY AND Co., of Commutation Row, Liverpool, have sent us copies of a handy little vest-pocket diary they have issued for the use of cyclists and motorists. They can be had with a map of the Liverpool, Manchester, or Leeds districts.

THE other day, at Gainsborough, the toll-keeper on the Trent Bridge had some difficulty in deciding to what class of vehicle a motor-car belonged, but after deliberation he came to the conclusion that it came under the head of "velocipedes," and charged the driver one half-penny only.

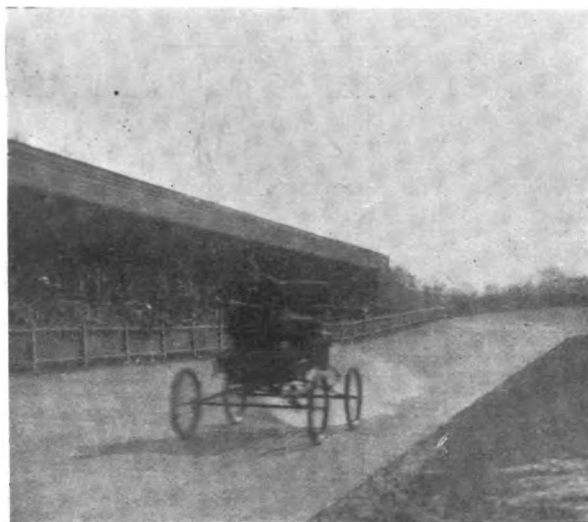
A HILL-CLIMBING competition was held a few days ago up the Königstuhl, near Heidelberg, under the auspices of the Rhenish Automobile Club. Between the starting and finishing points there was a rise of over 550ft., which included gradients of about 1 in 6. There were sixteen starters, and of these fourteen finished, the winner being Herr H. Opel, of Russelsheim, who made the journey in 23 minutes.

MOTOR-RACING AT THE CRYSTAL PALACE.

UNDER the auspices of the English Motor Club, a race meeting was held on the track at the Crystal Palace, on Monday last. The hour of starting, one o'clock, was not altogether a convenient one, but this did not prevent a large crowd gathering round the track to witness the events; indeed, the audience was undoubtedly the largest so far seen at a motor-racing meeting in this country. While the races were interesting so far as they went, some disappointment was expressed at the inability to carry out the events as given in the programme, a two-mile

3½ h.p. Soncin motor. Nixon shot away at the start, but was quickly overtaken by Edge, who led to the end of the fifth lap, when Jarrott forged to the front, maintaining his lead to the end and so winning the race in 7 min. 31½ sec., Edge being second and Lewin third. While there was never much doubt as to the result of the race, Jarrott's victory proved very popular with the holiday crowd.

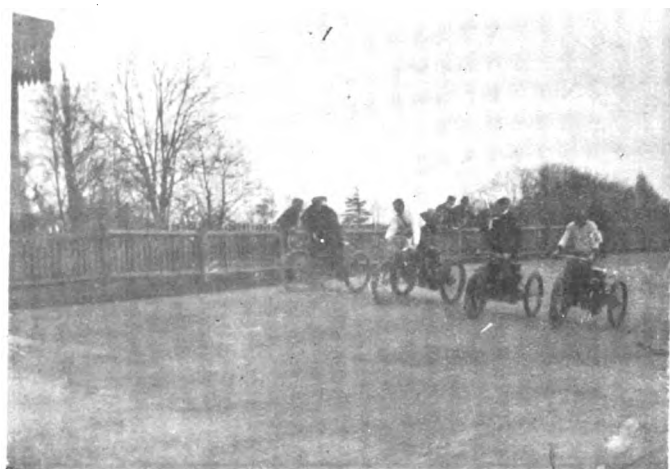
We were next treated to a mile handicap race for cars. Although this was the first race of the kind, so far as we remember, the event was not a particularly interesting one, as there were only three competitors—an 8 h.p. Panhard, driven by C. Jarrott (200 yds.); a 5 h.p. Panhard light car, driven by



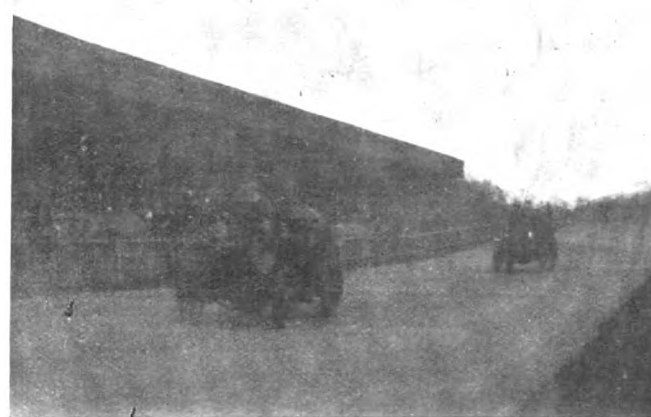
THE LOCOMOBILE IN THE MILE SPEED TRIAL.



THE REMAINS OF MR. C. EDGE'S TRICYCLE.



THE START FOR THE FIVE-MILE TRICYCLE RACE.



THE MILE CAR HANDICAP.

voiturette handicap and a pursuit race between Mr. C. Jarrott and Mr. T. Maltby, jun., both on De Dion 10 h.p. Spiders, being cancelled, the latter owing to the non-arrival of Jarrott's machine from France. It was also stated that Mr. S. F. Edge would give an exhibition ride on one of the 70 h.p. Napier cars, but as this vehicle is still "on the stocks," the 16 h.p. car of the same make had to do service for this item. It was not till about 1.30 p.m. that a start was made with the first event—a five-mile scratch race for motor-tricycles. Of the eight entries, four turned up at the starting point—namely, C. Jarrott, 8 h.p. De Dion; Cecil Edge, 6 h.p. De Dion; J. C. Nixon, 6 h.p. De Dion; and F. Guy Lewin, M.M.C. tricycle with

H. J. Lawson, jun. (300 yds.); and an 8 h.p. Mors dog cart, driven by F. F. Wellington's *mecanicien* (310 yds.). The Mors was soon left in the rear, to the amusement of the spectators, Jarrott winning in 2 min. 16 3-5 sec.

A mile handicap for motor-cycles was next on the list. Four competitors started, Jarrott being on scratch mark, Cecil Edge having 120 yds., Lewin 200 yds., and Nixon 300 yds. start. No pedalling was allowed at the start, the riders being pushed off to get the engines in motion. This race was the cause of much excitement, for on the second lap, just as Edge was taking the banking at a good speed, the spindle of the front wheel of his machine broke, with the result that both machine and rider dashed into the fence,

THE AUTOMOBILE MANUFACTURING Co., Ltd., 48/49, Long Acre, and North St., Manchester Sq., all cars in stock, Garage, Repairs.

breaking it down. Assistance was quickly at hand, but, marvellous to relate, Edge himself was but little the worse for the accident. The machine, however, was a complete wreck, the frame and wheels being twisted out of recognition. Fortunately the other riders were able to keep clear of the spill. The accident, of course, put an end to the race, but after the excitement had subsided, a fresh start was made. Nixon led for the first two laps, but was then passed by Lewin. Jarrott made a bold attempt to get in front, but Lewin came in first in 1 min. 40½ sec.

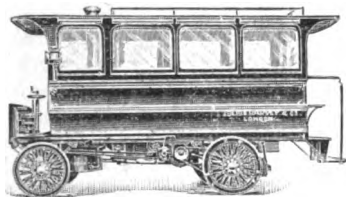
The next item was a mile race against time by a Locomobile steam car driven by Mr. A. Ginder. This is the first time a car of this type has been seen on the track in this country, and the event created great interest, the smooth and quiet running of the vehicle being much commented upon. We managed to get a snapshot of the car coming down the straight on the last lap. The time for the mile with flying start was 2 min. 7½ sec., or equal to a speed of about 28½ miles per hour.

An attempt by Jarrott to lower the mile tricycle record (1 min. 22½ sec.) held by himself formed the next and last event. The high wind prevailing prevented the attempt resulting successfully, the time for the mile with flying start on Monday being 1 min. 30½ sec. Mr. G. P. Coleman took the times, while Mr. F. F. Wellington acted as judge.

The competitors and friends afterwards lunched together at the Palace, a pleasant hour being thus spent.

A STEAM OMNIBUS FOR SPAIN.

THE accompanying illustration represents a steam motor omnibus which has just been shipped to Spain by Messrs. Julius Harvey and Co., of 11, Queen Victoria Street, London, E.C. The vehicle is designed for fourteen passengers, but of course made to seat as required. that there is a in Spain for Messrs. Julius Co. having their custom steam motor-negotiations are pending for a further supply of motor-vehicles to the same country. We may point out that the cars in question have been designed to be fired with coke, but if preferred they can be made to burn oil fuel.



THE Earl of Portsmouth is one of the latest of the nobility to acquire a motor-car. The Earl and Countess are often out driving in the car at their delightful country seat at Eggesford, Devonshire.

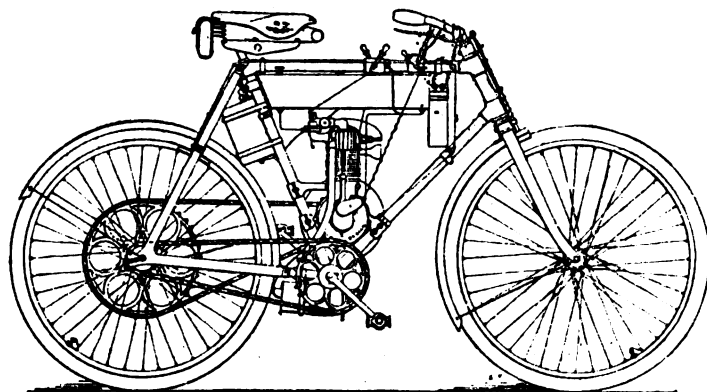
THE London Autocar Company, Ltd., of 182, Gray's Inn Road, W.C., have just got out an abridged illustrated list of motor-cycles, cars, and accessories. Copies may be had for the cost of postage, 2d.

AN interesting article on "Milestones" appeared in a recent issue of the *Field*. The writer pointed out the chaotic state of the positions of the milestones on many of the principal roads of the Kingdom. In particular he mentioned the road running from the Marble Arch to Oxford, *via* Wycombe, as an example of the negligence and inability of the powers that be to grapple with the question.

THERE was a large attendance at the Putney Velodrome on Easter Monday to see the five-mile motor-cycle race. There were six entries, but only the following three started: F. T. Woodman, Putney A.C.; J. H. Booth, Putney A.C.; T. H. Fessier, Essex A.C. Woodman, in the final, beat Booth easily in 10 min. 23½ sec., Fessier retiring. Mr. Mark Mayhew, L.C.C., one of the vice-presidents of the club, was the donor of a five-guinea prize to the winner.

THE MACQUART-VEXIAU MOTOR-BICYCLE.

STILL another motor-bicycle is the Petrocyclette, built by Messrs. Macquart and Vexiau, and lately put on the market by M. E. Arnault, Boulevard Pereire, Paris. The arrangement is much the same as in some other types of bicycles, the motor being fixed inside the frame above the bottom bracket, the power being transmitted to the rear wheel by a chain instead of the belt usually employed. The novelty in the motor, which is of 2 h.p., is the method of air cooling. The cylinder has an air jacket composed of an outer cylinder of copper, with ribs. A funnel is fixed near the top, projecting in the direction in which



the bicycle is travelling, so that a draught created by the forward drive is forced into the jacket, and issues from another aperture at the bottom. The idea is good, but the ribs on the outer cylinder seem a little superfluous unless they are intended to conduct heat from the combustion chamber. The motor shaft is provided with a friction clutch, and the carburettor is of the pulverizer type, in which the petrol is drawn up by suction and mixed with the air as it enters the cylinder. The tank, suspended from the top tube, holds about a gallon of petrol.

THE CREST SPARKING PLUG.

IN our issue of October 20th last we illustrated and briefly described a new sparking plug brought out by the Crest Manufacturing Company, of Cambridgeport, Mass., U.S.A. The plug consists of a shell of steel having a thread at one end to screw into the orifice in the chamber of the motor. Through the shell is a tapered hole in which the insulating cone of a new material is inserted, making a perfect gas-tight joint. Above the shell and fitting around the upper part of the cone is a cup of insulating material. A nut on the metallic stem, which passes through the cone, holds the several parts of the sparking plug together. The binding nut for the wire has a special locking device, while a metallic spring washer is inserted between the cup and nut to take care of changes in expansion. The plug is a radical departure from the type generally in use, and, on account of its form of construction and the special insulating material used, is unaffected by expansion or the intense heat of the motor. Some time ago the Crest Company sent us one of their plugs for trial; it was first tried on a Napier engine and also afterwards on a De Dion motor, on both of which it was found to give capital results. For some time past it has been in use on a new Butler motor with high compression, on which it runs perfectly, the porcelain, or rather the substitute, having also stood very well.

HENRI FARMAN, owing to his not participating in the Mile Race, has been disqualified by the A.C.F. Consequently, although he headed the list in the light car section of the recent speed contest, the prize will not be awarded to him, and furthermore he is debarred for a month from participating in any race.

THE GENERAL AUTOMOBILE AGENCY, D. Farman, Man., Garage open day and night, all cars in stock, 100-104, Long Acre, W.C.

CORRESPONDENCE.



MOTOR-CYCLE MATTERS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—It is some little time now since the relative merits of front attachments and trailers were discussed in your columns, and, as I have been experimenting both fore and aft during the past twelve months, I propose to make a few remarks upon the subject with a view to eliciting experiences and opinions of others. When I first began my motor education I had a decided penchant for a trailer rather than for a front attachment, but I was strongly advised against the trailing car by those of wider experience than myself, and, acting upon their advice, I converted my trike into the white elephant known as a quad. Now, I don't think I ever really enjoyed myself upon that quad! I very soon found that it is practically impossible without superhuman effort to start the four-wheeler by the pedals, and I had to resort to the undignified "shove" and sprawl over the machine to do the necessary tap-twiddling. When running without a passenger the quad is a very clumsy and meaningless vehicle, and when freighted the weight is badly distributed for running purposes—in fact, it is very much like trying to swim with a millstone around one's neck. I very soon gave up the quad in disgust, for, in those days, free engines and water-cooled heads were only fitfully dreamed of.

My next experiment was a tandem attachment supplied from France through the Speedwell Motor Company. This little perch is not very inviting at first sight, but friends of mine who have "perched" there declare that it is not at all uncomfortable, and there is no doubt that for fast travelling it forms excellent accommodation for another passenger. I have averaged twenty-two miles per hour over a run of sixty-six miles with this arrangement. The chief disadvantage seems to be the increased wear and tear to tires. There is another point about this contrivance that is worth noticing. Upon a double-bridged trike (such as my own) there is not nearly the amount of leg room available as on a single-bridged one. Moreover, the "Ariel" would seem especially suitable to this form of attachment on account of the forward position of the engine. I hope to sample this before long.

Finally, with regard to trailers, my own opinion is that they are inestimably superior to front attachments. A good 2½ h.p. trike will take very little notice of them, and the motion is far freer and pleasanter than in the case of a quad. Add to this the ease with which they are coupled up and detached—a trailer takes barely one minute to attach, whereas to convert a trike to a quad means half an hour. They are also far less expensive, and far less likely to cause expense. As an instance of the speed qualities of this form of attachment, I may quote a ride of fifty miles I took last week. I had one passenger on my tandem attachment and another one in the trailer behind that, and yet, over a very hilly road, I only shed forth my passengers once, to negotiate a gradient of about 1 in 7. On the level, with three up, we easily ran at the rate of twenty-five miles an hour.—Yours faithfully,

CLAUDE A. P. TRUMAN.

Hon. Sec. R.A.C.

MORE ROOM WANTED.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I quite agree with "C" in his remarks as to the motor-car of the voiturette type. Not only is one's position cramped, but in most cases it is necessary to interlace knees, and there is no place in which to stow anything bigger than a collar-box. When in Paris last autumn I met an English agent to whom I had often expressed my opinion on this subject, and he drew my attention to a car in which these inconveniences were practically non-existent. On inquiry and examination I found it to be a very substantially built car—roomy *tonneau* body, well finished and of excellent appearance, 6 h.p. motor, gear driven, three speeds and reverse. Price exactly the figure last quoted by "C." If this gentleman will send me his address, I will send him any additional particulars in my power.—Yours truly,

F. E. H.

SOLID OR PNEUMATIC TIRES.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I would much like to hear the opinions of your readers on the use of solid or pneumatic tires for a 5 h.p. motor-car weighing about 7cwt. The engine is placed over the front wheels, is of De Dion type, making 800 to 900 revolutions per minute.

I intend to use the car on country and country town roads, for medical work averaging fifteen miles a day, and also for occasional holiday runs. I am predisposed in favour of good solid tires—(1) as being cheaper at first; (2) as being cheaper to maintain; (3) as being less likely to cause delay and trouble.

If your correspondent "C." will write me, I think I can tell him of a car to suit his requirements.—Yours truly,

W. E. ST. L. FINNY.

FUEL FOR MOTORS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—In your issue of the 30th ult., "Beginner" asks if "ordinary paraffin oil could by any means be used as a make-shift." Even if the motor could be adapted for the use of paraffin oil, I think there would be the greatest difficulty in using it. Some time ago I had the misfortune, when out on a ride on a motor-bicycle, to purchase bad petrol, which I could in no way fire. In consequence I emptied my carburettor and spare tank, and stored a gallon of benzoline. On this I rode a distance of fifty miles without a stop.

Trusting that benzoline may be of service to "Beginner" or others in the absence of petrol,—Yours truly,

J. SCRIVENER.

MOTOR-CARS FOR LIGHT RAILWAYS

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Could you, or any of your readers, give me any information about the use of motor-cars worked by petrol on the railways of Belgium or France? There are hundreds of miles of 3 ft. gauge lines in Ireland, and it seems to me there is an opening for the use of motor-vehicles for the carriage of mails and passengers. If English makers do not take up the question the need will be supplied by Americans, who have begun issuing circulars on the subject.—Yours truly,

J. F. MAXWELL.

STRAPS FOR MOTOR-BICYCLES.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I have been using Collan oil on my belt on my Werner motor-bicycle for the last two months, and I find it greatly increases the durability of the leather, prevents slipping, and renders it impervious to water. I should like to state for the benefit of fellow riders that it can be obtained from Mr. Ch. Hanson, 6 and 7, Long Lane, Aldersgate Street, E.C.—Yours truly,

JOHN J. LEONARD.

ACCUMULATOR AND DRY BATTERY PUZZLES.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Your correspondent Mr. Augustus Kent appears to have had trouble with accumulators when used on his car, and to say exactly what is the cause of these would necessitate an examination of the cells and full particulars of the treatment they have received since they left the maker's hands. No. 1 battery appears to have sulphated, possibly on the surface of the grid, which complaint is greatly intensified by short circuiting on a low resistance ammeter. This practice I cannot too strongly deprecate with all types of accumulators.

No. 2 battery seems to have suffered from the same complaint in a much greater degree, so much so that but a small proportion of the active material remains unconverted into white sulphate. In this case the cells will gas freely after a short charge, the capacity being much reduced. This white sulphate

is very difficult to reduce, but this can be done in practice by special treatment and prolonged charging.

Should your correspondent care to communicate with me through the Editor I shall be glad to be of assistance.

Yours truly,

SPROCKET.

CHARGING ACCUMULATORS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—The decision of the Town Council of Chester, reported in your last issue, is, I anticipate, the result of my correspondence with the engineers of the various electric light supply stations throughout the United Kingdom to obtain information for my "Automobilists' Guide," which will make its appearance in a few days.

It may interest your readers to know that the engineers of over 75 per cent. of the electric light supply stations giving a low pressure or continuous current have signified their willingness to charge accumulators, and that the engineers of many of the stations producing a high tension or alternating current have expressed their intention to lay down the necessary plant to enable them to charge accumulators when the demand is sufficient to justify the expenditure.

Generally the result of my enquiries is:—First, that up to the present there has been but little demand for charging current; and secondly, that the various corporations and companies are alive to the fact that in the near future the charging of accumulators for electrically-propelled motor-vehicles may become a profitable source of income.—Yours truly,

ROBERT E. PHILLIPS.

THE ASTER MOTOR.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I have just noticed a misprint in my letter under the above heading, published in your issue of March 30th, which I should be obliged if you would kindly correct. The sentence runs: "Previous to possessing this (Aster) tricycle, I had two De Dion trikes, so I am able to compare them with the Aster, a comparison that by no means goes in favour of the latter." I wrote: "A comparison which by no means goes in favour of the former (the De Dions)."

The latest success the Aster motor has won was the great Nice-Salon-Nice race, the principal event of the famous Nice week. The competing motor-tricycles were two 6 h.p. Perfecta-Soncins, three 8 h.p. De Dions, and one solitary 8 h.p. Gladiator-Aster. This solitary Aster tricycle, ridden by Demester, came in a very good first, in the motor-cycle class. It was second of all the competing vehicles, being only just beaten by a 52 h.p. German Daimler, with which it ran neck and neck for three-quarters of the way.—Yours truly,

LEOPOLD CANNING.

AN Englishman in Paris writing with reference to "Automan's" continental notes of last week, remarks that although the Hon. C. S. Rolls was undoubtedly one of the first Englishmen to be authorised by examination to drive a Panhard car in France, the first English holder of a "certificat de capacité" was probably the Hon. Evelyn Ellis, whose automobile experiences date back a long time.

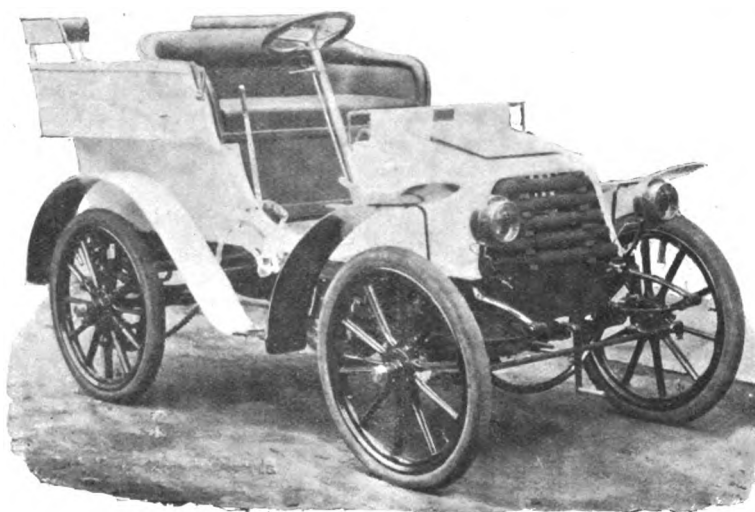
THE latest addition to the ranks of French motorists is M. Casimir Perier, the ex-President, who has lately acquired a 12 h.p. car.

THE Provincial Cup Race organised by the Federation Automobile du Sud-Est is to be run off on Sunday next over the Salon-Avignon-Salon route, a distance of 180 kilomètres. The course is open for cars, voiturettes, and motor-cycles.

LA COMMISSION DES SERVICES EXTERIEURS of the Automobile Club de France has just published *L'Annuaire de Route* for 1901. It contains a complete list of hotels and repairers in France recommended by the A.C.F., and the names of those who store petrol.

THE PIEPER LIGHT CAR.

WE are this week able to publish an illustration of the light car lately brought out by the Société des Etablissements Pieper of Liège. The vehicle is not a voiturette, but really a small car of robust construction and with a long wheel base. The frame, which is constructed of channel steel and wood, is built low and carries the whole of the motor and transmission gear, so that any type of body can be fitted, the illustration showing a *tonneau*. The car is being made in two types—one fitted with a single-cylinder engine of 6 h.p., and one with a two-cylinder motor of 8 h.p. provided with governor. The engine is located under a bonnet in the fore part of the frame; the ignition is electrical, and the cylinders are of course water-jacketed. A pump maintains the water circulation, in connection with which a radiating coil is fitted in the front of the bonnet. Three forward speeds and one reverse are provided, all controlled by one lever at the right of the driver. There is the usual clutch between the engine and the intermediary shaft actuated by a foot pedal. From the change-speed gear box the power is transmitted by bevel gearing to a differential counter-shaft, this being connected to the rear road wheels by a duplicate pair of sprocket wheels and chains. Steering is controlled by an irreversible hand-wheel mounted on an inclined standard, around which are grouped the



various control handles. The road wheels are of wood, the front pair being shod with 65 mm. pneumatic tires, and the rear pair with 80 mm. ditto. A second foot pedal actuates both the clutch and a double-acting brake on the differential shaft, while a hand lever at the side controls band brakes on drums attached to the hubs of each of the rear road wheels. The 6-h.p. car weighs between 8 and 9 cwt., and can attain a speed of from 30 to 45 kilomètres per hour, while the 8 h.p. car weighs between 11 and 12 cwt., its maximum speed ranging from 45 to 60 kilomètres.

THE Honourable Leopold Canning, J.P., has been touring in France on a 5 h.p. Century motor-tandem.

A RACE for light cars of not more than 7 h.p. will be run off on Sunday next, under the auspices of the Swiss Automobile Club.

PLANS are being prepared for a speed contest from Cleveland to Buffalo. The distance between the two cities is figured at about 195 miles, the roads being principally gravel or macadam, gently rolling, with few steep hills.

CONSIDERABLE interest was shown last week in French motoring circles in the long-distance run made by M. Garcin on an electrical car weighing complete only 14 cwt. With one charge of the battery, consisting of a set of Bouquet-Garcin-Schivré accumulators having a capacity of 120 ampère-hours and weighing 6½ cwt., he was able to cover a distance of eighty-five miles, his time for the trip being 6 hr. 32 min. 55 sec.

CHAINS FOR MOTOR-CARS.

THERE are few cars into whose anatomy chains do not enter somewhat, but there are fewer still in which such chains are run under satisfactory conditions for efficiency and durability. To this may be attributed the occasional attempts to break away from the chain tradition and supply their place by bevel gear, shafts, and other substitutes, which can never exceed, even if they equal, the efficiency of a perfect chain. What other form of gearing would stand the conditions of a driving-chain, exposed to road grit in dry weather, covered with mud in wet, and expected to exist on a small amount of lubricant that a more or less regular but superficial application of oil or grease can supply, supplemented in more careful hands by an infrequent soaking in melted tallow? If gear-cases had not been introduced on cycles, there is little doubt that some chainless gear would have become almost universal, not on account of any mechanical superiority, but because it was protected from dirt; and a similar cause acts in the same way with regard to cars. There is no reason, however, why such a silent, efficient and convenient transmission as is afforded by chains should not be used to an even greater extent if properly protected, and, in fact, several cars have now appeared in which the whole gearing consists of them.

The most casual survey of modern automobiles shows a perfectly astonishing diversity of practice with regard to the proportions of driving chains, and a few remarks on the principles

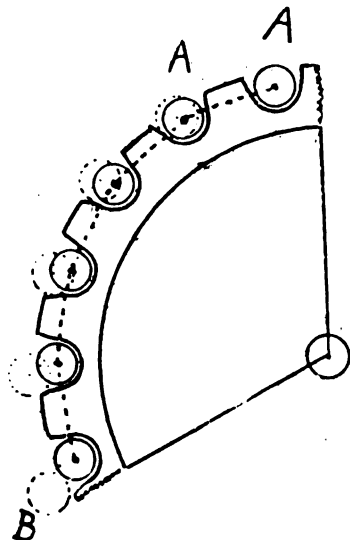


FIG. 1.

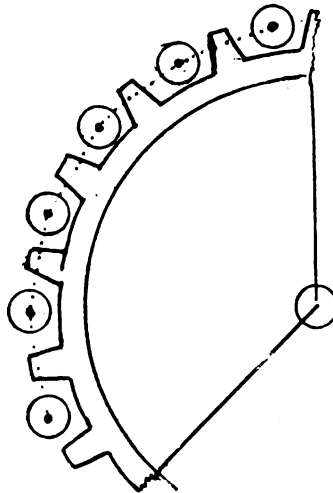


FIG. 2.

involved may not be out of place in this connection. In the first place, the form of chain has to be considered, and though there is little to choose in efficiency between different forms when lubricated, the roller chain is probably preferable where, as is usually the case, lubrication is insufficient, both as causing less wear on the teeth and as having, in the same size, more ample dimensions of wearing surfaces, though the lower price of the block chain may have compensating advantages. The Renold laminated chain, though theoretically good, is hardly satisfactory under road conditions, needing to be kept tight, and offering much lodgment to grit, and it is little used for this purpose.

As to the size to be employed, in which such widely different practice is evident, there is little necessity for fixing this on theoretical grounds of power to be transmitted, where exposed chains are in question. A chain becomes useless when so stretched as to cease to run smoothly, and to show a tendency to jump the teeth, and as this stretch is almost entirely due to wear on the rivets, the only way to diminish it is to have them excessively large and long as far as mere power-transmission is concerned. For this reason a large chain is preferable, as having a much longer life, while thickness in the side-plates is needed, not for tensional strength, but to provide a firm attachment for the sleeves in which the rivets work.

Another point about chain gearing is that a chain can never

be in true pitch with its sprocket. A pair of spur gears tend—to a certain extent—to wear into a good running fit with each other, but a chain, if made to fit its sprocket when new, does not continue to do so a moment after being made, as wear at once throws it out. This being so, it must be put up with, and involves the consequence that a chain can only drive with one tooth at a time, supplemented by any frictional “bite” the other links may have on the base of the tooth interspaces. If the chain be made to fit these accurately, as in Fig. 1 (taking a roller chain in illustration), it is obvious that the least stretch will cause the rollers AA to begin to ride on the teeth as at BB. If, however, the teeth be made narrow compared with the spaces between the rollers, a considerable stretch may occur without this taking place. The roller interspaces, then, should be long, to permit the teeth to have some play in them, while retaining sufficient strength, as shown in Fig. 2.

In order that the driving sprocket may receive each incoming link of the chain without its having to slide up the tooth-face, it should be of a somewhat longer pitch than its chain, the result being that the bottom tooth takes the drive, this being permitted by the tooth-play shown in Fig. 2. This difference, of course, gradually disappears as the chain stretches. The back wheel sprocket, on the other hand, should take the drive with its topmost tooth, and hence should be of slightly less pitch than the chain, but as the pitch of the latter constantly increases, it may be originally of the same pitch. The only remaining point with regard to design, and one which the owner of a car may easily ensure, is that the number of teeth in the sprockets should be prime to that of the links in the chain, or at least that the latter should not be divisible by the former, so that each tooth in turn of the sprocket shall engage every link in the chain, thus ensuring equal wear.

As the presence of mud and grit is usually inevitable, the lubrication of the chain is best effected with as heavy a lubricant as possible, and the conveyance of this to the rivets is only to be ensured by taking the chain off and immersing it in melted grease, tallow (well freed from salt) with a modicum of graphite being as good as anything. The application of chain greases to it *in situ* lubricates the rollers and teeth, but little of the lubricant so applied ever reaches the rivets, and if oil is used, though it may penetrate to them, it is soon removed from the surface by the accumulation of road dust. Shedding of chains is generally brought about either by excessive looseness or want of alignment between the sprockets and back chain wheels; a sufficient transverse rounding of the tips of the teeth is advisable to diminish the chance of it. A shrouding or flange each side of the teeth for the side plates of chain to bear on is certainly desirable, as diminishing the wear on the rollers and giving a certain increase of frictional drive; but it is not always provided. It may be here noted, as the reply to a question occasionally asked by untechnical drivers, that where there is a differential on the countershaft an inequality in the tightness of the chains does not affect their each taking their share of driving; and it is more important that the parallelism of countershaft and back axles shall be maintained than that the chains should be kept equally tight at the sacrifice of this.

R. W. BUTTEMER.

It is reported that a service of motor-cars is about to be started between Santa Fé and Grenada, in Spain.

A LIGHT motor-van, made by Messrs. Marshall and Company, is running about Manchester.

LA COURSE DU CATALOGUE, which has been postponed twice, has been definitely fixed to take place on the 29th inst. Up to date thirty-nine entries have been received.

UNDER the title of the San Juan Transportation and Trading Company, a concern has been formed by a number of American capitalists with the idea of supplying Porto Rico with an automobile service, doing a passenger, mail, and freight business.

TWO French chauffeurs—MM. Schrader and Oury—are about to undertake a tour round France in a voiturette, the engine of which will use as fuel a mixture of 50 per cent. alcohol and 50 per cent. petrol.

HERE AND THERE.



LORD LLANGATTOCK has been presented with the freedom of the borough of Monmouth, last conferred on Lord Nelson in 1782.

UP to the time of going to press about a dozen entries had been received for the Automobile Club's petroleum-spirit trials to be held to-day (Saturday).

A SYNDICATE has been formed in Bordeaux by the owners of cycles and motor cars to protect their own interests, and to insure themselves against accidents.

THE appearance of an electric motor-van in the streets of the little village of Dagenham, Essex, the other day, caused great excitement among the inhabitants.

THE Tours Committee of the Automobile Club is making preparations for the Whitsuntide Tour, which will probably take the form of a run to Paris to witness the Gordon-Bennett race.

MR. STAPLEE FIRTH was summoned the other day at the Poole police court for furiously driving a Locomobile steam car. After a lengthy hearing the case was dismissed, no costs however being allowed.

THE military authorities in Algiers have decided to test automobile wagons, and have ordered M. G. Le Normand de la Fosse to make a trial trip to Gardhaia, and if necessary to El Golia.

THE Memorial drafted by the Liverpool Centre concerning Tare Limit is being circulated by the Automobile Club for signature, and will shortly be transmitted to the Local Government Board.

M. ANDRE A. GODIN, of 10, Gray's Inn Place, W.C., the London general agent of the well-known French firm of E. Schlaverand, of Paris, has sent us a copy of a new list of valves, pumps, reservoirs, and other motor-car accessories of which the firm make a speciality.

WE have received an attractive little circular from the Mitcham Motor Company, Wandle Works, Mitcham, Surrey. Among their goods we notice a marine petrol two-cycle engine for boats, ranging from 1½ to 6 h.p. These engines, it is stated, will run in either direction, no reversing clutch being necessary.

SEVERAL members of the Automobile Club are arranging to tour down to Liverpool, starting on May 31st, on the occasion of the heavy motor trials which are being organised by the Liverpool Self-Propelled Traffic Association. A dinner in connection with the trials will be held on Monday, June 3rd.

THE charge against Mr. Bird, the well-known motorist, of Birmingham, for driving furiously was dismissed. Another summons was then issued, in which Mr. Bird was charged with driving at the rate of more than twelve miles an hour. This case was also dismissed. Mr. Staplee Firth acted for the defence.

THE Technical and Legislative and Trials Rules Committee of the Automobile Club is engaged in preparing the regulations for consumption in the Hill-climbing Trial, which is to take place on Thursday, the 2nd May, immediately preceding the opening of the Exhibition at the Royal Agricultural Hall. It is probable that the competition will be similar to the quarterly 100-mile trials.

IN the Triennial Report of the Chairman of the Oxfordshire County Council it is stated that, in view of the difficulty of keeping control (under the Light Locomotives Act, 1896) over those owners of motor-cars who, by travelling at excessive speed to the public danger, evade the possibility of identification, the Council have, in common with those of neighbouring counties, urged the registration and distinctive numbering of all such vehicles.

THE Celeritas Automobile Company of Vienna have just finished a new 12 h.p. car. It is propelled by a Buchet vertical two-cylinder engine fitted in the fore-part of the frame. The transmission is on the lines of the Panhard and Daimler systems, five speeds forward and a reverse motion being provided for.

AN English model of a heavy steam-waggon has been forwarded to the Toledo factory of the American Bicycle Company. The company intend building their wagons on the English model.

THE examples set by the Shah of Persia, the King of the Belgians and the King of England must be contagious, says the *Auto-Velo*, as the Khedive of Egypt has just purchased a motor-car from a French firm.

THE Caledonian Motor-Car and Cycle Company, Limited, of Aberdeen, have secured the sole agency in Scotland for the motor vehicles and frames manufactured by Messrs. Panhard and Levassor, of Paris.

EVEN 'bus proprietors are beginning to realise the advantages of the motor-car over the ordinary 'bus. An enterprising proprietor of Chester has decided to run an express motor-car service between Chester, Kelsall, and Tarvin.

IN connection with the Dublin Spring Show, a parade of twenty-seven motor-cars was held in the jumping enclosure at Ballsbridge on Wednesday last. A great number of people, including the Lord Lieutenant of Ireland and the Countess Cadogan, were present at the parade.

MESSRS. MORGAN AND WRIGHT, of Chicago, have sent us a pamphlet dealing with their solid rubber motor-vehicle tires. To fasten the tires in the channels flat steel bands are used, and it is claimed that by such the tires can be made secure with little or no difficulty.

THE Berlin postal authorities are satisfied with the tests of electric motor-cars, and have decided to continue to use them. A car has recently been built with motors applied to both front and back wheels. In size it is much larger than its predecessor, its capacity is also much greater and equal to that of the largest cars of its sort.

THE Union Automobile de France has decided to organise a speed competition for touring cars to be held in May. The course will be in the form of a handicap, the following points being taken into account: (1) The weight of the car in running order; (2) the power of the motor; and (3) the weight carried.

MESSRS. PANHARD AND LEVASSOR have, it is reported, acquired the French rights in the Auto-Sparker, of the Motsinger Device Manufacturing Company, of Pendleton, Ind., U.S.A. The Auto-Sparker is a self-regulated dynamo, which furnishes a continuous electric current for the explosions in petroleum-driven automobiles. Messrs. Panhard and Levassor will, it is said, fit the device to all their cars.

THE Count and Countess de Chasseloup-Laubat have been touring in the Sahara on a motor-car. The appearance of their motor-car at Tuggurth caused the liveliest interest, as it was the first time that the horseless car had been seen in that part of the Sahara. In spite of sand-banks and the bad condition of the roads, the Count and Countess covered a distance of 230 kilometres—from Biskra to Tuggurth—in eleven hours. It takes a good horse two or three days, and a caravan eight days, to cover the same distance.

THE sub-committee of the A.C.G.B.I. and a committee of the Scottish Automobile Club are proceeding with the preparations for the Big Event of 1901, which may probably take the form of a meeting of the Trial Vehicles at Carlisle on or about Tuesday, August 27th, a trial run from Carlisle to Glasgow on Wednesday, August 28th, and trial runs of 100 to 110 miles a day beginning and ending at the Glasgow Exhibition each day for nine days, beginning Thursday, August 29th, and ending Saturday, September 7th.

SOME excitement was caused on Clapham Common, on Good Friday, by a motor-car being set in motion by a boy. A gentleman left the car outside a house, when some boys gathered round the car. One of the lads, mischievously inclined, set the machine in motion. The car only travelled a short distance, when it suddenly turned on the path and dashed into a wall at the corner of Nightingale Lane. The vehicle was much damaged, but no one was injured by the runaway.

WIDTH OF PNEUMATIC TIRES ON MOTOR-CAR VEHICLES.



The following letter from the Local Government Board has been received by the Automobile Club:—"It has been represented to the President that with regard to the regulations issued by the Local Government under the Locomotives on Highways Act, 1896, the width of the pneumatic tires should be less than the width prescribed for iron tires, i.e., if the width of an iron tire is 3 in., the rubber tire might be 2 in. or at most 2½ in. in width. 'If 3 in. is maintained, it will cause great expense and inconvenience, as the Trade have always made them 2½ in.'

I shall be much obliged if you will inform me:—(1) As to the descriptions of pneumatic tires adopted by the Trade for motor-vehicles. (2) Whether any complaint has ever been received by the Club as to the width prescribed by the regulations for this description of tire (whether hollow or solid) according to the weight of the vehicles, and if, in the opinion of the Club, there is any reasonable ground for complaint by the Trade in this respect? (3) Are motor-cars over one ton in weight fitted with pneumatic or rubber tires, and is there any recognised limit of weight of carriage, to which such tires can be fitted? (4) How does the width of tire, in proportion to the weight of carriage which is prescribed by the regulations, compare with the width prescribed in France, or other Continental countries under similar conditions? (5) How is the width of the pneumatic tire measured?"

The following reply was sent from the Club by the Secretary:—

(1) The pneumatic tires used for motor-vehicles consist, for the larger part, of an outer cover of indiarubber, which is attached by various systems to the metal rims of the wheels, and an inner tube. This tube is inflated with air under pressure. I send you herewith a section of one of the most commonly used forms. With the section is also a section of the metal wheel rim.

(2) No complaints have been received by the Club as to the width prescribed by the regulations for this description of tire, namely, pneumatic.

As regards solid indiarubber tires, there is, in the opinion of the committee, ground for complaint in respect of the conditions laid down in the regulations. There is no necessity for the solid rubber tires of a motor to be as wide as the regulations require. In proof of this fact I would remark that many motor-vehicles having solid rubber tires do not comply with the regulations. In spite of this no damage has been done by vehicles to the road. Had that been the case, the authorities would have noticed it, and would have called attention to the breach in the regulations. But, so far as I am aware, no complaints on this ground have ever been made.

(3) Motor-cars weighing over one ton are fitted with pneumatic and with solid rubber tires. I do not think it is likely that vehicles weighing over one-and-a-half-tons will be fitted with pneumatic tires, since the law would not permit them to travel at more than eight miles an hour.

(4) I regret I have no regulations in respect of the width of tires prescribed in foreign countries. I am under the impression that no such regulations exist. Whether such regulations exist or not, all makers in France adopt such width as they find best suited for their cars.

(5) The width of pneumatic tires is measured by its outside diameter at its widest point when inflated.

In conclusion, I am to state that the Committee of this Club would recommend the removal of all restrictions in respect of the width of indiarubber tires, because neither makers or users of cars will employ tires which are not of sufficient width to secure considerable life, and the narrowest tires they can use economically are quite harmless in their effect on the roads. The Committee, therefore, trust that the Local Government Board will see their way to remove restrictions as to the width of indiarubber tires.

THE AUTOMOBILE CLUB'S QUARTERLY 100-MILE TRIAL.



As briefly mentioned in our last issue, the quarterly 100-mile trial of the Automobile Club was held on Tuesday, the 2nd inst. The usual route was followed, viz., from the second milestone from the Marble Arch, via Ealing, Uxbridge, Beaconsfield, High Wycombe, and Stokenchurch, to the fifty-second milestone (outskirts of Oxford), and back. Total: 100 miles. The road was rough in parts with occasional patches of unrolled metal. The surface on Dashwood Hill was loose. The weather was bright, but a strong head wind was encountered on the return journey.

The hills on which hill-climbing trials took place were:—(a) The steep portion of Dashwood Hill, commencing at 33rd milestone and ending at danger board at the top, 1,180 yds., having an average ascent of 1 in 160 and including 352 yds. of 1 in 10.9. (b) One mile, including Dashwood Hill, commencing at the 33rd milestone and terminating at the 34th milestone, having a total rise of 241 ft. in 1 mile, including 275 yds. of a gradient of 1 in 21.7 and 600 yds. of a gradient of 1 in 11. (c) Aston Hill on the return journey, distance 1 mile 1,100 yds., having a total rise of 316 ft. and including 1,910 yds. of a gradient of 1 in 21.

Only two vehicles took part in the trials as follows:—

A Gladiator 6 h.p. voiturette (the Motor Power Company, Ltd).

This car had four seats but on the trial carried only two persons. The following are the results as given by the observer:—

Quantity of petroleum spirit used on the journey:—½ gallons.

Quantity of water used on journey:—6 pints.

Average cost of fuel per mile at 1s. 3d. per gallon:—6d. per mile.

Speed including time occupied by all stoppages:—Up to the legal limit of 12 miles per hour.

Number and cause of stoppages:—(1) Owing to fracture of pipe between petroleum spirit tank and carburettor. This was mended with rubber tubing. Delay fourteen minutes.

Hill-climbing speeds:—(a) The Steep Portion of Dashwood Hill:—Took two passengers all the way up. Time, to danger board, 4 min., equal to 10 miles per hour. (b) One mile including Dashwood Hill:—Took two passengers all the way up. For the mile 6 min., equal to 10 miles per hour. (c) Aston Hill: Took four passengers up. Time 11 min., equal to 8.8 miles per hour.

A Marshall dog cart entered by Messrs. Mann and Overton, 25, Mortimer Street London, W. The results obtained were:—

Speed, up to legal limit of 12 miles per hour.

Number and causes of stoppages:—The car ran without a stop for eighty miles, when the trial was abandoned owing to fracture of crank-shaft.

Hill-climbing speeds:—(a) The steep portion of Dashwood Hill:—Took two passengers up all the way. Time, to danger board, 6 min. 25 sec., equal to 6.26 miles per hour; (b) One mile, including Dashwood Hill:—Took two passengers up all the way. For the mile, 7 min. 35 sec., equal 7.9 miles per hour; (c) Aston Hill:—Took two passengers up all the way. Time 14 min. 7 sec., equal to 6.9 miles per hour.

THE DAIMLER MOTOR COMPANY.



AN extraordinary general meeting of the Daimler Motor Company, Limited, was held on Wednesday, at the Holborn Restaurant, W.C., under the presidency of Mr. E. H. Bayley (the chairman of the company). The secretary (Mr. George T. Grant) having read the notice convening the meeting, the Chairman said: Although this meeting has been called for a specified purpose, it may reasonably be expected that I should give you some information as to the company's present position and prospects. In my remarks at the general meeting six months ago I expressed a sanguine view of the probable business for the present year. Judging from the highly satisfactory business that has been done so far, I am surprised at my own moderation. The orders have gone up, if not in leaps and bounds, at a rather surprising rate. During the past month of March we received orders amounting to £7,608, as compared with £5,400 in the corresponding month last year. The goods delivered during the past six months amount to £29,678, being an increase of about £6,000 over the amount for the corresponding period last year. The orders at present on hand amount to £33,550, which is greatly in excess of the amount at this time last year, and this does not include repairs, which are the most profitable part of the work. At the last meeting I led you to believe that you would receive a high dividend this year. Judging from the figures I have laid before you, it is clear that you ought not to be satisfied with less than 10 per cent. It is obvious that the success or failure of the business depends largely upon the officials. We have at last, however, secured a works manager who, if he has a fair trial, will, in my opinion, prove a great success. During the short time that he has been in charge he has effected a great transformation in the appearance of the place, which an experienced eye can discern at once, and the work is being turned out much more satisfactorily. I may also add that the management of the London showrooms is now, as compared with what it was when I joined the board, as light compared with darkness, and this remark applies to the company's business generally. With regard to the financial position it is desirable, in the interests of the shareholders, that debentures should not be issued sooner than is necessary, as, of course, they stand in front of the shares. With good management the company has been able to meet its engagements for two years without debentures, and had it not been interfered with the issue might probably have been postponed for some time, if not altogether. Shortly before or after the last general meeting Sir Edward Jenkinson organised a committee of shareholders, avowedly to support the board, or, to quote the exact expression made use of at the meeting, "to strengthen the board's hands." I have not heard of any investigation made by this committee, and I am in total ignorance of any complaint that has been made; but an intimation was made that this committee insisted upon a new board being elected. No self-respecting director will remain in office when informed that the shareholders do not desire his services. Messrs. Thomas Bayley and Holt resigned on February 19th, leaving only Mr. Mace and myself to carry on the business. I intimated to Sir Edward Jenkinson's committee that I intended to resign—and I hereby repeat the intention—as soon as new directors can be appointed. The proper course would have been for members of this committee to have accepted office themselves. The only member eligible and willing to join the board appears to be Sir Edward Jenkinson himself. I can truly say that he is not more eager to come on the board than I am to be relieved of my responsibility. He will have as colleague Mr. Mace—and I trust that they will conduct the affairs of the company as successfully, or more so, than the late board. The business of this meeting is to elect directors, and I will now call upon Mr. Allingham to propose Sir Edward Jenkinson's election.

Mr. Allingham said he did not think he need say anything in

favour of Sir Edward's candidature, for he was sure that shareholders who had followed the company's proceedings during his year of office would agree that they could not have had a better selection. He would therefore now propose that Sir Edward Jenkinson be elected a director of the company.

Mr. Harvey George seconded the motion.

The Solicitor (Mr. Greenip) suggested that words to the effect that Sir Edward Jenkinson be elected in place of Mr. Thomas Bayley, M.P., resigned, should be added, and this was accepted by the proposer.

Sir Edward Jenkinson said that at the last meeting the chairman said there was a proposal being made for the sale of the business of the company, but that he had no proposal to submit to the shareholders, though he desired to consult some of the largest of them, who, he understood, were willing to confer with the board on the subject. In consequence of this, he (the speaker) and some others whom he asked to join him, as individuals—not in any way, as he distinctly said at the time, as representing the company—met the directors. The proposal for the sale of the company seemed a very good one, and they intimated to the board that they were quite willing to agree to it if a sufficient guarantee could be obtained. The proposal, shortly, was this: That £60,000 in cash should be given to the shareholders and preference shares to the amount of £50,000, making eleven shares instead of ten. He and the other shareholders conferring with the board said they could not, of course, speak for the shareholders as a whole, but as individuals they were quite willing to support a sale on those terms. The only question was what was a sufficient guarantee, and that matter was threshed out. The intending purchasers offered £5,000, but he and those acting with him considered £10,000 would be a proper guarantee to be paid in cash. That was not accepted, and the matter did not go further. As to what they were to do to-day, considering the small number of shareholders present, he deprecated their passing a final resolution appointing him as a director, and suggested that the meeting should be adjourned. If this were done he would suggest that a committee be appointed, who could, in the meantime, select gentlemen to fill the other vacancies on the board, whose names might then be submitted to the shareholders, and a board thus elected would have the support of the main body of the shareholders.

Mr. Holt said he had been glad to hear what Sir Edward Jenkinson had said as to his joining the board; because last week he put it to him that it would not be fair, at a little meeting like this, called just before a holiday, and held the day after, to make such an appointment. The chairman had given them a very good and able account of the present position of the company. He might say that he had been a director from the formation of the company up till within the last few weeks, and as to its present position, he supposed no one would deny that it was at the top of the tree in the motor-car world. He did not think they would say that the directors deserved no credit at all for bringing the company to that position. When they looked at the company's record, they found that in the first year they had made a loss on the actual trading of about £3,500; in the second year they had made a loss of £1,400; in the third year—or rather, fifteen months—they made a profit of £1,045; and last year they made a profit of over £4,000. At the last meeting Sir Edward criticised the board because they spent £5,000 in plant last year, and said that but for that they could have paid a dividend; but the company would reap very great advantage from that expenditure in the present year, and he thought it would have been short-sighted policy to have stinted the company and handicapped it this summer, when they expected a large business, simply for the sake of paying a small dividend. As to the offer of Mr. Lawson; of course, there might be two opinions as to whether that offer was good enough to accept; but he did not think there could be any two opinions among business men as to the action of the committee, or the group of Sir Edward Jenkinson and his friends, in regard to the matter. The stipulation that £10,000 cash should be deposited, to be forfeited if the purchase were not completed within three months, was practically a three months option to purchase the Daimler Company at a premium, and, considering the price of the shares at the time, he thought that was an altogether unreasonable proposal. Naturally, Mr. Lawson declined to complete, and the matter fell through. Mr. Holt, in the course of further remarks, said he would be delighted to see Sir Edward Jenkinson as a director, but did not think he had the qualifications to make a good chairman. A long discussion then took place between the directors and the chairman pointed out that no committee could be appointed at the present meeting, the only business being the election of directors to fill the vacancies which had occurred.

Mr. F. L. Rawson remarked that the company was requiring money, and the point was how they were to get it. In order to obtain cheap money they should certainly have a board which would enjoy the confidence of the major portion of the shareholders. He therefore hoped some method would be adopted by which the shareholders generally would be able to make their own selection from names which would be submitted to them.

The chairman said he had distinctly intimated that it was not his intention to remain on the board. His wish was to retire some time ago; but had he done so he would have left Mr. Mace as the only director. It was quite true there had not been the greatest amount of harmony on the board; they worked together, certainly, but there was no cordiality. He advised the shareholders to elect Sir Edward Jenkinson, so that the board might then proceed to fill the vacancies. He would remain on the board only so long as he saw the company would not suffer by his retirement.

Sir Edward Jenkinson said that if he were elected it must be on the

understanding that he would have the right, with the other members of the board, to elect another director or two directors. That was the procedure which he would follow. There would be no need whatever to call a further meeting of shareholders if they elected him under those conditions.

The chairman said he thought that was the common-sense view of the matter, and he then put the motion to the meeting. In the result eleven voted in favour and three against, and the motion was therefore declared duly carried. The proceedings then terminated.

THE SPEED OF MOTOR-CARS.

THE recommendations of certain county councils to the Local Government Board with regard to the registration and speed of motor-cars has caused strong opposition among the manufacturers and sellers of motor-vehicles. Over 100 leading members of the trade have signed the following memorial, which is to be sent to every member of the county councils in England and Wales:—

We, the undersigned, manufacturers and sellers of motor-vehicles and their components, beg that members of county councils will give careful attention to the following representations:—It has come to our notice that certain county councils are recommending to the Local Government Board that:—(a) All motor-vehicles should be compelled to carry a distinguishing number, and that—(b) the limit of the speed of motor-vehicles should be reduced to ten miles per hour.

On behalf of the large staff of employes and artisans collectively engaged in our undertakings, on behalf of shareholders and others who have supplied capital to a total of £3,345,612 for the purpose of this industry, and on behalf of ourselves, who have devoted much time, labour, and energy to the establishment of our various businesses, we beg most earnestly to protest against these proposed further restrictions on the use of automobile vehicles, being fully convinced that should they be adopted they will most seriously damage, if not extinguish, this industry, which is now being revived after a period of sixty years. We wish to point out that on the Continent automobilism, instead of being hampered by vexatious and, as we unhesitatingly regard them, unnecessary restrictions, has received marked encouragement from the Governments, the press, and the public. In the first half of the century, this country was in advance of all other nations in the design and manufacture of self-propelled vehicles. In 1832 a company, called the London and Paddington Steam Carriage Company, successfully ran Hancock's carriage, "The Enterprise," between the City and Paddington. In 1833, Hancock's "Autopsy" ran for half a year daily between Finsbury Square and Pentonville. In 1834, his "Era" and "Autopsy" were run for public service between the City and Paddington, and carried many thousands of passengers. Another of his carriages ran between Stratford, Paddington, and Islington in 1836 for half a year. Gurney's steam coaches were worked by Sir Charles Dance between Gloucester and Cheltenham, and Scott Russell established a service between Glasgow and Paisley. There is evidence to show that in the Thirties, these vehicles were being run with commercial success, and the vehicles of Maccaroni, Squire, Hill, Summer, Ogles, Church, Gibbs, and others, were on the eve of success. Legislative and other restrictions were, however, introduced of so stringent a character as to effectually kill enterprise and invention in that direction until their partial removal by the Light Locomotives Act, 1896. During the last four years, self-propelled vehicles have been free to use the roads, and there is every sign that those of the public who have had the advantage of realising from experience how far motor-vehicles are likely to fill the demand for increased facilities of locomotion have become enthusiastic supporters of the movement. We are convinced that, unless the movement is hampered and practically destroyed by legislative restrictions, there will very shortly be established in this country an industry of vast proportions, giving employment at high wages to many thousands of persons, and producing vehicles which will be of untold benefit to all classes in this kingdom.

In proof of this assertion, we beg to submit, for the consideration of county councillors, the following statement of the magnitude which the industry has already assumed in France:—

Workmen.—The number of hands employed in the industry is about 100,000, and if the allied trades be taken into account, one may put down 100,000 as a moderate estimate.

Constructors.—Some 100 firms are supplying the public with automobiles, but about 300 firms are actually constructing self-propelled vehicles, and an enormous amount of experimental work is being done.

Output.—1,500 cars and voiturettes, and 4,000 motor-cycles, valued at nearly £1,000,000, are estimated to be constructed yearly in France.

Leading Firms.—

Name of Firm.	Area of Works.	Yearly Output.	Workmen.	Capital (francs).
Panhard et Levassor	8,000 metres	300 vehicles	500	5 millions.
Peugeot	8,000 "	350 "	500	
Mors	3,000 "	100 "	60	2 millions.
De Dion	14,000 "	400 "	—	—
		(3,200 motors)		
Richard	4,000 "	150 cars	—	3 millions.
Dietrich	4,400 "	150 "	—	2 millions.
Clement	14,000 "	—	500	—

The export of automobiles from France in 1900 was at the rate of £330,000 per annum. We respectfully but emphatically submit that it is impossible and unjust for any person to make a recommendation

concerning what is, or what is not, a safe speed for motor vehicles, unless he has practical experience of the control of motor vehicles, seeing that what would be undoubtedly an unsafe speed for a horse-drawn vehicle is a perfectly safe one for a motor-propelled vehicle with its exceptional power of arrest and direction. In confirmation of this statement we beg to remind county councillors that in France, where the authorities have had a large experience of automobile traffic, the maximum speeds have been now fixed at 18½ miles (30 kilometres) on country roads, and 12½ miles (20 kilometres) where there is considerable traffic. Furthermore, we have evidence that in cities and towns where electrically-propelled tramways are in use, the speeds of these tramcars frequently exceed 15 miles per hour, and they often travel up to 20 miles. We submit that if, in a city, a tramcar, which has a run on an arbitrary fixed course and has not the safeguard against accident derived from facility of direction of the motor-vehicle, can be run with safety at the speeds above mentioned, the restriction of the speed of motor-vehicles in the open country to ten miles per hour is not only unjust but unnecessary and unreasonable.

We further submit that the compulsory numbering of private vehicles, which are propelled by mechanical power, would have a most damaging effect on the motor industry. Although such a restriction might be possible on the Continent, where there is not the strong feeling against public identification or the attraction of public attention which is the characteristic of the English gentleman, the stigma implied by the numbering of a motor-carriage would not be tolerated in this country, with the consequence that the motor industry would be most seriously damaged. We submit that in spite of the assertions that motor-vehicles are driven in this country at excessive speeds, there is no evidence that motor-vehicles have been directly responsible for endangering the lives of other users of the road to such an extent as to warrant any steps which may be likely to affect in this country an industry which, owing to early legislation, has been severely handicapped in the past, and which on the Continent is being encouraged by the heads of States, by Government Departments, by Municipalities, by the Press, and by the public.

FURIOUS DRIVING CASES.

At the Linlithgow Sheriff Court, last week, T. R. Outhwaite, Kingsburgh Motor Car Works, Granton, was charged with having on 12th March driven a motor-car under his charge in a furious and reckless manner on the highway in the village of Blackburn, whereby it came in contact with William McMaster, a lorryman, residing at Harthill, and knocked him down, to the injury of the person. A plea of guilty was tendered, under an explanation to the effect that the lorryman, who had been delivering goods at a house, had not taken cognisance of the speed at which the motor was travelling. On hearing the motor coming the lorryman rushed out of the house to his horse's head, and the car, although it was not going at a great speed, came up to him sooner than he had expected, with the result that he came in contact with one of its sides. Had he paid more heed to the speed of the car the accident would not have happened. A fine of 15s., or ten days was imposed.

At the Marylebone Police Court, on Tuesday, Edgar Savonneau, a Frenchman, aged 19, and describing himself as an engineer, residing at Notting Hill, was accused of driving a motor-car along the High Road, Kilburn, at a rate of speed that endangered the limbs and lives of His Majesty's subjects. Constable 173 S deposed that he was in the High Road between three and four o'clock on the previous afternoon and saw the defendant driving a motor-car at high speed. In order to keep clear of an omnibus he made a sudden swerve, with the result that he very narrowly escaped collision with a perambulator in which two children were riding. Having steered clear of what might have been a terrible accident, he ran full-till at an ice-cream barrow, which was smashed and capsized, the motor-car itself having its front part stove in. Mr. Plowden (to witness): How far off was the defendant when your attention was first attracted to him? About 400 yards, your worship. At what rate of speed did you estimate him to be travelling? At least twenty miles an hour. How did you arrive at that? He passed everything he overtook, 'buses and all. But a person need not be travelling twenty miles an hour to pass an omnibus. But he was passing bicycles as well, your worship, quite easily. How many bicycles did he pass? Twenty, sir. Twenty within a space of 400 yards? Yes, sir. Being holiday time there was a great lot of bicycles on the road. And at what rate of speed were they going? At a good rate, sir, and the defendant was going twice as fast as any of them. Mr. Plowden then addressed the accused, who spoke English very imperfectly: Well, now, what do you say as to your rate of speed? Were you doing twenty miles an hour? No, seven or eight. That is slow for a motor-car; why were you not going faster? Because I had my old lady riding with me. Mr. Plowden (glancing at the youthful appearance of the defendant): Your old lady! Your wife, do you mean? My missus, sir. The Under Gaoler: He means the old lady to whom the motor belongs, your worship; she employs him to manage it. On the magistrate inquiring whether this lady was present, Constable 173 S explained that she had been informed that it would be necessary for her to attend, but she had flatly refused to do so. The defendant said, in defence, that it was purely an accident. He was not going half so fast as the constable alleged. The bassinette containing the two babies got suddenly in his way, and it was in trying to avoid it that he ran into the ice-cream barrow. Mr. Plowden remarked that the whole matter turned on the rate of speed at which the motor was going

when seen by the officer, and as the evidence on this point was not indisputable the accused would be dismissed with a caution.

At the Abercynon Police Court on Wednesday, Mr. W. Parker Thomas, the manager of the Aberdare Valley Motor-Car Company, who was defended by Mr. W. D. Phillips, the secretary to the Company, was summoned for furiously driving his motor-car in Abercynon to the danger of pedestrians. Police-Sergeant Thomas Davies, who laid the information, said that on the evening in question he was standing on the Taff line near the station, when he saw a motor-car on the main road from the direction of Pontypridd. It was travelling at a very fast rate. It then turned down the hill in the direction of Aberdare, and came down the hill, which had a gradient of 1 in 20 at the rate of thirty miles an hour. Witness, as soon as the motor passed, went to the station and telephoned to Mountain Ash, but by the time the Inspector got down to the main road he found that the car had passed, and he telephoned to Aberaman, where it was stopped. The car had travelled from Abercynon to Aberaman, a distance of 6½ miles in twenty minutes. The magistrates' clerk: "That would be nineteen miles an hour." The witness was cross-examined at some length as to the speed, and had to admit that he had not timed the car, he only judged the speed by seeing it travel, it was practically a guess. He said that he walked from the spot where he stood to the police station whence he telephoned in three minutes. His evidence was corroborated by Mr. Joseph Hiscock, the stationmaster at Abercynon, who said that his attention was drawn to the car by the passengers at the station who chaffed him that the car beat the Taff Vale trains hollow in the matter of speed, but he went one better than the sergeant and swore that the car was travelling at the rate of thirty miles an hour on the flat and forty miles an hour down the hill. The Bench having overruled a technical objection to the summons told Mr. Phillips that there was a case for him to answer and he put the defendant into the box. The latter swore that the motor was geared up to twelve miles an hour and could not travel beyond that speed on level ground, and that coming down the hill he had it in gear with the brake on; it was only running at the rate of eight miles an hour. Any one looking on always wrongly judged the speed of a motor, partly because they saw no motion, and because the car was low and the wheels small and many spoke. The summons was dismissed.

MOTOR-CYCLE RACING AT BRIGHTON.

THE five miles motor-bicycle and tricycle handicap at Preston Park, Brighton, attracted a large number of people on Easter Monday. Six competitors entered for the race. First heat.—1, Raymond Dennis, tricycle, 1,000 yds.; 2, E. Baruch Baker, tricycle, scratch. Also competed: G. Shippam, 500 yds.; Alfred Deveroux, tricycle, 750 yds. Won by over a lap. Time, 10 min. 10 sec. Second heat.—1, T. H. Tessier, bicycle, 1,700 yds. Also competed: J. H. Best, tricycle, 1,150 yds. Best's machine went wrong in the sixth lap, and he gave up. Time, 10 min. 33 1-5th secs. Final: Raymond Dennis, 1,000 yds., 1; T. H. Tessier, 1,700 yds., 2; E. Baruch Baker, scratch, 3. The scratch man was very slow in getting speed up, and meanwhile Dennis gained steadily on Tessier, and passed him a lap and a half from home. To the end Dennis careered round the track in great form, and won a fine race by nearly half a lap. Baker made up a lot of ground in the last lap, but his efforts came too late. Time, 9 min. 28 3-5th sec. The prizes were as follow: First prize, plated rose bowl and stand; second, fruit bowl and servers; third, plated nut stand. The tricycle run by Raymond Dennis was a Speed King of 2½ h.p. fitted with free clutch, water-cooled head, and spray carburettor, while the bicycle used by Tessier was of the Werner type.

A BILL has been introduced in the New York Legislature which exempts carriages and motor-vehicles propelled by steam, developing less than twenty-five h.p., from the law requiring the owner of a steam vehicle to send a person an eighth of a mile ahead on the public highways to warn others of the approach of such a vehicle.

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COMMENTS.

THE publication of the memorial drawn up and signed by motor-vehicle manufacturers for presentation to the Local Government Board has met with a most favourable reception at the hands of the daily press of the country. Indeed, automobilists and the motor trade generally may congratulate themselves that those who control our newspapers are beginning

to take a more reasonable view of the automobile movement; almost every paper in the land has this week had something to say on the subject, and with but very few exceptions have taken up the views put forward by the motor traders. The only outburst of "anti-motor-car" feeling is that in which the London correspondent of a Sheffield daily indulges. This writer is not only amusing, but at the same time displays his utter ignorance with the question with which he attempts to deal. Whilst admiring a journalist who tries to make the best of the gift of imagination, with which this gentleman is evidently endowed in a marked degree, his comments would, however, be worthy of respect if they only savoured of fact. The following extract on motor-cars may well serve as an instance of his rabid sensationalism:—"They are as ugly as sin—a traction engine is a vision of elegance compared with them; their stench is vile, their uproar is diabolical, and their drivers in attire and manner resemble Arctic explorers in a state of dangerous lunacy." Would some philanthropic motorist, pitying this gentleman's ignorance, offer him a ride on his motor-car? In spite of his anti-motor expressions there is still hope for his conversion.

The Daily Telegraph's Views.

As against the vapourings of the London correspondent of the Sheffield paper, the leader-writer of the *Daily Telegraph* deals with the same subject in a manner which cannot but win the respect of any reasonable individual. Referring to the proposal of the county councils to ticket each motor-car he says: "It would be the height of unwisdom to impose it upon the owners of automobiles. It would be as reasonable that it should be rendered binding upon the members of the Four-in-Hand or of the Coaching Club." On the subject of speed restrictions he winds up some cogent arguments in the following terms: "The great and conclusive objection to the measure is that its tendency would be to subject skill and knowledge to the control of ignorance and stupidity, and thus to impede invention and to delay the progress of improvement." In conclusion he says: "The restrictions against which the memorialists protest are as absurd in theory as they would be vexatious and ineffective in practice."

The Times Endorsement.

THE *Times* has done a splendid service to the development of automobilism by its admirable leading article of last Friday week. Nothing could have been more emphatic than its endorsement of the manifesto of automobile manufacturers, and its repudiation of the absurd suggestions raised in some

quarters as to numbering and the imposition of further speed limitations. Very gratifying, also, was it to see in Monday's *Times* a cogent letter from Sir Frederick Bramwell, one of the few men living who can remember the opposition to mechanical road traction in the thirties. It will come as a distinct surprise to many, moreover, to find that a Parliamentary Committee of 1832 actually reported favourably upon steam coaches, and that it was the hostility of other authorities that succeeded in strangling the new movement. On the following day a further letter on the subject of motor-cars was published in the same journal, from the pen of Captain the Hon. Cecil Duncombe, who testified to the entire unconcern with which the horses of the Riviera now regard the flying automobile, despite the races that take place there on the open road, and the high rate of speed that is at all times permitted. The Automobile Club could hardly do better than reprint both leading article and letters, and distribute them as widely as its funds will permit.

The Brighton Road.

LONDON motorists, out for a spin to Brighton, will find themselves brought to an untimely stop outside the Swan and Sugarloaf, Croydon, and requested to proceed by the side roads. From that point up to Purley Corner the road is "up" whilst the navvies are laying the electric tramways. As soon as the work is finished in that quarter, the road from Thornton Heath to Norbury will be torn up. In order to avoid delay and inconvenience motorists proceeding from London had better take the Clapham road, and, turning at Tooting, travel via Mitcham and Wallington, joining the Brighton road at the Old Mans, Coulsdon.

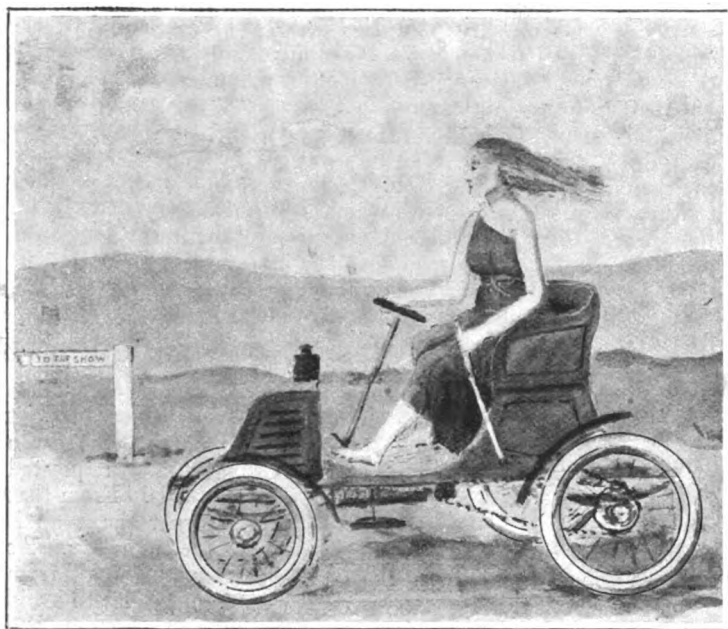
The Shah and his Motor-Car.

THE roads of Persia are not all that can be desired even by such a zealous motorist as the Shah, and he has, therefore, ordered all of them in the vicinity of his capital to be at once repaired and made suitable for motoring. In his ardour the Shah drives his motor-car along mountain paths where, according to his *mécanicien*, "I have passed in trembling, the roads being hardly safe for a camel." In other spots the ground is as soft as butter, especially in the rainy season. But in spite of these little difficulties and even of his trembling *mécanicien* the Shah only uses his horse-drawn Daumont when on visits of etiquette in the city of Teheran.

Our Antiquated Legislation.

THE regulations of narrow-minded Borough Councils with regard to motor service are already making themselves felt. What was regarded as a beneficial project for the farmer has now had to be abandoned. This was a scheme for the carrying of market-garden produce to the metropolitan markets by means of a motor-car service. Commenting on this, the Secretary of the Farmers' Collecting and Carrying Association says:—"Despite the fact of a keen desire on the part of farmers and fruit-growers for such a scheme, and the promise of an enormous quantity of freight, our antiquated legislation makes it impossible for the scheme to even pay its way. A fast motor is only allowed one trailer, while a traction engine, with

its three trailers, is limited to a speed of four miles an hour. It resolves itself into a question of speed. A motor and trailer, under the present regulations, carrying 6 tons must take two days for a round trip. The working expenses of four vans and four motors would amount to £3,000 annually. They could only earn £2,200 a year, by taking freight on the up journey at an average of 9s. per ton, and on the down journey at 3s. per ton." We hear, however, that a large strawberry grower in the Maidstone district has been looking into the question of conveying his fruit to the London market by road, and it is probable that some experiments in this direction will be made during the coming summer. From what we hear, it is intended to use light vehicles capable of carrying loads of about 6 cwt., so that it will be possible to make two journeys to town and back each day.



MR. J. H. KNIGHT'S SUGGESTION FOR THE EXHIBITION POSTER.

How Dare You, Sir?

SUCH was the expression used by Mr. Staplee Firth, the well-known solicitor, to a magistrate at Poole, in a case in which our friend figured as defendant. The charge was one of furious driving, the speed reported to be between fifteen and twenty miles an hour. Mr. Firth was cross-examining the constable, who certainly had a bad quarter of an hour, and is not likely, we imagine, to trouble what speed motorists go in the future, for fear he should catch another tartar. "How absurd," Mr. Firth heard one magistrate say to another, in regard to a perfectly legitimate question asked, and then the solicitor-defendant let loose the vials of his wrath and threatened to leave the court, seriously warning the Justices Shallow that if he did he should apply to the High Court for a "writ of certiorari" and quash their proceedings, should the verdict be given against him. The magistrates were of the usual country type, only a little bit more so, his Worship the Mayor being in the chair. The point of law raised was so clear that there was no alternative except for the case to be dismissed, the magistrates grudgingly doing so, refusing the defendant his costs.

The Art of Diagnosis.

A HINT that may sometimes prove useful is afforded by the following. An automobilist on a recent journey found his car going badly, with evident loss of compression somewhere, though a hasty inspection failed to locate it. Being near his destination, the house of a medical friend, who had recently become a convert to automobilism, he postponed

further examination, and on reaching his friend's house the latter offered to perform the operation—known in America as "bug-hunting"—for him. Within a very short time he came in with the information that he had spotted it without moving a nut, and "it" was a leak round the igniter porcelain. "How did you manage to do it?" asked motorist No. 1 in classic language. For answer the doctor produced a binaural stethoscope, and demonstrated how by its aid one could detect the locality of any unusual noise about the machinery, and the automobilist expressed his conviction that no tool-box should be without it. Truly, "there is nothing like leather!"

Motor-Cars at Aberdare.

WHEN the motors were first introduced into Aberdare, the brake owners and brake drivers attempted to prevail on the District Council to refuse to grant them licences to ply for hire, and with the assistance of a number of ardent socialists, who ostensibly urged the council to municipalise the motor-cars, they called a number of meetings at which resolutions were passed urging the Council to decline to license the cars. There efforts were, however, unavailing, and the cars have become extremely popular. It is clear, however, that the advocates of the policy of refusing them licences are still anxious to hamper the motor-cars, for at the last meeting of the Council, Councillor T. Lewis, who is a most determined opponent, endeavoured to get the Council to prohibit the motor-cars being run through the public park although the brakes are allowed to run through; the council, however, declined to pass such a resolution.

The Mors Race Timing Method.

AN interesting feature of the recent races at Nice was the timing method adopted, the vehicles being timed electrically by a system invented by M. Louis Mors, brother of the automobile maker of that name. Three watches were used, connected by wire—at the start, at the beginning of the kilometre and at the end of a mile. When each car started the two watches at the kilometre and mile marks were set going by electrical current and were stopped as the vehicle passed over the wires across the road. In this way the times of the flying kilometre and the standing mile were obtained without the slightest chance of mistake.

Leaving Motor-Cars Unattended.

OUR readers are aware that for some time past the City justices have interpreted the words, "There shall be in charge of a light locomotive when used on any highway, a person competent to control and direct its use and movement," to mean that the motor-car should not be left in the roadway by its occupant, unless he leaves a competent driver in charge of it. Mr. W. C. Bersey was summoned for leaving his motor-car opposite Winchester House in Old Broad Street, the only precaution which he took being to ask an old man who was selling newspapers to keep his eye on it; but before leaving it he had stopped the engine, and taken out the electrical interrupter and put it in his pocket. Mr. Staplee Firth defended Mr. Bersey, and argued that the motor-car at the time was not being used on the highway within the meaning of Article 2, Sub-Article 8, of the Local Government Board Regulations set out above, and he pointed out to the Court that as the engine was stopped the car was inanimate and could not move, and that it was very different to leaving a horse or horses standing unattended, because the horse could move of his own volition. Notwithstanding this, very often a small boy was left in charge of two horses, and this was sufficient to comply with the requirements of the law. It was, therefore, obviously unnecessary to leave anybody in charge of a motor-car. Mr. Firth also pointed out in favour of this argument, that Article 4, Sub-Article 4, of the regulations, said, *inter alia*, "He shall not quit the light locomotive without having taken due precautions against its being started in his absence, or allow the light locomotive, or a vehicle drawn thereby, to stand on such highway so as to be a cause of any unnecessary obstruction."

tion thereof." Mr. Alderman Green, who heard this case, stated to Mr. Firth in court that he had taken very great interest in the argument, and while sympathising with the same, the Justices had held a contrary view and always convicted; and that he did not feel disposed to take the responsibility of introducing a fresh decision. Mr. Firth applied for a special case, with a view to taking the decision of the Court of Appeal upon it.

Another Case and the Result.

SUBSEQUENTLY another summons was issued against a gentleman for leaving motor-car unattended, but he had removed the interrupter, and on his consulting Mr. Firth on the matter he advised him to ask the Justices to let the matter stand over until the opinion of the Court of Appeal had been obtained, or to treat the case on the lines indicated above. Since then the City Justices have reconsidered the matter, and Mr. Firth has been in communication with them. They have now decided to accept his interpretation of the law, and to instruct the police that the Local Government Board regulations do not require a competent person to be in charge of a light locomotive while at rest, provided that sufficient precautions have been taken against its being started in the absence of the driver.

Perishables by Motor Service.

A CORRESPONDENT appeals against "the regulations that seem to be framed with the sole and only intention of putting off the day when our roads must be widened throughout the country." He is of opinion that one solution of the unhealthy condition of British agriculture lies in the broadening of the country roads, enabling a quick motor-car service to be established between the metropolis and country towns and villages within reasonable distance. By this means, he points out that a farmer at Farnham could milk his cows at 5 a.m. and deliver direct to his customers in Grosvenor Square at 8 a.m., thus not only saving expense on his own side but conferring sanitary advantages on the consumer. All perishable foods could be sent a distance of thirty miles in two hours for half-a-crown. Our correspondent also supports the proposal of motor-car services as a solution to the overcrowding problems of great cities.

Electric Accumulator Progress.

It is frequently suggested that very little progress has been made in present years with regard to electric accumulators in this country. This is quite refuted by some comparative figures lately sent us by Mr. H. F. Joel. In 1890 electric storage batteries gave four watt-hours per 1 lb. of complete cell; in 1900 this had increased to eight watt-hours per 1 lb. of complete cell; while now the National motor carriage battery (Rosenthal) gives fifteen watt-hours per 1 lb. of complete cell, and has proved to be of greater durability. Mr. Joel informs us that whereas in 1890 the weight of a storage battery to propel a road vehicle twenty miles was 1 ton 4 cwt.; in 1901 the weight is reduced to 6½ cwt., and will propel a carriage over fifty miles.

The Herefordshire County Council.

THERE was a long discussion on the subject of motor-cars at the last meeting of the Herefordshire County Council, the matter arising on a report of the Roads and Bridges Committee recommending the numbering and registration of automobiles. Mr. F. Ballard made a rousing speech against the proposal, this gentleman considering that a motor-car driven at twenty miles an hour was very much safer than a dogcart driven at ten miles. Eventually, however, the following resolution was adopted:—That this County Council do co-operate with the Berks County Council in drawing the attention of the Home Secretary to the way in which motor-cars now traverse the roads, and in suggesting that every car should carry a number in a conspicuous place, and should be registered.

Mr. Mark Mayhew's Visit to Nice.

MR. MARK MAYHEW is back in town, from which he sped to the Riviera soon after his splendid victory in the Wandsworth election. He speaks enthusiastically of his experiences, which appear to have been most enjoyable.

The Automobile Club of Nice entertained him very hospitably, and elected him an honorary member of the committee, which was no empty privilege, as it enabled him to pass all barriers and go wherever he liked on the course during the races, a broad blue band, worn only by members of the committee, being the open sesame. Concerning his non-participation in the tourists' race, Mr. Mayhew ascribes it to two causes. In the first place, the system of handicapping was such that the heavier the vehicle was *per se*, the more it was required to carry in the way of passengers, and Mr. Mayhew would have had to take no less than six aboard his Napier. The second reason was the fact that all the foreign cars were fitted with brakes of a power as yet unknown in England, enabling the fourth speed to be used down hills of a type that an Englishman is accustomed to treat with extreme respect.



THE NICE WEEK. M. WERNER'S 35-H.P. MERCEDES CAR AND M. SCHNEIDER'S 40-H.P. ROCHET-SCHNEIDER CAR.
(Cliche de) (La France Automobile.)

The New Season's Racers.

WEIGHT-CUTTING, Mr. Mayhew reported, has been reduced to a fine art in the latest patterns of Panhard and Mors cars, and even the Gordon-Bennett Cup vehicles will be marvellously light—probably under one ton each. The French cars will be of 50 h.p., and excellent as was the display of the Mercedes cars in the Nice week, he does not think that they will compare with the newest patterns of the Mors or Panhard. The last named are fitted with the new Centaure motor—which is a beautiful piece of work—and the gearing has been very much improved. When worn the wheels can be removed without trouble, and new ones fitted at a cost of only 20 francs each, while the saving on the tires owing to the lightness of the cars is considerable. Mr. Mayhew, by the way, has brought over one of the latest 24 h.p. Panhards, and drove it from Southampton last Saturday in company with the Hon. C. S. Rolls. They were nearing Esher at the time the cars competing in Saturday's consumption trial were on their outward journey. The Cup race Mr. Mayhew considers a fairly open event. The chances of the Mors and Panhard cars he holds to be about equal, and as regards the Napiers their opportunity lies in their remarkable engine cycle power, though the tires will need to be nursed at every limited

owing to the greater strain to which they are subjected by the weight of the cars.

Future Developments.

So far as pure speed is concerned we seem to have but touched the fringe of future developments. Mr. Mayhew states that there is much talk in France of a possible combination of petrol and electricity. He himself, however, foresees great possibilities in the shape of petrol-cum-steam, the heat from the exhaust of a petrol motor being used to maintain the pressure in the boiler, and the steam being utilised in the main for rushing up steep hills without change of gear. The idea is a fascinating one. Who knows but that it may yet be carried into effect?

The Liverpool Heavy Motor Vehicle Trials.

MATTERS are progressing apace in respect of the forthcoming trials of heavy motor vehicles at Liverpool. Local Committees are now in course of formation at nine towns on the itineraries embraced by the trials, these committees including many influential merchants and manufacturers. The official programme, which will shortly be issued, will contain a description of each competing vehicle and complete profiles and plans of the 150 miles of roads to be traversed. We may remind intending competitors that the entries close on the 30th inst. On Monday, May 6th, Mr. Shrapnell Smith, the hon. sec. of the Liverpool Self-Propelled Traffic Association, will address the members of the Liverpool Chamber of Commerce in the Public Sale Room, Exchange, Liverpool, on the subject of "Motor Vehicles for Heavy Traffic: the arrangements for the forthcoming Lancashire Trials." This meeting is expected to be of considerable importance in its bearing upon future developments.

Motor-Cars for Military Purposes.

THE question of the use of motor-cars for military purposes is one which has been dealt with on frequent occasions in these columns, and it is very gratifying to find that Earl Roberts in his recent despatches on the South African War has given his support to our views on the matter. According to the Commander-in-Chief, traction engines and trucks rendered valuable services at such centres as Capetown, Kimberley, Bloemfontein, and Johannesburg, where coal and water were readily obtainable, but owing to the absence of fuel they could not be used on the line of march. From a military point of view Lord Roberts considers that the defect of steam traction lies not only in the impossibility of working it unless coal and water are available at each halting-place, but in the weight of fuel and water which the engine has to drag along, thus expending much of its tractive force. This defect would, Lord Roberts says, be greatly lessened if an efficient oil motor could be substituted for the steam motor, as in that case the coal would be replaced by a more portable and concentrated description of fuel.

The Wastage of Horses.

LORD ROBERTS also gives a piteous tale of the loss of horses. Not only has the wastage of horseflesh by cavalry and artillery been beyond all expectation, but from the beginning of the war up to October 31st, 1900, the Department has been called upon to handle a vast number (60,711) of mules for transport purposes, and 57,330 cobs for mounted infantry. The number of cavalry and artillery horses that have passed through the Remount Department during the same period amounts to:—Cavalry, 21,252; and artillery, 9,385.

The Forthcoming Exhibition.

A CORRESPONDENT, who signs himself "Enthusiast," writes:—"As we are now approaching the Automobile Club Show at the Agricultural Hall, Islington, would it not be as well that manufacturers should arrange to have their exhibits ready to time?" This is a wish we heartily echo, and for our own part

may say that every facility will be given to that end. Speaking of the Exhibition, we may mention that a general meeting of members of the Automobile Club and other members of the Motor Union will be held at the Royal Agricultural Hall on Wednesday, May 8th, to elect representatives on the Executive Committee of the Motor Union. It is also probable that during the week of the Exhibition, possibly on Wednesday, a Club dinner will be held at the Agricultural Hall, at which foreign visitors will be the guests of the Club.

The Automobile Club and its Work.

MR. S. F. EDGE has sent us a copy of a letter he has sent to the Secretary of the Automobile Club, in which he states that as a private user of an automobile, and also as one interested in the trade, he has felt for some considerable time that the Automobile Club has been spending large sums of money in fighting legislative restrictions, which, if they had been carried through, would have had the effect of almost entirely crippling the automobile industry in this country. Mr. Edge considers that the manufacturers and agents in this country do not sufficiently appreciate the work that the Automobile Club has done, and that the manufacturers should at any rate support the fund of the Club and not leave it to the hundreds of private members which the club at the present time possesses. With a view of setting an example, Mr. Edge, on behalf of the Motor Power Company, enclosed a cheque for fifty guineas, and stated that Mr. Paris Singer, of the City and Suburban Carriage Company, had promised to do the same. Mr. Edge has certainly done well in bringing the matter before the trade, for it is impossible to estimate the good work which is being done by the Automobile Club in the interests of the movement. Their recent action in opposing the County Councils is but one item, and yet this campaign, which undoubtedly has had the effect of preventing restrictive measures being imposed, has cost the Club no less than £500, all of which has to be taken out of the members' subscriptions. Not only have the demonstrations had good results from a political point of view, but they have had the effect of bringing the possibilities of the automobile vehicle practically before a large number of influential men who have seats on County Councils, and should therefore tend to spread the use of motor-cars. Needless to say, the efforts of the Club benefit every user of a motor-car, and its work is of the most vital importance to the trade throughout the country.

The Chicago Motor-Car Service.

THE Illinois Electric Vehicle Company, which has for many months operated one hundred electric motor-cabs in Chicago, has been compelled to go out of business because the bad condition of the Chicago streets has made unbearably heavy the burden of expense for repairs to the vehicles in use. In connection with the foregoing the following from the *Electrical World* sheds considerable light upon the problem which such companies have attempted to solve:—"Public carriage service in America is notoriously at once the worst and the most expensive in the civilised world, chiefly because tramway service is so cheap and so good, and so ubiquitous. American practice in this respect has forced the public to look upon cab service not as an everyday necessity, but as a luxury of dubious utility. This is the secret of the enormous popularity of trams. They may be crowded and stuffy, but they can at least be boarded rather easily anywhere, run at good speed, and demand only the payment of a fixed and moderate fare. From the general ill odour into which public carriage service has come, a new line of carriages, even automobiles, has a hard task in winning popularity."

IN connection with a hippomobile meeting which the Hamburg Polo Club is organising for the 29th and 30th May next, a race for motor-voitures is being organised. It will be run off on the Rotherbaum track in Hamburg, and among those eligible to compete are the members of the English Jockey Club.

THE ALBION MOTOR-CAR.

THE accompanying illustration shows one of the latest additions to the list of British-built cars, and which is already meeting with a great deal of favour on the north side of the Tweed. It is the product of the Albion Motor-Car Co., 169, Finnieston Street, Glasgow, and is manufactured by them under their own patents. The motor is petrol driven, and is of the two-cylinder horizontal balanced type. It is substantially built throughout, all the bearings surfaces being very ample, and it develops 7 h.p. on the brake when running at the maximum speed of 700 revolutions per minute. It is fitted with an adjustable governor and, when desired, with an accelerator to increase the engine speed. The power of the engine is controlled by a variable expansion gear, the controlling lever being at the driver's right hand. By means of this lever the engine can be worked from zero up to full power, and the speed of the car regulated from a crawl up to top speed. The car has two forward speeds and a reverse motion, the changes being obtained by a special arrangement of clutches and gear wheels always in mesh. The changing is claimed to be a simple and silent operation, and it is quite unnecessary to release the engine clutch when changing from the higher to lower speed, thus preventing any possibility of the car running backwards on a hill while the change is being made. The gearing is enclosed and runs in oil. The power is transmitted to the rear axle by one central driving chain. There are two powerful independent brakes fitted, both acting at the rear axle, equally efficient forward or backwards. The ignition is electrical, the current being obtained from a magneto-generator of simple and reliable design. Strength, simplicity, and reliability are the main features of the car.

The wheels are of the artillery pattern, with hardwood spokes, and are fitted with solid rubber tires. The oil tank holds four gallons of oil, which is sufficient to run the car one hundred miles when fully loaded. We have not yet had an opportunity of testing the running powers of the new car, but we understand that a number have already been delivered, and are giving every satisfaction in the users' hands.

MESSRS. BROWN BROS., of Great Eastern Street, E.C., have just introduced a new motor-bicycle, the motor of which is located over the bottom tube of the frame instead of under, as in the Minerva. The driving is done by a twisted leather belt running over an inner driving rim fixed on the rear wheel by screw clips. All levers are convenient for handling, and a switch in the handle gives entire control over the motor. The motor is claimed to be powerful enough to drive the machine at any rate up to thirty miles per hour, and will run for eighty miles without recharging with petrol.

STEERING MECHANISM.

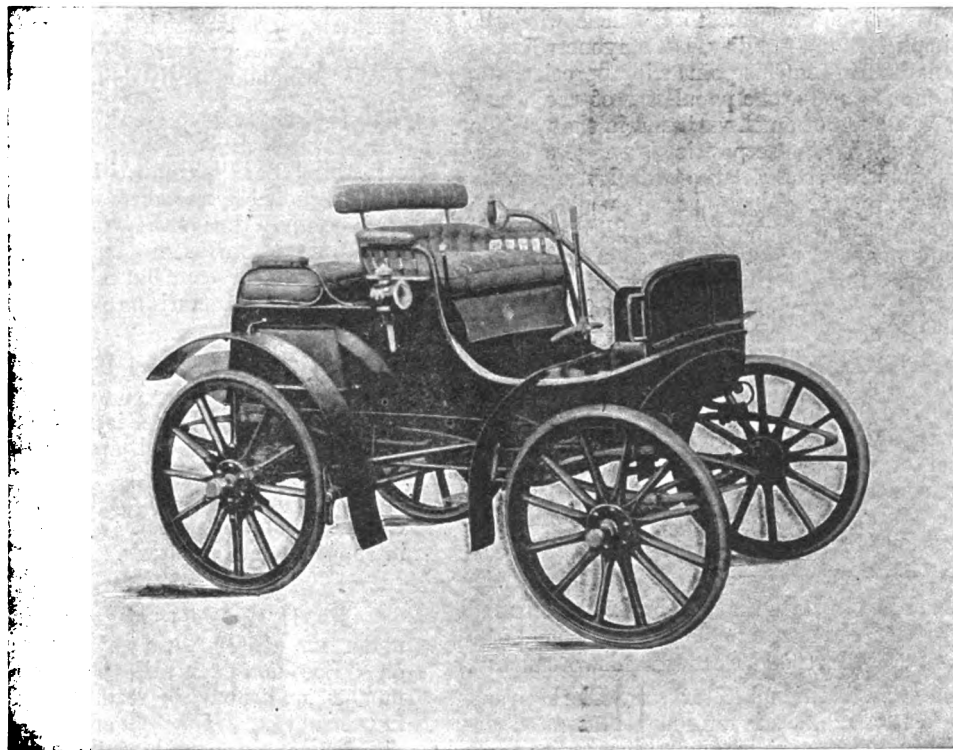
AMONG the minor details of car construction in which the variety characteristic of industries in an early stage of evolution is manifest, one of the most important is that of steering design. It may seem absurd to class such an important point among minor details, and if the whole subject were to be discussed—which might profitably occupy many pages—it would indeed be so; but the portion of it which claims attention here, and which has met with little technical consideration, is that dealing with the final link between the front wheels and the driver's hand, where the questions involved are almost as much of a physiological as of a mechanical nature.

Much of the comfort of a car depends on its having a good steering, not merely mechanically unimpeachable, but arranged with due consideration for the driver's ease, and for the fact that he may have to operate it continuously for hours at a time; it should require little effort to operate, and at the same time need no awkwardly long reach for sharp turns, conditions not always easy to reconcile, and of which the first is the most important, except in the case of dense traffic, which the motorists evade as far as possible.

The tiller of a boat would naturally suggest itself as the first model to the designer, though it is noteworthy that Cugnot's famous vehicle shows a pair of upright handles not unlike the Peugeot bar, while James and Anderson's steam coach had a species of "squirrel-cage" wheel that must have been by no means uncomfortable in practice. Gurney reverted to the "tiller," obviating its ineffectiveness to some extent by making it actuate the front wheels of a "bogie" fore carriage; but then, as till lately, the fact was overlooked that the helmsman of a boat sits alongside the tiller, not facing its direction, and can

pull or push it with ease; while the attempt to move a bath-chair handle from side to side involves wrist and elbow muscles that are comparatively feeble and untrained.

It is clear, therefore, that the steering handle, be it bar or wheel, should be actuated by a pulling or pushing, and not a transverse motion; thus the cross-bar pivoted at the side of the driver and lying across his knees, as in some American cars, is admissible, its objection being generally a somewhat cramping proximity to the seat; also the lever used on the Pennington, of pious memory, and on the Century tandem, while the bar pivoted at the driver's elbow and lying under his forearm is faulty, as calling on weaker muscles, though having a compensating advantage in affording a rest for the arm. A variation standing somewhat by itself is the Benz "dial-plate" which owes its merits to offering a fixed support and fulcrum to the hand, and depending mostly on the strong palmar muscles for its movement, rendering it non-fatiguing even for long periods. When the supporting dial is done away with, however, the arrangement becomes unsatisfactory and tiring in the extreme. The bicycle handle-bar embodies the right principle, but owing to its limited



THE ALBION MOTOR-CAR.

range of motion involves rather too high a gear in the steering, a movement of 45 degs. or less locking the wheels; but there can be little doubt that the ability to use either hand or both should be an essential characteristic of a good design.

There is little wonder, then, that the wheel type should have become almost universal, as satisfying the need for the "pull and push" action, for the bimanual steering, and for the possibility of gearing down, i.e., having a moderately "slow" steering without great inconvenience, and it is more important, especially as speeds increase, to have a powerful steering at small angles of deflection than convenience in making sharp turns. If a gear were arranged so that a given deflection of the wheel produced, say, 5 degs. of motion in the front wheels when near the centre, and double that amount when the helm was hard over, it would, probably, have advantages.

But another point of almost equal importance has not been so well met. There is no need, as in the bicycle, to consider anti-vibration devices; these have their proper place in the tires, in the connection between the car and the axle, etc., and no special provision therefore is necessary in the steering; but the situation of the latter with reference to the driver is important, a circumstance which should involve adjustment to his height, length of arm, and so on. It may seem a counsel of perfection to suggest such a provision, and difficult to reconcile with the absolute need for simplicity and solidity, but anyone who has driven a variety of cars differing in this point will appreciate the importance of it, and one reason for the popularity of the wheel lies in the fact that it admits of much variation in the position of the hands, so that any defect due to position is not so evident. Following this is the conclusion that a large wheel is preferable to a small one, not entirely on account of leverage, which may be otherwise obtained, but for the foregoing reason, added to which is the fact that a ring of large section is less cramping to the grasp than a small one. Several patterns of small cars are uncomfortable in steering, not so much on account of the small diameter of the wheel, but of the small section of its rim.

It is recorded of a former President of Queen's College, that, wishing a comfortable study chair, he covered a board with putty, sat upon it, and gave the impression to his upholsterer to be exactly copied: and without recommending such an unconventional method to the designer of seating accommodation, the principle, embodied perhaps in something on the principle of the "try-gun" with adjustable stock, might be usefully employed to determine the best position of steering.

MR. H. EDMUNDS asks us to state that the brakes he referred to in his recent address at the Automobile Club are made by Messrs. Taylor & Co., of 255, Earlsfield Road, Wandsworth, S.W.

WITH the opening of an additional factory, the Clarkson and Capel Steam Car Syndicate, Ltd., are issuing new illustrated circulars. Among their specialties are parallel radiators, made in three sizes, specially designed for working without a pump, chiefly on voituresses and small cars. Liquid fuel burners are also a speciality of the firm. It is claimed that these burners, which are of the true Bunsen type, can use any cheap common paraffin without smoke or smell. They are safe, durable, and simple, have few parts, and give entire satisfaction. Another speciality are the radiator coils, which can be supplied of any power and of special design when required.

THE Technical Committee of the Automobile Club of America has accepted a recommendation of the National Association of Automobile Manufacturers that a weight classification be adopted in the New York-Buffalo endurance test, and has decided to divide the competing vehicles into four classes, viz.: Three for four-wheel vehicles, divided as follows: Under 1,000 pounds, under 2,000 pounds, 2,000 pounds and over, and a fourth for quadricycles, tricycles and bicycles. The basis for judging the relative merit of the machines will be an average speed between controls. The limit of speed has been fixed at fifteen miles an hour and an average speed of twelve to fifteen miles an hour between controls will entitle a machine to a first-class certificate. There will be two runs of about forty miles each day, one in the forenoon and the other in the afternoon.

JOTTINGS BY A WORLDLING.

WE are getting nearer and nearer to the Gordon-Bennett Cup, and consequently all sorts of rumours are in the air, the most astonishing being that the Panhard cars are to have four cylinders behind as well as those in front, the extra set to be used for hill climbing only. The German Club having arbitrarily issued an edict that at least two Mercedes cars should represent it, Canello and Benz were left to decide between themselves which should fill third place. The Mannheim firm, however, took umbrage at the Club's decision and retired. Will M. Canelloopoulos do the same? It will be a pity if he does, as we expect so much from him after his wager. *Cent vingt à l'heure!* It will not be quite that, but the pace will undoubtedly be tremendous. There is every reason to suppose that it will be the most exciting international contest that has ever been held in any branch of sport, not excepting Gladiateur's Derby and the great match when Aubrey Patton first won the Grand Prix at Monte Carlo for England.

I SHALL be as much interested in the performances of the tires as of the cars. France will have Michelins, Germany Continentals, and England, I suppose, Dunlops. It is to be hoped that the Coventry company will make a mighty effort, as Messrs. Napier are undoubtedly doing. One puncture this year may be fatal.

RULE 9 of the competition runs as follows:—"The cars must be constructed by members of the competing clubs, and the two seats occupied during the whole time of the race." The second part is, of course, nonsense, as you cannot do repairs remaining placidly in your seat; but is the first part adhered to? It appears to be a very democratising regulation.

I HAVE always thought that a small boat fitted with a 2½ h.p. De Dion or similar motor would have a great success on the Thames. It should be cheap—say £50 more than the boat itself. This would allow a good profit to the manufacturers, and be *dans les prix* of a large percentage of riverside-folk, to whom a steam or electric launch is out of the question. The only objection is the smell of the petrol. I should not care to be the first to introduce it into Boulter's.

MR. H. G. WELLS, the novelist, is writing a series of articles under the title "Anticipations" for the *Fortnightly*. The first, on "Locomotion in the Twentieth Century," appears in this number, and should be read by every one who takes an interest in the subject. It is full of common-sense, well set down, and his clear, positive style is most convincing, but he makes one horrible suggestion—in a half-hearted way, it is true—that the roads for motor-cars "will be made of very good asphalt, sloped to drain."

I HEAR Sir William Ingram, of the *Illustrated London News*, has just bought a car, an earnest, let us hope, of more Press assistance for our cause. *A propos*, Mr. Frank Harris, the author of "Mr. and Mrs. Daventry," and some time proprietor of the *Saturday Review*, is about to start a new sixpenny weekly. I saw him the other day, and he told me he was going to show his gratitude to the motor-car by "puffing" it as much as possible. We have been for many wonderful drives together in the South, but in England he seems to prefer his American trotters, for though I know he has an Orient Express I never see him on it.

MR. CHARLES D. PHILLIPS, writing in the *Western Mail* on the "Speed of Motor-cars," proposes that a similar demonstration to that to be given to the Gloucestershire County Council, at Gloucester, on Saturday, the 27th inst., should be given to the County Councils of Monmouth and Glamorgan.

THE PETROLEUM-SPIRIT DISTANCE CONTEST.

THE petroleum-spirit distance contest, organised by the Automobile Club, was held last Saturday afternoon. The trial was confined to vehicles carrying not less than two persons, owned and driven by members of the Automobile Club, or of affiliated clubs. Heavy leaden clouds ushered in the early hours of Saturday morning, and before the day was very old rain began to fall in pitiless torrents, accompanied by a cold driving wind. Before long London streets became a veritable quagmire, auguring very badly indeed for the state of the country roads. Under such unfavourable auspices, the question of abandoning the contest was seriously discussed in certain quarters, but on inquiry at Whitehall the idea was scouted. So, making the best of the unfortunate circumstances, the enthusiastic competitors braved the opposition of the elements, and put in an appearance at Sheen House, well within the appointed time. A representative of the *Motor-Car Journal* was accommodated on a smart Daimler $4\frac{1}{2}$ b.h.p. Kimberley voiturette, which attracted a great amount of attention along the route, Mr. A. Instone being at the helm.

On arrival in the spacious courtyard attached to Sheen House all was bustle. Seven out of the eleven competing cars had turned up; the absentees were Mr. Harrington Moore's Delahaye car, Mr. H. F. Mulline's Benz car, Mr. Ernest de Wilton's Cycle Components machine, and the Hon. Leopold Canning's Century motor-tandem. Under the supervision of their observers the drivers were filling to the utmost extent the running spirit tanks of their cars, preparatory to the run. When all were ready, it was discovered that the officials had not yet arrived. Then came a long and anxious wait. Drivers, observers, and passengers stood in the cheerless coach-house or out in the pelting rain gloomily discussing the tardy arrival of the officials. Suddenly an ominous rattle, accompanied by an uneasy grunt, was heard out in the road. A few minutes later an old Daimler public-service car, with strained spring, lop-sided, and with the near-side wheels making a double track, rumbled into the yard. Its appearance was almost greeted with a shout. One by one it disgorged its shivering, care-worn occupants, some of whom immediately withdrew to the Club for shelter. Lt.-Col. H. C. L. Holden, R.A., F.R.S., Mr. W. Worby Beaumont, Capt. Tulloch, R.A., and Mr. Johnson, the club secretary, the members of the Technical Committee, then examined the competing cars. By 3.20 p.m. all was ready, and the cars, with their complement, began to buzz away in the following order for the thirty-mile contest: Mr. S. F. Edge's $10\frac{1}{2}$ b.h.p. Napier, Mr. Edge driving, having on board Dr. Dawson Smith (observer), Mr. G. H. Smith, and *mécanicien*; Mr. W. Astell's two-cylinder 7 b.h.p. New Orleans, Mr. Astell driving, with Mr. H. J. Swindley as observer, and another passenger; Mr. F. A. Rodewald's 6 b.h.p. New Orleans, Mr. Rodewald driving, Mr. C. L. Freeston (observer), and passenger; Mr. T. B. Browne's 6 b.h.p. Panhard, Mr. Browne (driving), Mr. J. Lyons Sampson (observer), Mr. Martineau, and Mr. Loeffler; Mr. Percy Richardson's $6\frac{1}{2}$ b.h.p. Daimler, with *tonneau* body, Mr. Richardson driving, Lord Kingsburgh, the Lord Justice Clerk of Scotland (observer), Mr. S. Spooner and *mécanicien*; Mr. A. Burgess's 7.2 b.h.p. M.M.C. phaeton, Mr. Burgess driving, Mr. F. F. Wellington (observer), Mr. R. B. Bruce, and *mécanicien*. Mr. Roger E. Fuller's De Dion voiturette, *mécanicien* driving, Captain Tulloch (observer), and Mr. Gorham.

The route taken was by the Sheen House entrance of Richmond Park to Robin Hood Gate, and (still keeping in the park) to Kingston Gate to Kingston ($4\frac{1}{2}$ miles), Esher ($8\frac{1}{2}$ miles), Cobham ($11\frac{1}{2}$ miles). At the top of the hill after Cobham (Pain's Hill, under suspension foot-bridge) proceed straight on and take first turn to the right on the Weybridge Road. At fork, $1\frac{1}{2}$ miles farther, take right hand road for Hersham ($16\frac{1}{2}$ miles). Turn to right for Esher ($18\frac{1}{2}$ miles). Turn left for Kingston ($22\frac{1}{2}$ miles); over Kingston Hill by High Road for $4\frac{1}{2}$ miles, then turn left down Roehampton Lane. Then to left along Richmond Road and to left to Sheen House Club (30 miles).

Soon after the competing vehicles had set out on their thirty miles course there were indications of a slight change for the better in the weather. The heavy downpour of rain had gradually merged into a drizzle, and, as time went by, the sun managed to struggle through the heavy black clouds. But it was only a momentary respite, and once again it began to rain heavily. This last change was, however, of short duration, and before long the rain had again ceased and the clouds once more parted, disclosing a rift of brightness.

In the meantime members of the Club who had come down to Sheen House, but were not engaged in the actual run, had retired to the house, where an enjoyable time was spent until the buzz of an approaching motor-car announced the return of the first competitor. It was Mr. W. D. Astell's New Orleans, and the news was brought that Mr. S. F. Edge's Napier had a tire blown off on entering Esher. The other cars followed in quick succession, the Napier being the fifth to arrive.

The Technical Committee then began to test the amount of spirit consumed by measuring the amount of spirit required to refill the running tanks. The following figures represent the consumption of each car with its attendant conditions:—

Car.	B.H.P.	No. of Passengers.	Weight without Passengers.	Consumption.
Mr. Edge's Napier...	$10\frac{1}{2}$	4	Not stated.	1 5 $\frac{1}{2}$
Mr. Astell's New Orleans...	7	3	7 cwt.	1 0
Mr. Rodewald's New Orleans...	6	3	6 "	7.9
Mr. Browne's Panhard...	6	4	19 "	1 2 $\frac{3}{4}$
Mr. Richardson's Daimler...	$6\frac{1}{2}$	4	19 "	1 1 $\frac{1}{2}$
Mr. Burgess' M.M.C. phaeton...	7.2	4	19 "	1 2 $\frac{3}{4}$
Mr. Fuller's De Dion...	$4\frac{1}{2}$	3	8 "	1 1.1

All seats in competing vehicles had to be occupied by passengers having an average weight of not less than $10\frac{1}{2}$ stones each.

The following are the official notes of the run of each vehicle taken by the observer:—

Mr. F. S. Edge's Napier. Stopped on test hill in Richmond Park. Three passengers alighted. Passengers pushed to restart on hill. On Esher Hill, on return journey, front tire burst. Twenty-nine minutes' delay.

Mr. W. D. Astell's New Orleans. On test hill in Richmond Park, two passengers alighted on steep portion. No stops.

Mr. Rodewald's New Orleans. On test hill, Richmond Park, two passengers alighted on steep portion. One stop at Cobham to examine cause of rattle.

Mr. Browne's Panhard-Levassor. Took full load up test hill in Richmond Park. No stops.

Mr. Richardson's Daimler. On test hill, Richmond Park, two passengers out for five yards. No stops.

Mr. Burgess' M.M.C. Phaeton. On test hill, Richmond Park, three passengers alighted and pushed; stopped for three minutes, owing to a burner going out; one passenger alighted on hill into Esher on return journey.

Mr. Fuller's De Dion voiturette. On test hill, Richmond Park, two passengers alighted and pushed; no stops.

The average speed in every case was up to the legal limit of twelve miles per hour.

The Committee of the Sheen House Club kindly arranged as to the supply of petroleum spirit. Messrs. Carless, Capel, and Leonard, and the Anglo-American Oil Company sent free supplies of their respective spirits.

After the trials a dinner was held at the Sheen House Club. The Lord Justice Clerk of Scotland presided, and at the end of dinner pointed out that the moral of the trial should be taken to heart by members, namely, that it is possible to go a long distance on a very small quantity of spirit.

THE people of Newcastle are in a dilemma owing to a stoppage of the tram service. The lease of the tramway company expired last week, and the company were unable to enter into another contract with the corporation. The municipal cars are not expected to run before the end of this or the beginning of next year. This should be an excellent opportunity for the motor-car service which has just been started.

CONTINENTAL NOTES.

By "AUTOMAN."



EASTER has been, on the whole, fine in the Champagne country of France, where I have been staying a few days, making my headquarters at Reims: taking excursions in the neighbourhood with my old friend M. André Deck, who is Peugeot's agent for this district. Peugeot is the most prolific of all the motor-car manufacturers, his two immense works giving him such facilities of production. M. Deck tells me that this firm is turning out twelve motor-cars per day, and still cannot give immediate delivery of the most favourite makes; but what is most remarkable about Peugeot is the variety of types which he turns out—open cabs, closed broughams, wagonettes, tonneaux, spiders, court hansoms, landaus, any shape, eccentric or according to custom—all seem to come easy to him. You can have your motor in front or behind, just as you like. M. Deck took me out amongst the vineyards of Vergenay and Virzy (which give the bouquet to the best champagne) on his new 4 h.p. voiturette, and it certainly climbed the hills in good style and averaged a steady fifteen miles an hour. The roads in this part of France, as indeed nearly everywhere in the country, are wide and good, and the whole country is just breaking into spring.

MOTORISTS who desire to visit the district will find a good welcome for themselves and their cars and good accommodation at the Lion d'Or in Reims, which stands just by the fine old Cathedral and next door to the house where Joan of Arc stayed when she came there to cause King Henry to be duly crowned and consecrated, like his ancestor, King of France and Navarre.

THE German military authorities seem to be the first to have inaugurated seriously an automobile section of the forces, and they seem to have done it after careful study of the subject, and in a most practical way. The staff are to have special cars constructed to carry them about, and these cars are to be fitted with tables, so that whilst travelling over the ground the staff can study the plans of the country and thus make a further economy of time. Automobile armour-protected Maxim batteries, too, have been ordered, and also smaller cars, which will be used in order to rapidly verify the effects of cannon fire. It does not seem quite clear how this latter class are to be used, but I presume that they will observe the fire of the guns from different angles and quickly report the result. Some means will have to be devised to lay the dust for military motor-cars, for the small white cloud will render them quickly visible and excellent marks for the quick-firing guns; an automatic sprinkler should, however, be able to meet the difficulty, and then a low voiturette in a country of hedgerows or walls would not be easily distinguished.

M. LEON SERPOLLET gave an interesting lecture on automobilism in the Belgian Engineers' hall in Brussels last Saturday evening. In his remarks M. Serpollet, as could only be expected, gave the first place to steam, and cited the advantages he claims for it over its competitor, explosive gas. In his concluding remarks M. Serpollet told how he had driven King Leopold II. of Belgium in Paris, and how the King had recommended him to visit Brussels and give a lecture on the subject of the safety from accident secured by the greater power of quickly pulling up possessed by the motor-car over the ordinary horse-drawn vehicle—safety, not only for the occupants of the vehicles, but also for the pedestrians, who will be much less in danger when all carriages can stop as rapidly as automobiles.

SPEAKING of Leopold II., it seems that he has taken to driving his own car, and it is rumoured that he is to be seen flying up the hills on the Littoral at a great speed. He holds the record amongst kings, as none of the other Royal motorists seem as yet to have taken to the helm. We may yet live to see King Edward VII. driving Queen Alexandra through the Park.

THE Emperor of Germany has authorised the Duke of Ratibor, president of the German Automobile Club, to announce to the A.C.F. that he will offer a prize in connection with the Paris-Berlin race. This royal offer should give an additional stimulus to the event and the industry.

ITALY is now following the lead of the 1,000-mile Tour. There are already fifty competitors for the coming tour round Italy, and the Minister of War is sending two officers to accompany it and make a report.

MICHELIN continues his "Monday's" in the *Auto-Velo* this week by treating the question of the best way to preserve rubber. Light and change of temperature seem to be its two great enemies. Bright light acts chemically on rubber and hardens it, taking away all its elasticity. Sometimes, when outer covers have been left for a long time in a show-room window, they become hard and brittle like wood. It is the blue and violet rays of the solar spectrum which attack the rubber, the red rays having no action on it. Variations of temperature are the cause of an infinity of little slits, which day by day grow bigger and bigger until they render the objects useless. Rubber must therefore be kept in a dark place, in an even temperature. Moisture should be avoided, as it rots the canvas of the covers, though it has no effect on the rubber. A dark room in a house is the best place to keep your spare tires, the covers of which should be left wrapped up in the packing canvas. The inner tubes should be placed flat on the ground to avoid folds. All these precautions apply to new tires, those that have been already in use some days get less sensible to light and change of temperature. On coming in from a run the mud should always be wiped off the outer cover.

THE Automobile Club is organising a hill-climbing trial for July 6th next, open to all motorists.

THE members of the Irish Automobile Club will hold a run from Dublin to Delgany to-day (the 20th inst.), the out and home distance being thirty-six miles.

WE made a call at the London depot of the Hozier Engineering Company, in Baker Street, W., on Monday, and assisted at the departure by road of an Argyle 5 h.p. voiturette for Mr. Fisher, of Tollesbury, near Colchester. Another car was being despatched the same afternoon to Ealing.

AMONG the first to acquire one of the Excelsior motor-bicycles made by Messrs. Bayliss, Thomas and Co. was Mr. F. A. Wallen, of Dublin. The machine has up to the present covered over 600 miles, and has answered every test in a most satisfactory way. With regard to the dangers of side-slip, Mr. Wallen reports that his experience is that at a moderate rate of speed on the most dangerous kinds of greasy roads it is less liable to slip than an ordinary cycle.

THE Belgian Minister of Railways has decided that in future motor-cycles, if going by passenger train and accompanied by their owners shall be taxed as ordinary luggage. Unless the rules are strictly carried out, railways refuse to accept responsibility and will tax the motor luggage according to its weight plus 50 per cent. The charge is six centimes per 100 kilos per kilomètre, every additional ten kilos being subject to a further *pro rata* charge.

A SOCIETY of persons interested in petrol substitutes has been formed in Germany to encourage the invention of an article which can be used as petrol. The society has decided to organise an international competition, and to offer a prize of £50 for the best invention. Among the conditions are: 1. The substitute and its gases must not ignite and neither freeze nor explode when in common use. 2. It must not affect cloth, colours, or such tanks and tubes as it may come in contact with. 3. The cost must not be higher than for the ordinary article, and not be subject to so many market quotations. Particulars of the competition, which is open till the 1st July, can be obtained from Mr. G. Dreyer, of Hanover.

THE "LIGHT CAR."

THERE was a period in the automobile history of France when manufacturers were suffering from the "craze for lightness." The evil results of too light construction were not slow to make themselves felt, and as a consequence a reaction toward more substantial construction has now set in. No builder will now claim as an advantage that his vehicle is the "lightest ever built" or "weighs only so many cwt." Indeed, the name *voiturette* is to some extent becoming synonymous with frailty, insufficient power and other deficiencies, and for this reason the manufacturers building vehicles of more substantial construction—on carriage lines rather than bicycle lines—prefer to refer to them as "light cars." Many of the lighter and cheaper class of *voiturettes* are supported on wire wheels, are propelled by an air-cooled motor, and have practically no body except a sort of skeleton seat. The dimensions of the seat and of the space in front of the seat are generally very scanty, which make the vehicle most uncomfortable to the average person of generous build. It has only partially solved the problem, in many other respects falling short of the requirements of those who demanded lighter weight and lower price.

That this should have been the experience in France, where roads, as a rule, are very good, is, considers the *Horseless Age*, significant. The "light car" now produced by many manufacturers in France is, as stated above, more on the line of carriage construction than of bicycle construction, the principles of which predominated in the *voiturette*. From the heavy touring vehicle the light car is differentiated by its lower speed, smaller seating capacity, and consequent lighter weight. It is also considerably simpler in construction than the touring car. Whereas four-cylinder motors are now often used in touring cars, a single cylinder engine is the rule for the light carriage. There are fewer auxiliary devices, and the process of simplification has been carried right through to all parts of the vehicle. This simplification and lighter construction also give the "light car" an advantage over the touring carriage in the matter of appearance. It is less clumsy than the average touring car, and, at the same time, is devoid of the spider-like appearance of many of the *voiturettes*. The "light car," therefore, has many good features, and has certainly come to stay.

A FRENCH doctor has conceived the idea of fitting motor-cars with medicine chests containing everything necessary to render first aid to injured motorists.

THE Barford Street entrance of the Agricultural Hall will be available for private motorists during the period of the exhibition to drive their vehicles into, where they will be looked after and taken care of free of charge.

BARON DE KUSEL, writing from the Grand Hotel, Tunis, North Africa, to Mr. Roger Wallace, chairman of the Automobile Club, offers to place his services in Tunis at the disposal of the Club and individual members for motor-car tours in Algeria and Tunis. He speaks in the highest terms of the splendid roads which are available in that district, and states that there is excellent accommodation for cars, and also first-class European establishments where repairs of all sorts can be effected.

AN interesting little story comes from Mayet, a small town in France. It was in the early days of the motor car, when two inhabitants of the town purchased a couple of horseless vehicles. Either through ignorance or jealousy, the rest of the inhabitants rose in arms against the two *chauffeurs* and informed the local gendarmerie that the new vehicles were a nuisance and dangerous. In consequence every gendarme was on the *qui vive*, and no sooner had one of the poor motorists appeared riding through the streets on his car than he was pounced upon by one of the gendarmes and charged with furious driving. At the court, the gendarme, swelling with pride, gave his version of the affair, but, unfortunately for him, it was shown that the carriage could not run at more than fifteen kilometres an hour. The gendarme retired from court "a sadder but wiser man."

THE LOMBARD MOTOR-COOLING DEVICE.

WHEN visiting the London Autocar Company's dépôt the other day, Mr. Rush showed us a new motor-cooling device which he was fitting to a motor-tricycle. Instead of fitting small motors with a water-jacketed combustion chamber, M. F. Lombard, of Paris, the maker of the new device, introduces water, drop by drop, into the *culasse*. Fig. 2 gives a sectional view of the apparatus and Fig. 3 an end view. In addition to being employed to introduce the water, it is also arranged to take the place of the usual compression cock, it being screwed into the motor head. A small circular tank of a capacity of

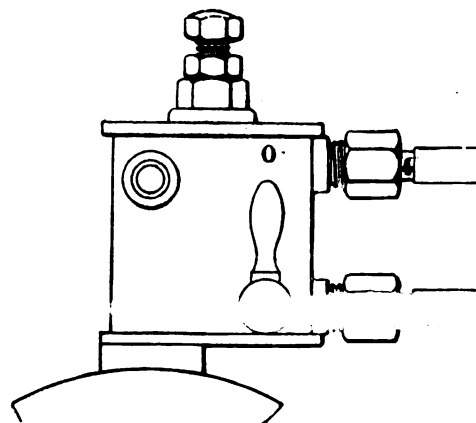


FIG. 1.—FRONT VIEW.

half a gallon of water is used in connection with the device, this being attached below the saddle, and is sufficient for a run of 125 miles. The tank is connected by piping to the joints R and H. A small drop of water from the tank enters by the pipe R to the three-way tap E, and thence under the ball B, and enters at each stroke of the motor into the combustion chamber, where the water is converted into steam. The screw V requires regulating once for all to allow a flow of water according to the

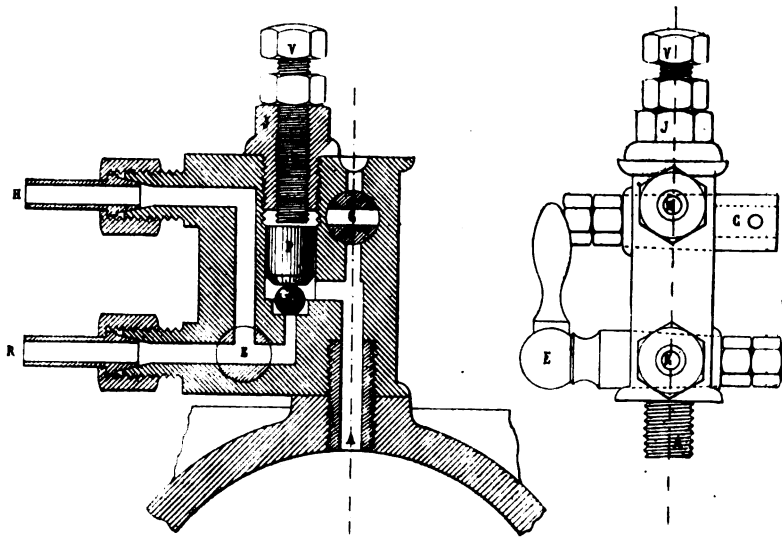


FIG. 2.—SECTION.

FIG. 3.—END VIEW.

size of the motor. To use the apparatus it is only necessary to open the tap E; when this is closed at R the water returns to the top of the tank by the pipe H. The vaporation of the drops of water is claimed to be sufficient to prevent the over-heating of the internal walls, and to maintain an equal temperature, while it causes no deterioration of the cylinder. C is the usual compression cock, which is opened and closed in the ordinary way. The apparatus, which occupies but a very small space, is made in two sizes—one for motors up to 3 h.p. and one for engines of from 3 to 6 h.p.

FLOTSAM AND JETSAM.

BY "FLANEUR."

THE Lord Justice Clerk is *facile princeps* as a shrewd observer of the features of road traffic. Every participant in the 1,000-Mile Trial will remember his weighty advocacy of the motor-car as a vehicle under the most admirable control and the graphic way in which, both at Manchester and Edinburgh, he declared his willingness to stand within a few feet of a car approaching at the rate of fifteen miles an hour. On Saturday Lord Kingsburgh acted as an official observer at the Automobile Club's petroleum-spirit trials, and utilised the oppor-

DESPITE all that has been said to the contrary by anti-automobilists, it is a perfectly fair statement to lay down that in ninety-nine hundredths of all the cases of actual fright that have ever occurred the fault has rested entirely with the driver of the horse. Either he has himself incited the animal's fears by his own mismanagement or he has brought out a quadruped which he knew beforehand to be totally unfit for road use. When a horse shies at your car you may wager your last shilling that that animal has shied at other things before ever it set eyes upon yourself, and that its owner is consciously employing what he well knows to be a menace to the public safety.

A NEW FOREST incident which has been described to me by



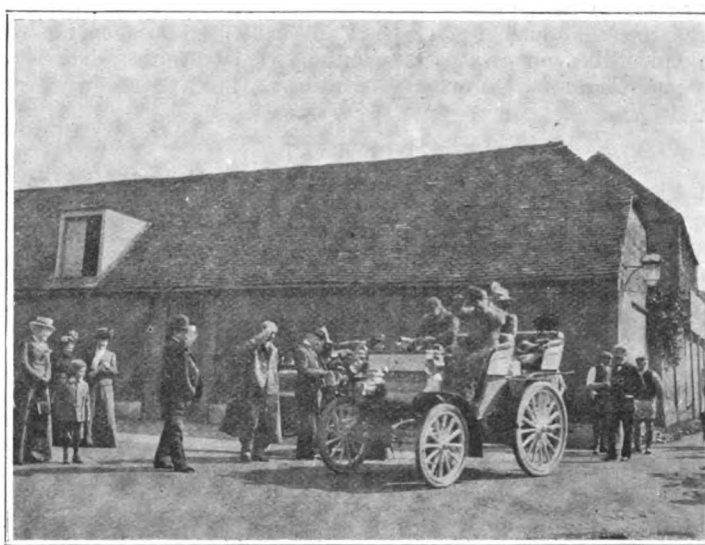
MR. H. EDMUNDS AND PARTY AT STONEHENGE.



MR. AND MRS. MANVILLE AT SALISBURY.



MR. BIRD AND PARTY ON 12 H.P. PANHARD.



MR. KENEALY AND PARTY ON 10 H.P. DELAHAYE.

Photos by]

THE AUTOMOBILE CLUB'S EASTER TOUR (see last issue).

[Mr. Howard Edmunds.

tunity of "observing" other matters by the way. In the course of the thirty miles journey of the car on which he sat he counted no less than fifty-three horses that were left unattended, in flat defiance of the law. Apart from the flagrant illegality of the conduct of every one of the drivers concerned, how forcibly this computation of Lord Kingsburgh's illustrates the hollowness of the contention that motor-cars are a perennial source of fright to horses. Now that motor-cars are a constant feature of Surrey roads, how could horse-drivers dare, to the tune of fifty within two hours, leave their animals unattended if the passing of a car meant certain fright?

Mr. F. A. Rodewald shows how the would-be biter may himself be bitten. Mr. Rodewald was starting from Lyndhurst for a drive on his 6 h.p. air-cooled New Orleans, and found some difficulty in getting past a big coach which barred the way. The coachman obstinately declined to make room in answer to the sound of Mr. Rodewald's horn, while the "boots" kept up a running fire of what he regarded as facetious comment on the car and indulged in mimicry of the noise occasioned by the motor. A quieter car, however, could hardly be conceived, for it has twin cylinders and is belt-driven. Eventually, however, Mr. Rodewald managed to scrape by, and then the off-leader, a

young and untrained animal, began to plunge. Apparently the coachman was more adept at blocking other people's progress than managing his own team, for he rolled right off the box, his fall being broken by contact with the wheel. The horses now scampered off into the Forest, with a full load of passengers, and the only individual who had pluck and presence of mind enough to do anything was Mr. Rodewald's fellow-passenger, who jumped from the car, chased the coach, and succeeded in checking the runaways. Meanwhile, of course, the car had been brought to a full stop, and—such is human gratitude—Mr. Rodewald was promptly visited with a torrent of vituperation by the proprietor of the coach, who, instead of helping to catch his horses, stayed behind to curse motor-cars in general and the New Orleans in particular. When it is remembered that automobile services have now been running in Bournemouth for months, and that no difficulty whatever stands in the way of training the horses of the neighbourhood, the culpability of the owner concerned is only too apparent, and scarcely seems to be excused by indulgence in blind rage and vitriolic invective.

PROBABLY the saving grace of humour would prevent an exhibition of this sort, but too many of those who drive animals seem only capable of flogging and cursing. It is a treat at times to see a horse well handled, but too often the driver insults the animal in the shafts by crediting it with a stupidity equal to his own. What earthly good does it do to "jag" the reins just at the moment when the beast wants calming? On the last day of the Easter Tour, for example, four cars were standing on the roadside between Bagshot and Virginia Water while the owner of one was repairing a broken chain. A pony-trap came by, and the driver began objurgating the owner of the foremost car for no imaginable reason, and used the customary kind expressions as to "them things having no right to the road." I got down and took the pony's head, and led the animal past each of the four cars in turn. In each case it was passing quite calmly, when the driver jerked the reins, with the result that it took all my strength of wrist to keep the pony quiet. Not only was the jerking absolutely superfluous, but it was definitely provocative as well. Properly handled the pony would have passed the cars without any outside assistance, but even with the latter the senseless pulling at its mouth made matters difficult.

THE only display of humour that I have ever seen on the part of the occupants of other vehicles than motor-cars was one encountered on the previous day. While on the way from Bournemouth to Salisbury we saw an uplifted hand, or rather four hands in line. The natural impulse was to stop the car, but a second look revealed one of the most comical turnouts ever seen outside the New Cut. A donkey of Lilliputian dimensions was dragging—no less than four men in a home-made vehicle scarcely bigger than a child's wheel-barrow. They were closely packed in Indian file and clinging to each other's shoulders, and, not in any spirit of malice, but out of humorous appreciation of the irony of the situation, they each held up a hand lest haply their mettlesome steed should be scared. And as the car sailed by a jocular remark anent "twelve an hour" followed us on the wind, and showed how well posted in the law were these humble claimants of their rights.

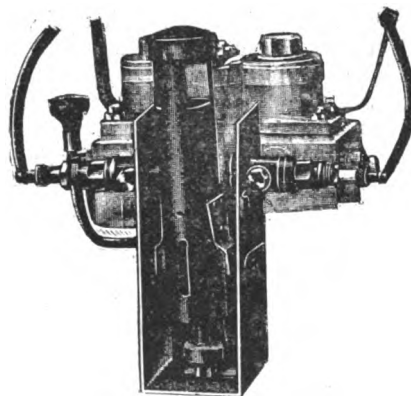
If a bombshell had fallen into the Automobile Club the other evening it could hardly have created more surprise than the sensational announcements of Mr. Engleheart, a member who had been over to Paris to view a new type of motor, which has been put forward since the recent show. There were only half-a-dozen members present, and the situation lacked something in dramatic completeness as a consequence; but the said half-dozen are not likely to forget the high tension current with which the atmosphere was charged for the time being. Not that Mr. Engleheart was striving after an effect. His tale was told quietly enough; it was the details that were dramatic. We fairly gasped as he recounted how that he had seen a motor placed upon the floor and running up to three thousand revolutions

a minute, so that it set everything around reverberating with the clatter, and yet—*mirabile dictu*—so perfect was the combustion that he could put his hand within six inches of the exhaust, and lo, there was no heat. For the present the name of the inventor must remain a secret, and likewise the means by which such marvellous results have been achieved; but this much may be added, that crude petroleum, not petrol, is employed; that lubrication oftener than once in six months is not required; that piston, cylinder, and valves alike remain unaffected by deposits; and that the car to which this extraordinary engine is fitted can be driven by one switch, at any required speed, and even reversed as well. It was a fairy tale in sound, but not in fact; for engineers—and Mr. Engleheart is one—are not given to romancing in that fashion. Meanwhile we await a solution of the mystery. It may not be long, however, before our curiosity is satisfied. I understand that Mr. Edison's Paris agent has seen the new motor and reported very favourably upon it, and that Mr. J. S. Critchley and a representative of the Vickers-Maxim firm have both crossed the Channel on a visit of inspection.

ACCORDING to the *Observer*, which published some interesting notes on automobilism last Sunday, the 6 h.p. car which was built for the Prince of Wales's trial by the Daimler Company, has now passed into the possession of Lord Hastings, at the price of £700. It is a welcome sign of the times, by the way, that so staid and respectable a journal as the *Observer*, a paper which is older than the *Times* itself, should recognise the position which automobilism has now attained, and devote space to what appear to be—and, we trust, will be—periodic notes upon the subject.

THE PEUGEOT COMBINATION TUBE AND ELECTRIC IGNITION.

IN a recent issue we referred to a new Peugeot voiturette we had inspected at Messrs. Friswell's dépôt, the two-cylinder engine of which was fitted with both tube and electric ignition. We are now able to give an illustration of the arrangement adopted. The picture shows the explosion chamber



end of the two-cylinder motor. It will be seen that there is only one burner, centrally located, for the platinum tubes of the two cylinders, the sparking plugs being located one at each side. The whole device is so arranged that either form of ignition may be used separately or both together at the will of the motorist.

WITH reference to the toll-keeper's little difficulty at Gainsborough, as reported in our last issue, Mr. Archibald Ford, of the Liver Motor Dépôt, Liverpool, informs us that, having occasion the other day to send one of their drivers across the ferry between Liverpool and Birkenhead with a car, he succeeded in getting the old Scotch ticket man to pass it as a "hand cart!"

CORRESPONDENCE.

STRAPS FOR MOTOR-BICYCLES.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—In your last issue Mr. Leonard advocates the use of "Collan" oil on the straps of motor-bicycles. May I corroborate his experience of the last two months by the results of mine, extending over nearly two years? Ever since I first rode my first Werner I have used oil on the strap, but I must admit that whenever I have mentioned the advantages to be derived by its use my account has been invariably received with an incredulous smile, even by Messrs. Werner's men in Paris. Personally, I have always used castor-oil, which gives the leather almost the adhesive qualities of india-rubber, so that the tension need not be so great (it is almost loose, even), and, therefore, the friction and consequent wear of bearings is greatly lessened. Probably "Collan" oil, being a special preparation, of which I had not heard till last week, is superior. If my further experience of the Werner machine, which has carried me about 1,000 miles since I last wrote, and that unfailingly, be of any use to those who still doubt the practicable nature of this sturdy little "beast," as Mr. Pennell called it, I believe, undoubtedly, weight for weight, the fastest and most powerful automobile which exists, I take the opportunity to say that it remains as satisfactory as before. A little while ago two litres (i.e., 3.52 pints) of petrol carried me eighty miles at an average rate of seventeen miles an hour. Now, at 1s. 3d. per gallon, that means 12.1 miles for one penny. No one could reasonably reproach it with gobbling up much petrol, at that rate! A careful attention to the throttle-valve and advance-lever procured the above result. I find the machine easily outstrips the average voiturette, both on the level and up hill, and as for the overheating which is always suggested to me, I may say I never saw, nor heard of; the least symptom of such an event—thanks to the excellent design and position of the motor—and also, no doubt, to the use of "D" oil. I consider that there is no question of the Werner being by far the best-designed motor-bicycle yet made, and have acted upon my belief by buying two, and I hope to get a third when an improved model is to be had, and doubt it soon will be, for the French are ever hard at work with their ingenious minds. I am further convinced that there is great danger in attaching a sufficiently powerful motor and its accessories to an ordinary bicycle, which was never designed to withstand these extra strains, and those who contemplate doing so cannot be too earnestly warned against the consequences of setting such forces at work, for very surely they are running the most serious risk in riding such a machine.

Yours truly,

A. L. BENETT.

UNATTENDED HORSES.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Acting as an observer on a car competing in the petrol consumption test last Saturday, I took the opportunity for noting on the thirty-mile run, the number of horse vehicles left unattended on the road. The total was fifty-three, of which eight, at least, were cases where the drivers were in public-houses. In several of these latter cases, there were teams of three horses. In addition there were four horses running loose. This suggests a legitimate matter for police energy and county council consideration.—Yours truly,

J. H. A. MACDONALD.

GEARS AND IGNITION FOR MOTOR-QUADS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—If "Chum" were to measure the size of his engine he would find it had a longer stroke than bore, which makes it a slow-speed engine, and if you give it a load to push when running slow it will push it but will not do so when running fast. With eighteen tooth pinion on, the gear is not high enough to keep the machine running sufficiently steady to act as an efficient fly-wheel; consequently, when it comes to a hill the

engine slows up, gives a few spasmodic kicks and stops. If you had a higher gear the engine would slow down to the speed at which it gives most power while the machine keeps running at a steady pace. I do not know whether I have made my meaning sufficiently clear or not, but if "Chum" or anybody else who has the same trouble cares to communicate with me I will prove it with a tricycle fitted with what I believe to be the best engine made—an Allard.—Yours truly,

G. T. TAYLOR.

A MOTORIST'S QUANDARY.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—As a constant reader, believing your journal is intended as a guide to would-be users of motors as well, of course, as a medium for the trade, one is surprised to find, in the advertisements, threats against buyers and users. You buy an engine stamped De Dion, if not bought through certain agents, it's an infringement; a certain carburettor attached to same, tires ditto, etc., etc., and are to be restrained. It strikes the novice who has bought at fancy prices that all these things cost so much above intrinsic worth because of their being patents, and that it is not his business any further. At the same time he is in a glorious state of uncertainty. Have I bought from right parties the right thing?—and not only this but it opens an apparent scheme of blackmail amongst agents, etc. I am told by advertisement in a recent issue that if I buy a Serpollet car in France I should not be allowed to run it in England, and suppose, as a natural sequence, that a car bought in England would not be allowed to run in France. If this is the law, why not extend it to reaping, mowing, sewing machines, etc., bought abroad.

I reckon the Americans would not try to run an industry to successful issue on such lines, but on the substantial improvement each maker invents. These quarrels amongst makers are causing an immense amount of injury to English makers by creating in the minds of would-be purchasers a feeling of insecurity and inconvenience.—Yours truly,

A. KENT.

THE NESSELSDORF STEERING GEAR.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—In your issue of 2nd March, we notice a letter from Mr. Kermode concerning the spiral grooves steering mechanism for motor-cars for which we obtained a Hungarian patent on 23rd July, 1900.

We have never heard of Mr. Kermode's steering mechanism, so that we are very much surprised to hear that this gentleman claims priority for this device.

In the letter Mr. Kermode does not mention the date of his patent, therefore we cannot state if his patent was granted before we applied for ours. Further, it is not possible to state if Mr. Kermode's steering system, used for steering apparatus on steamers, is identical with our system used for motor-cars, for the little drawing, without any technical description, gives no information in this respect. If Mr. Kermode will furnish the proof that his system is identical with ours and that he has applied any patent for the same purpose previously to us we are ready to draw back our patent immediately. At the same time we have the impression that there is an essential difference between Mr. Kermode's construction and ours.—Yours faithfully,

DER NESSELSDORFER WAGENBAU-FABRIKS-GESELLSCHAFT.

ASTER AND DE DION MOTORS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Mr. Canning's letter in your issue of March 30th can hardly be allowed to pass without notice. In comparing the De Dion and Aster motors, I can hardly help but think that he has allowed his enthusiasm for the particular type of motor used by him to warp his judgment, or possibly his experience with the De Dion-Bouton engine has not been of sufficiently long duration to enable him to have appreciated one or two of the points which have made the De Dion-Bouton engine superior to any other make.

Dealing first with the question of ignition, one of the beauties

of the De Dion engine lies in its absolute range of speed from 200 or 300 revolutions up to 3,000 revolutions a minute; the sparking and firing are equally certain, and the range is one which has never yet been equalled by any other make of motor. In regard to the actual contact breaker, it would probably be interesting to have the experiences of some practical users who have tried both systems. Mr. Canning may revel in the simple adjustment of the type adopted on the Aster, but possibly we are not all so expert in the re-adjustment, and after a very extensive experience with both types there is no doubt in my own mind that whereas the De Dion contact can be adjusted by any ordinary individual, the adjustment of that on the Aster requires much more delicate and careful attention. In fact, in regard to the proper adjustment of the sparking device, this is, in my opinion, one of the points where the Aster does not score.

Then, again, the trembler used by Messrs. De Dion and Bouton has ignition advantages over the ordinary type of make and break device, which only those of us who have ridden far can appreciate. Particularly have I noticed this in racing, and as I have raced on both types of motor perhaps my opinion may be of value. Surely Mr. Canning does not suggest that the De Dion-Bouton engine is made other than perfect in workmanship.

It is rather difficult to disprove facts, and the reputation and performances of the little engines built by Messrs. De Dion-Bouton and Co. speak for themselves.—Yours truly,

CHAS. JARROTT.

MOTOR-STABLING CHARGES.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I should feel obliged if any of your readers would give me information as to the usual charge of stabling motors per night on English roads. I was unfortunately obliged to stop a night last week owing to tire troubles at "The Swan," Alresford, and was surprised, on paying my bill next morning, to find that 5s. was charged for housing my voiturette. This I thought exorbitant, but paid it and resolved through the medium of your journal to obtain information as to what is usual. In the interest of motorists generally I hope you will publish my letter so that answers may possibly be obtained from others who have already had touring experiences in England.

Yours faithfully,

ALBERT HOOD.

THE WEAR OF PNEUMATIC TIRES.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—On the subject of the wear of pneumatic tires, referred to in your last issue, surely the short life of the back tires as compared to the front is to be accounted for by something more than the mere extra weight they have to carry. Is it not rather owing to the back wheels being the driving wheels and their rubber treads being dragged over the road surface, not rolled over it, whilst the internal heat too thus generated by the friction is surely a not unimportant factor in the work of destruction?—Yours faithfully,

G. H. SMITH.

THE CONTROL CONTESTS AT THE CRYSTAL PALACE.

TO THE EDITOR OF *The Motor-Car Journal*.

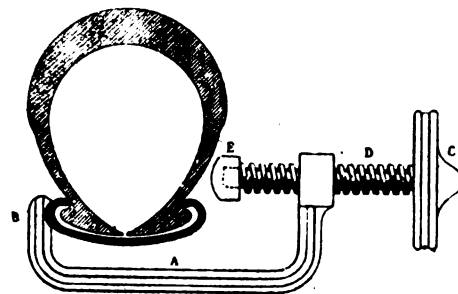
SIR,—I am the happy possessor of a Locomobile steam-car, also a 4 h.p. De Dion voiturette, and looking over the programme of the motor-car contests at the Crystal Palace on Saturday, the 27th inst., I note that there are sections for steam-cars and electric vehicles. It has occurred to me that, in all fairness to the little steam-car, there should be an open competition in which both steam and petrol vehicles may be allowed to compete. I was very much surprised at the splendid time that Mr. Letts's Locomobile did the exhibition mile in at the Crystal Palace on Easter Monday, and it is my belief that for short distances these little steam-cars can beat any type of car at present on the market. Therefore, I would like to see them have a fair chance in the forthcoming contests. I am afraid that I, myself, will be

on the Continent, or should have been delighted to have taken part and have shown to my friends what can be done with a small 4 h.p. steam carriage.—Yours truly,

FAIR PLAY.

A PNEUMATIC TIRE REMOVER.

ONE of the most disagreeable accidents that can happen to the driver of a motor-car is to find the outer cover of a pneumatic tire firmly fixed to the rim when it is necessary to remove it for repair. The wooden levers usually employed are frequently found to be insufficient to remove the covers of heavy motor tires, so that a brief description



of the device which has lately been put on the market by a French firm may not be without interest. This apparatus consists of a stirrup piece A, having at one side a notch B to fit the rim and at the other a boss through which is screwed the spindle D. This screw terminates in a button E, in which it turns easily. On fixing the device, as shown in the illustration, and screwing up, the most refractory cover can be removed, even if it is fixed all round the rim. It is also useful for replacing the cover. The part already in place, which has always a tendency to leave the rim, can be kept in position. It can also be used as a press when putting on a patch. The apparatus is being made in two sizes, one for motor-cycle rims and for tires up to 65 mm. and one for wooden wheels and tires up to 90 mm.

DURING the recent Automobile Club tour, a Mo-car was observed running about in Salisbury town.

It is reported that King Edward is to have an automobile specially retained for his use when on the Continent, and that the machine is to be kept at Brussels.

CAPTAIN PRETTY, of Ipswich, rendered considerable service with a Gobron-Brillié motor-car in connection with the transport department of the recent Easter volunteer manoeuvres.

MR. ARGENT ARCHER, the well-known photographer, has been appointed official photographer to the Automobile Club Show at the Agricultural Hall.

THE Eastman Automobile Co., of Cleveland, Ohio, are making a speciality of metallic bodies for steam motor vehicles. The bodies are claimed to be noiseless, incombustible, and practically indestructible.

At a special meeting of the English Motor Club it was decided to award a gold medal to the winner of every competition in the Control Contests at the Crystal Palace on the 27th inst., provided there are not less than five entries. In addition there will be certificates for all who successfully run through their competitions. Monday next, the 22nd inst., is the last date for entries.

THE Boron Battery Electric Supply Co., of 131, St. Domingo Road, Liverpool, have forwarded us a circular on their Selenio Phospho Accumulator. These accumulators consist of single cells giving two volts each, and are usually supplied in four-volt sets, consisting of two cells in a light wooden tray. Any number of cells can be used if greater power is required.

WHILE touring recently in the New Forest we had the opportunity of riding behind a Singer motor-bicycle. The roads were extremely heavy, and some of the gradients stiff, yet the rider all the time he was in view was never observed to pedal once.

THE DOCTORESSE MOTOR-CAR.

LA SOCIÉTÉ FRANÇAISE D'AUTOMOBILES (GAILLARDÉT), of Suresnes, near Paris, have lately introduced a new type of "Doctoresse" car, of which we are this week able to give illustrations. The frame of the car is built up of channel steel, and carries the whole of the motor and transmission mechanism, so that any type of carriage body can be fitted. The frame is suspended by springs on the axles both

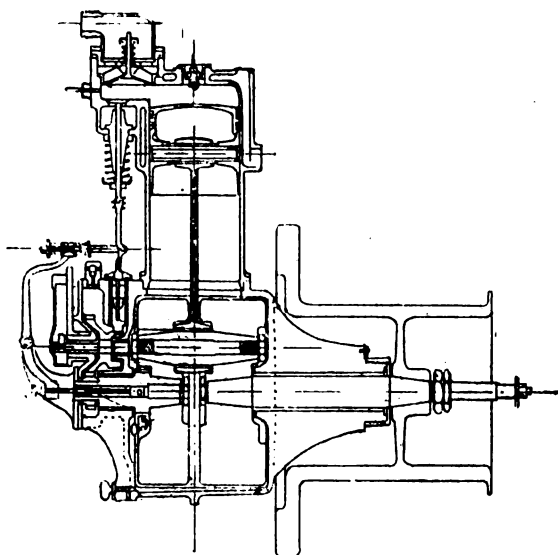


FIG. 1.—SECTION OF GAILLARDÉT 6 H.P. MOTOR.

fore and aft. The engine (Fig. 1) is of 6 h.p.; it is of the single cylinder vertical type, and balanced by means of counterweights on the flywheel. There is also a regulator, allowing the speed to be gradually increased from 600 to 1,600 revolutions by acting upon the exhaust valve. The motor is, of course, water jacketed, and in the event of the pump failing to act, the water would continue to circulate by gravitation. Furthermore, if from any other cause the jacket should be deprived of water,

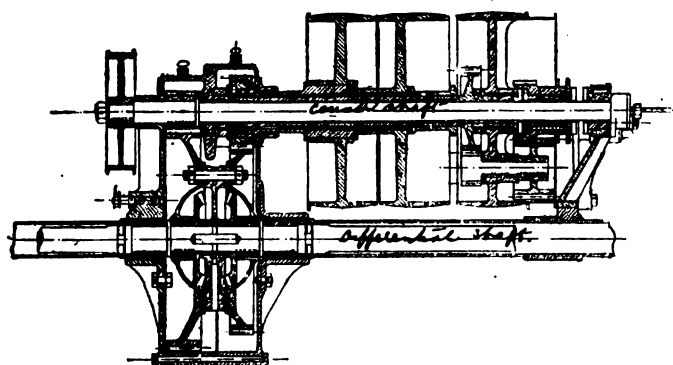


FIG. 2.—SECTION OF GAILLARDÉT VARIABLE-SPEED GEAR.

and the motor reaches a certain temperature, a fusible plug communicating with the combustion chamber melts, and the motor stops before there is any danger of "gripping." The charge is fired electrically, or by incandescent tube, or both as desired, the latter method being recommended so that one may replace the other in case of derangement.

Two speeds and a reverse motion are provided, the power being transmitted from the motor shaft to the counter shaft by means of a belt running on fast and loose pulleys. There are three pulleys on the counter shaft, Fig. 2, the central one being loose, and the two outer ones fast. The latter are mounted on separate concentric shafts, on the inner ends of which, in a gear box, are pinions continuously in mesh with corresponding spur wheels surrounding the differential gear on a parallel shaft. From the latter the usual chains and chain-wheels transmit the power to

the rear-road wheels. M. Gaillardet claims that he has overcome the drawbacks of belt-driving by ensuring a proper protection against mud and by regulating the tension in such a way that the slipping during normal working never exceeds 5 per cent.

The 6 h.p. car weighs complete about 14 cwt. The road wheels are of wood with metal hubs, all four being of equal diameter, and shod with 65 mm. pneumatic tires. Inclined wheel steering is fitted, while ample brake power is provided. The company are also building a faster car on similar lines, but with the parts correspondingly stronger; the motive power in this case being supplied by a two-cylinder engine developing 12 h.p.

THE FUTURE OF THE MOTOR-CAR.

THE future of motoring and the motor-car, writes Mr. Jefferson Seligman in *Automobile Topics*, is so large a subject that in the limits of a brief paper one scarcely knows where to begin. The first question asked in regard to any new enterprise, whether it be in connection with business, recreation, or pleasure, is—"Do the advantages compensate for the disadvantages?" If all the automobilists in this country could be gathered together in one place and the above query propounded, probably seventy out of every one hundred would answer with a decided "yes," 20 per cent. would beg to be excused from committing themselves, as their minds are in a state of suspense, and the remaining 10 per cent. would answer with an emphatic "no." A good many people say that the automobile is not yet perfected, and that when it is perfected, then they will go in for the sport. There are a good many who for years have been saying the same thing about the bicycle, and to this day they are without a machine. Those of us who want to enjoy the sport of motoring cannot afford to wait till the horseless vehicle is perfected before entering upon its enjoyments. The question then narrows itself down to this: "Does the excitement and pleasure which come from operating a good up-to-date motor-car, imperfect as it is, compensate for the crudities, disadvantages, and failures to 'mote' which are at present characteristics of some motor-cars?" Notwithstanding the drawbacks, the consensus of opinion to-day is in favour of the motor-car. It has come, and it has come to remain. The awkwardness, crudities, and imperfections of the present-day machine will disappear. The automobile to-day is just about where railroading was at the beginning of the last century, or where cycling was twenty years ago. Give the mechanic five years more and he will produce a machine that will be the surprise and envy of the world. There are more bright minds concentrating their thoughts and best efforts on the problem than on any other in the line of mechanics. Can we doubt the result? To do so would be to disregard all mechanical history of the past.

THE Dutch military authorities have decided to employ motor traction for guns and ammunition waggons within Amsterdam's fortification boundary.

THREE prominent owners of coffee estates in Nicaragua have petitioned the Nicaraguan Government to grant them twenty thousand dollars in instalments to help them to repair the road between Matagalpa and the National Railroad at Monotombo (a distance of eighty miles) in order to run a motor service between the two places. The petitioners state that owing to lack of proper transport, nearly a quarter of the coffee crop in the district was spoiled last year.

THE first *chauffeur* to express his intention of entering in the speed and endurance test from New York to Buffalo, under the auspices of the Automobile Club of America, is Mr. McCurdy, manager of the Motor Vehicle Company's depot in Philadelphia. Mr. McCurdy is one of the most expert drivers of an automobile in America, and for this contest will have a specially built racing steam-car of great horse power, petrol and water carrying capacity.

HERE AND THERE.

Two ladies on motor tricycles were seen out at Potter's Bar at Easter.

THE *Spectator* considers that in five years' time, if motor-cars are given fair play the public will admit that they are far safer for all concerned than horse-drawn vehicles.

A 24-h.p. Daimler car is being sent out to Spain to the order of the Marquis de Tovar. The car will during the coming season be entered for most of the tourist races in France.

DURING the Easter military cycling manoeuvres, a motor-car was fitted as a coffee-stall, and dashed along the country lanes and highways, bringing warmth and refreshment to many a weary, rain-soaked outpost.

MR. BASIL H. JOY, who will be remembered in connection with the Richmond Show and some of the official trials connected with the Automobile Club, has consented to take charge of the arena during the Club Show at the Agricultural Hall.

TODAY, the 20th inst., there will be a run of the members of the Automobile Club to Dunstable. The start will take place from the Club at 2.30, and the route will be by Edgware Road, Elstree, and St. Albans. A dinner at the Sugar Loaf Hotel will follow in the evening.

WE have just received a copy of the 1901 edition of Kelly's Directory of Merchants, Manufacturers, and Shippers of the World. This directory has become of such importance to business men as to be an absolute necessity in every up-to-date commercial house. It contains a long list of motor-car and carriage manufacturers, which has increased remarkably in length during the past few years.

UNDER the title of the Long Island Traction Co., and with a capital of twenty thousand dollars, a company has been formed in America to work a motor stage or omnibus route upon the main highways connecting the various villages and the town of Hempstead with Mineola, Nassau Co., and with New York City at Springfield, Queens, and Rockaway.

DR. STEDMAN, the American doctor who recently performed a surgical operation in light furnished by a bulb attached to the storage battery on his motor-carriage, has had made a regular outfit for use in this direction. It consists of sixty feet of electric cord and half-a-dozen lamps. The doctor never goes out but what he carries this apparatus with him on his car.

A PHYSICIAN practising in one of the suburbs of New York has used a petrol motor-car for two winters, having bought his first machine in 1898 and another one in 1899. His repair bills to August, 1900, had been £38, and from then up to the present £12, the latter including a set of new wheel rims. The care and keep of a horse per month is, he states, £12, while that of a motor-car is only £2.

ALTHOUGH there have been a number of runaways and collisions since the first motor-car appeared on the streets of Chicago, only twelve accidents in which anyone was actually injured have occurred, and not a single death has resulted. In order that the city authorities may have a complete record of all accidents in the future, everyone who takes out a licence is now required to give an undertaking that in case of any mishap he

will make a detailed report of the occurrence to the City Electrician.

AN American contemporary states that the Duke of Manchester is at present having a racing machine built that the makers claim will travel at the speed of 60 miles an hour. It is to be pointed at both ends like a torpedo, with a hood to protect the driver from wind and dust. In the fore part will be placed the petrol tanks, and in the rear a large water tank. The Duke hopes ultimately to break a record, but in the meantime he and his Duchess have been driven down to Kimbolton by motor-car by Mr. Moffatt Ford.

IN the course of a control demonstration at the recent automobile exhibition in Chicago an unusual feat was accomplished by an expert *chauffeur*. He closed the lid of a watch by backing a heavy motor-vehicle upon it. The watch, with the lid open, was placed on the ground on one side of a scantling. The motorist mounted his seat and backed the vehicle up until it climbed the scantling. With hand on brake, the driver allowed the rear wheel to drop gently on to the watch. It touched the lid and closed it, at the same time cracking the crystal. Just as the vehicle was about to crush the dainty bit of jewellery the lever was reversed, the car started ahead, and the watch was saved.

AN exhibition of automobiles was opened on March 22nd last at the Coliseum, Chicago, U.S.A. Several of the exhibitors had machines in operation on the track for the accommodation of visitors, and extensive use was made of the opportunity thus offered of comparing the merits of the different types. Vehicles of every description, from a petrol motor-bicycle to an electric 'bus, were to be seen in operation. Among the novelties was the skeleton of a Milwaukee steam-car, showing the mechanism in detail. This ran about the track during the exhibition, just to prove that it was the real thing, minus the body.

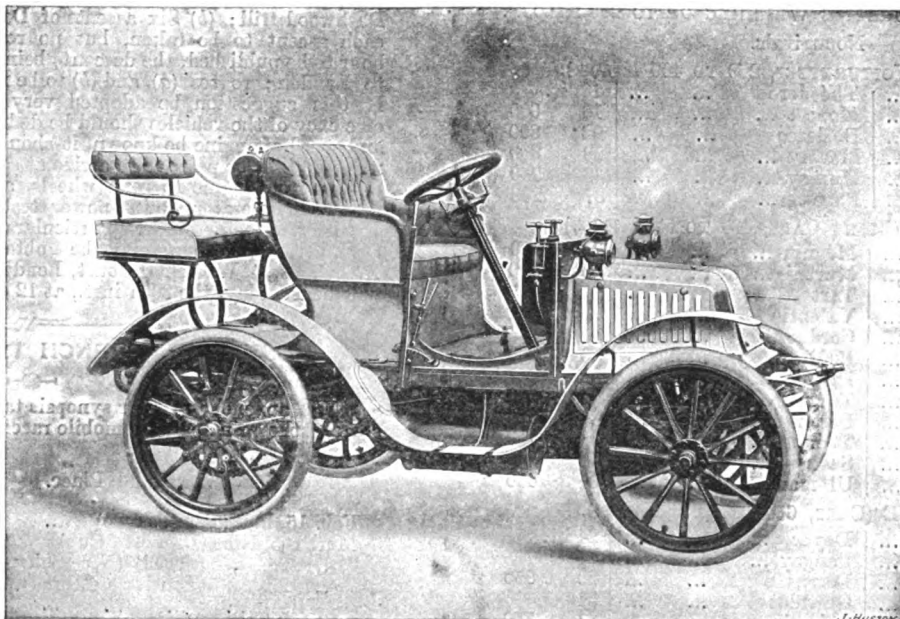


FIG. 3.—THE DOCTRESSE CAR (See opposite page).

WE learn that Messrs. Shippey Brothers, of King Street, Cheapside, E.C., have been appointed sole European agents for the sale of the new standard Milwaukee steam cars, Milwaukee steam wagons, and other engineering specialities, as manufactured by this well-known firm. As soon as financial arrangements have been completed, Messrs. Shippey intend to open branch sale depôts in Paris, Brussels, Berlin, Amsterdam, Lisbon, and other Continental cities, for the sale of the steam Milwaukee cars, the Ideal storage battery, Still electric vehicles, and Still carriage motors, controllers, and gearings, as now manufactured in England under royalty.

THE British Power, Traction, and Lighting Company, Limited, of York, have forwarded us an illustrated booklet on the "P.T.L." Gardner-Serpollet steam automobiles of which they are the sole manufacturers in Great Britain. The booklet, which is a veritable work of art, contains numerous illustrations of their vehicles. As a frontispiece, it has the photos of prominent members of the firm, including those of M. Léon Serpollet, President of the French company, Mr. F. L. Gardner, Mr. Geo. Hopkins, and Mr. A. E. Hodgson, chairman of the English company. The reading matter is written in an attractive form, whilst small corner pictures of rural scenes greatly add to the beauty of the pages.

THE PARIS-ROUBAIX ALCOHOL MOTOR TRIALS.

THE double event of the Paris-Roubaix alcohol automobile race was finished on the 8th inst. at the Roubaix end, the "two-day" contestants, who on the previous Sunday went as far as Amiens, and the "one-day" contestants, who left the Place de la Concorde, Paris, on the morning, reaching the common destination at various hours. The race was organised by the *Auto-Vélo*. There were altogether eighty-three entries of all types, scarcely a manufacturer of any reputation being unrepresented, the cars including heavy cars, light cars, voiturettes, motor-cycles, quadricycles, etc. The classification was as follows:—

(1) For those using pure alcohol; (2) 75 per cent. or more of alcohol; (3) at least 50 per cent. of alcohol, this being the maximum amount of mixture allowed under the rules. The following is the official classification:—

Number.	Make.	Driver.	Consumption.
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CATEGORY A (QUADRICYCLES).

1	De Dion...	Cornier ...	7 lit. 250
2	Werner (<i>tandem</i>) ...	Cousin ...	10 500
3	De Dion...	Osmont ...	22 459

CATEGORY B (VOITURETTES WEIGHING UP TO 250 KILOS.).

No arrivals.

CATEGORY C (VOITURETTES, 250 TO 400 KILOS.).

1	Darracq ...	Théodore ...	18 lit.
2	G. Richard ...	Moncet ...	19 600
3	Renault ...	Declercq ...	22 800
4	G. Richard ...	Morin ...	28 859
5	Brierre-Cottureau ...	Moussy ...	33 750
6	Decauville ...	Page ...	37 250

CATEGORY D (LIGHT CARS, 400 TO 650 KILOS.).

1	Gillet-Forest ...	Mégnin ...	22 lit. 850
2	Darracq ...	Marbais ...	23 300
3	Clément ...	Tart ...	26 500
4	Soc. Ind. Téléphones ...	Valentin ...	27
5	Noé Boyer ...	Cordonnier ...	30
6	Brierre ...	E. Brierre ...	30 200
7	Noye Boyer ...	Duanip ...	32
8	Turgan et Foy ...	Turgan ...	32 500
9	Bégot et Cail ...	Perez ...	32 625
10	Decauville ...	Théry ...	36 750
11	Brierre ...	Sanz ...	42
12	Decauville ...	Uhlman ...	64 450

CATEGORY E (CARS, 650 TO 1,000 KILOS.).

1	Delahaye ...	Doyer ...	24 lit.
2	Delahaye ...	Pangoy ...	27
3	Bardon ...	Danette ...	29 859
4	Panhard et Levassor ...	Girardot ...	31
5	—	Aristide ...	31 750
6	—	Baudouin ...	32 300
7	Bronhot et Cie ...	Maréchal ...	34 500
8	Vilain Frères ...	Briest ...	34 600
9	Gobron-Brillié ...	Rigoly ...	35 700
10	Bronhot et Cie ...	Charbonnier ...	36 400
11	Gillet-Forest ...	Le Blond ...	38 500
12	Peugeot ...	Barras ...	45

CATEGORY F (HEAVY VOITURETTES, ABOVE 1,000 KILOS.).

1	Société Nancéenne ...	De Ponton d'Amécourt ...	33 lit.
2	Delahaye ...	Varlet ...	34
3	Panhard et Levassor ...	Schaffer ...	39 450
4	Société Nancéenne ...	Brillié ...	41 750
5	Delahaye ...	Perrin ...	42
6	Bolleé ...	Martha ...	42 500
7	G. Richard ...	Le Saout ...	43 500
8	Bronhot et Cie ...	Belleville ...	46
9	A. Bolleé ...	Loysel ...	48 700
10	Gobron-Brillié ...	Berruë ...	50 500

CATEGORY G (COMMERCIAL VEHICLES CLASSED ACCORDING TO USEFUL LOAD CARRIED).

1	Georges Richard ...	Letellier ...	70 lit.
2	Bardon ...	Rost ...	49

The Richard car carried 650 kilogs. of goods equal to 11·600 litres per 100 kilogs., while the Bardon carried 300 kilogs. equal to 16 litres per 100 kilogs.

SPECIAL HILL-CLIMBING AND CONSUMPTION TRIALS.

WE are requested by the secretary of the Automobile Club to remind companies, firms, and individuals who will be exhibiting motor-vehicles at the Automobile Club's Exhibition at the Royal Agricultural Hall, that the Automobile Club is to hold a Hill-Climbing and Consumption Trial

on May 2nd., i.e., next Thursday week. The special purpose of this trial is that vehicles of new types and other vehicles may have attached to them at the Royal Agricultural Hall Exhibition the Club's official certificate as to their hill-climbing powers and as to their consumption of fuel. The trial will be open to any vehicle, whether it is to be exhibited at the Royal Agricultural Hall or not, or whether it be the property of a business house or private individual.

Important regulation as to fuel tanks.—The Technical, Legislative, and Trials Rules Committee met on the 18th inst., but at the time of going to press its decisions had not been received. It is understood, however, that Lt.-Colonel H. C. L. Holden and Mr. Worby Beaumont, as the result of their experiences at the consumption trial of the 13th inst., intended to recommend to the Committee that a condition in connection with the trial of the 2nd May shall be, that no vehicle shall be admitted unless its fuel tank be fitted with a tap or other arrangement at the lowest point of the tank, by which the contents of the tank may be entirely drawn off. Such a device should undoubtedly be fitted to all liquid fuel tanks, in order to allow their being cleansed of impure fuel, grit, and other foreign substances; and for the purpose of an accurate measurement of fuel consumption a means of entirely emptying the fuel tanks is indispensable.

Suggestions as to Trial.—The route, etc., of the trial was also to be considered at the meeting, the agenda of which contained the following suggestions:—(1) That the ordinary 100-miles trial course of the A.C.G.B.I. should be followed at the trial of the 2nd May. (2) Mr. S. F. Edge's suggestion that the consumption of vehicles should be taken during a continuous hill-climb by means, for instance, of six ascents of Hinds Head, the descents being made by gravity. (3) That the consumption should be taken on three courses: (a) London to the foot of Dashwood Hill; (b) Six ascents of Dashwood Hill (4 miles), the time of each ascent to be taken, but no records in excess of twelve miles an hour to be published, the descents being by gravity; (c) Dashwood Hill to London; routes (a) and (b) to be made if possible without stopping. If this suggestion be adopted very valuable information as to the efficiency of the vehicles should be deduced. If the capacity of cylinders and speed of engine be known, it should, by means of this test of four miles up hill, be possible to arrive at some conclusions as to loss in transmission from engine to road wheels, and such a test might make the proposed laboratory horse-power test superfluous.

Last date for entry.—Particulars of the trial, as decided at the Committee meeting, may be obtained of the Secretary of the A.C.G.B.I., 4, Whitehall Court, London, S.W. The last day for entrance will be Tuesday, the 30th inst., at 12 o'clock noon.

RESULT OF FRENCH RACING UP-TO-DATE.

WE append a tabular synopsis taken from the *Vélo* of the results of some of the principal automobile races held in France during the present year.

	Date and Place.	No. of Entries.	No. of Starters.	No. Fin. shed.
Feb. 15, Pau (Tourist race)	40	19	15
March 5, Nice (Brunetta Cup)	6	6	2
" 25, " (Speed) (Nice-Salon-Nice)	39	24	14
" 25, " (Tourists) (Nice-Dragnignan-Nice)	40	22	20
March 28, Nice (one mile race)	15	15	15
" 28, " (H. de Rothschild's Cup)	11	11	11
" 29, " (Nice-La Turbie)	43	43	38
" 31, " (Nice Cup)	6	3	1

From these figures it will be seen that for the eight races there were 200 entries, of whom 133 ran and 111 finished the course.

FURIOUS DRIVING CASES.

As briefly mentioned in our last issue, Mr. R. B. Bird, of The Firs, Moseley, was summoned at Henley-in-Aden Petty Sessions for driving a motor-car furiously on the highway at Hockley Heath, on March 24th. Mr. T. W. Staplee Firth appeared for the defence. P.C. Blackburn said he was on duty on Sunday, March 24th, on the highway at Hockley Heath when he heard a motor-car coming from the direction of Birmingham at what appeared to him a great rate. Witness took out his watch and as the car appeared round the bend of the road at the Box Trees, the driver evidently saw witness and slackened speed, and as the car arrived at the end of the lane leading to Knowle Station he again noticed the time; 25 seconds had elapsed. The car was then about 120 yards from witness, he put up his hand and the driver stopped at once and gave his name. Witness stepped the distance, which was 360 paces between the two given points, and allowing thirty-two inches to the pace, would bring it to 320 yards, or twenty-six miles an hour. While he was talking to defendant, a horse and cart with three men came up. One man had to get out and lead his horse by, and as he passed he shouted to defendant, "You ought not to pass anyone like that, you ought to be had up for it." Cross-examined, witness said the defendant did not say he was driving under twelve miles, he said they were not going particularly fast. Witness admitted that no lives were in danger. Mr. Firth, in addressing the Bench, contended that the case for the complainant was ill-founded in law, the proceedings

having been taken under the old Highway Act for furious driving, and quoted several cases in support of his objection. The Bench retired to consider the case, and upon returning into court the chairman said it appeared that the summons had been issued under a wrong section, and would be dismissed, but a new summons would be issued under the right section, and for the convenience of the parties would be heard at once. Mr. Firth strongly objected to this, and contended that the bench had no power to adopt this course. A sharp "passage of arms" took place between Mr. Firth and the magistrates' clerk upon the authority for the procedure, Mr. Firth eventually consenting to remain with his client for the hearing of the second summons, stating that he did so under protest. P.C. Blackburn then repeated his evidence, after which Mr. Firth called the defendant, who said they were driving in the motor on the day named from Tudor Grange to Henley, and when near to Monkspath Bridge saw three men with a restive horse. Witness pulled up, while one of the men got out and held the horse, and he passed when one of the men signalled for him to do so. This was about 1½ miles from the place where they passed witness talking to a constable, and it would have been quite impossible for the men to have caught them up if they had been travelling at the pace alleged. Mr. Alfred Bird gave corroborative evidence. Mr. Firth

highway at the time the car passed. There were several people on the pavements. Mr. Firth submitted a point of law to the Bench. He was summoned, he said, for driving at a furious rate so as to endanger the lives and limbs of the public, but he pointed out there was no evidence in the case to prove this. In fact, the evidence was of a contrary character, for both the witnesses had sworn there was no one in the highway when the car passed. Therefore no persons' lives or limbs were endangered. The Bench retired to consider the point raised, and on their return the Mayor said that the point of law was sustained and the case would be dismissed. He, however, expressed the regret of the Bench that the case had not been taken under the Light Locomotive Act, which regulated the speed of motor-cars to twelve miles an hour.

LIABILITY OF MOTORISTS.

SHERIFF JOHNSTON has issued his decision reversing the judgment of Sheriff Substitute Lee in an action raised in Forfar Sheriff Court at the instance of Mrs. Ann Cathro Mitchell or Lumsden, Kirriemuir, in which pursuer sought to recover from Alexander Ross French, Forfar, the sum of £100 in respect of injuries said to have been sustained by pursuer and



A LOCOMOBILE ON THE ICE BRIDGE AT NIAGARA—NO OTHER VEHICLE HAS EVER BEEN ON THE BRIDGE.

addressed the Bench at considerable length, and after a short deliberation, the Chairman said there appeared to be a little doubt, and they would give the defendant the benefit and dismiss the case.

In our last issue we briefly reported the fact that Mr. T. W. Staplee Firth was summoned for driving a motor-car at a furious rate so as to endanger the lives and limbs of the public at Poole on March 31st. On this occasion Mr. Firth appeared in the dual capacity of defendant and advocate. Police-constable King said at 10.10 on the evening of March 31st he was standing near the Amity Hall, when he saw a motor-car approaching from the direction of the Quay. The car was being driven very fast, his opinion being that the rate of speed was fifteen to twenty miles an hour. He shouted to the defendant to slow down, but he took no notice of the warning. He received complaints from people respecting the rate at which the car was travelling. Witness was subjected to a searching cross-examination by Mr. Firth as to the mode in which he ascertained the rate at which the car was travelling, and admitted that at the time the car passed him there were no persons in the roadway and no vehicles about. A witness named John Rowland, who had been subpoenaed, said he was walking down the High Street about 10.10 on the night of March 31st, when a motor-car passed him going at a tremendous rate—he should think more than fifteen miles an hour. Police constable King called to the driver of the car to pull up, but he took no notice. The line of cross-examination of this witness was the same, and he also stated that there was no one in the

her infant child, through being knocked down by a motor-car driven by defender at Kirriemuir in July last. Sheriff Lee found that the accident was not caused by the fault of the defender. Sheriff Johnston takes an exactly opposite view, and finds that the injuries were caused by the negligence or want of skill of the defender. He fixes the damages at £30, and finds defender liable in expenses.

DRIVING WITHOUT LIGHTS.

At the Lincoln City Police Court, Horace Spurr was summoned for not having a light attached to a motor-car of which he was in charge in St. Botolph's, Lincoln, on the 10th inst. Defendant, in extenuation, said that he was driving in the rain, and did not see that the light was out. Fined 10s. and costs.

BEFORE the Arundel County Bench, on Monday, Douglas H. Whitehead pleaded not guilty to driving a motor-car at Littlehampton without a light on March 26th. P.C. Harwood deposed that the defendant was in charge of a motor-wagonette, which came along Terminus Road from the direction of High Street. There were two others in the car, one in front and the other behind. The passenger sitting in front was holding a small electric light in his hand. They had a lamp attached to the vehicle in front, and when witness overtook them outside the railway station this was alight. Defendant also remarked that it was all right at the top of Arundel Hill. The lamp on the vehicle was in the centre of the car. Superintendent Kennett pointed out that even this

was not complying with the regulations, because the bye-law stated that the light must be on the off side. Defendant: It was put in the centre by the makers. Sir Henry Fletcher: That does not matter. You have got to comply with the bye-laws, and they say it must be on the off side. Asked if there was any previous conviction against the defendant, Superintendent Kennett replied in the negative, but stated that he had received several complaints about his furious driving. The Chairman: I was going to say that I have received several complaints myself about the pace at which this motor-car is driven about the streets and round corners. I have also seen it myself, and if more care is not exercised there will be a dreadful accident some day. Defendant said his car could only go twelve miles an hour at the most, and he also asserted that there was a good deal of ill-feeling towards the car in Littlehampton, which probably accounted for these complaints. The Chairman: The people who have complained to me do not happen to live at Littlehampton. Besides, I have myself seen the car driven at a dangerous rate, especially round corners, and I warn you that if more care is not exercised there will be an accident some day. The Bench imposed a fine of 10s., including costs.

MOTOR-CAR ACCIDENT.

AT the New Mills County Court, on Monday, his Honour Judge Smyly, K.C., heard a case in which Thomas Wain, farmer, Grainfoot, Derwent, sued Wm. Gunstone and Sons, Limited, wholesale provision merchants, Sheffield, to recover £7 1s. 6d., damages for injuries to horse and trap through the negligent driving of defendants' servants, on May 30th last year. Mrs. Mary Thorpe, of Derwent Vale, also sued Messrs. Gunstone for £20, damages for personal injuries sustained on the same occasion. Plaintiff's case was that on the evening in question Mr. Wain was driving from Hope with Mrs. Thorpe and her two children. At Borough Lane Head they were run into by the defendant's motor-car coming from Bradwell. The trap was thrown over, and the occupants were thrown into the road and hurt. It was at first thought the children were killed. Mrs. Thorpe's left arm was seriously injured, and cut to the bone, and her right arm sprained, and Mr. Wain was hurt. In cross-examination the plaintiffs both declared that Wain was on his right side, and denied that he was going at the rate of six miles an hour. For the defence Herbert Hardy, driver of the car, Mr. A. Parkes, defendant's traveller, and Mrs. Parkes were called to prove that the car was going at the rate of three or four miles an hour, and that the driver slowed and blew his horn before the approach. After a lengthy hearing his Honour said he considered the plaintiffs had made out their case. He awarded Mrs. Thorpe ten guineas and her doctor's bill, and to Wain he awarded three guineas.

ACTION AGAINST THE DAIMLER MOTOR COMPANY.

COVENTRY County Court was occupied for several hours on Tuesday in hearing the case of the Daimler Motor Company, Ltd., v. Fitt, which was an action to recover £52 5s., cost of repairs to a Daimler motor belonging to defendant. Plaintiff company was represented by Mr. A. M. White, barrister, and the defendant by Mr. W. H. Stevenson. In the spring of 1900 the defendant, a cab proprietor, coal merchant, etc., of Charing Cross, St. Benedict's, Norwich, purchased a car from the company at the price of £340 cash. A short time afterwards he had some repairs done, but the subject of the present action related to what was done to the car in June of last year. He brought it over to Coventry and left it at the works, and as he got no tidings of it for several weeks he came over with his wife and fetched it back with some repairs done. Afterwards a bill was sent in as follows:—To overhauling and repairing car No. 1415, supplying and fitting: 1 radiator new pattern water tank, £15; 1 pair slings for ditto, 10s.; 1 set crank shaft brasses, £1 15s.; 1 counter shaft, 17s.; 1 governor gear pinion, 10s.; 2 exhaust valves, 11s. 4d.; 1 ignition tube, £2 10s.; 9 gallons of petrol at 1s. 6d, 13s 6d.; 1 governor hammer, 4s.; 1 cut-off cam, 7s. 6d.; 1 cylinder head, £3 5s.; studs, bolts, nuts, washers, 12s. 6d.; overhauling gear, repairing feed-pipe joints, overhauling steering gear, and overhauling motor, £28 14s. 2d.; total, £55s. 10s. By 1 cylinder head allowed, £3 5s.; net total, £52 5s. Defendant, on receiving the account, strongly resented the heaviness of the charge, and action was entered in the King's Bench and the case was remitted to Coventry for hearing. Defendant had paid £25 into court.

The witnesses for the Daimler Company were Percy Richardson, late sales manager; M. M. Wormall, W. Shephard, A. Bush and A. Morton, employees of plaintiffs. All were closely questioned as to the actual repairs done to the car, the materials used, and the time spent on it. Mr. Richardson said the sale of the car was effected through Mr. F. Morris, the company's agent at King's Lynn. Mr. Shephard, as prime cost clerk, informed the Court that after charging cost the company, in doing repairs, put on 50 per cent. for establishment charges and 50 per cent. for profit in addition. Defendant on being called gave his evidence with a good deal of animation and there was something like a scene between him and the examining counsel. He stated that Mr. Morris, from whom he bought, was plaintiffs' agent for the Eastern counties—an assertion for which Mr. White asked proof. But the objection to admission of the statement was disallowed by the learned judge, and a letter of Mr. Morris's was put in. He brought the car by rail to Coventry for repairs, and saw Mr. Richardson, Mr. Bush, and a works foreman. He showed them the defective head of the machine, and sundry other things were suggested

by Mr. Richardson. The car was promised in ten days' time, but it was not sent, and so he journeyed over, with his wife, from Norwich. On going to the office he was asked to take a seat and given a cigar, and in about half an hour the car was brought round to the front door. He looked at it, and alleged that with the exception of a new radiator and a few trifling repairs, nothing had been done to it. He went back by road with it. When in September he got a bill for £55 10s. (£10 was afterwards taken off) he was astonished at the amount. He asked for details. Defendant was taken through the details of the account, and stated that the charges made were very excessive. He offered £18 4s. 11d. in settlement, but ultimately, on legal advice, paid £25 into court. Examined, he said he thought he knew something about motor-cars. For the last three years he had spent a good deal of time in becoming acquainted with the mechanism of them. He was a furniture-remover, coal merchant, and hackney carriage master. Mr. White: Do you call yourself an expert in motor-cars?—An expert, as far as driving and repairs go. To help to get a living he let out this car. He had asked Mr. Morris's opinion of this bill of the company, but Mr. Morris was not in court to give evidence. Why didn't you get him here?—Because he is your agent, and it would not be fair to bring a friend who is getting his living out of the plaintiffs. Do you suggest he would not tell the truth?—He would, if he had come. Do you suggest that we should dismiss him for telling the truth?—I am sure you would. You do?—I am sure you would. My case is that what was done to the car was not worth half the amount charged. In fact, that we are swindling?—If you ask me, I shall say I never saw such a swindle in my life. Have you disputed bills before?—Yes, and this company took off £14 out of £25. The cross-examination continued to be of an animated character, and counsel asked the defendant "not to lecture him every time." Asked if he had certain persons present who were alleged to have seen certain parts of the car, defendant answered that he had not. He had come 180 miles, and he could not bring half Norwich with him. There were, he said, a great many things in the bill which were not put into the car. Then there was a fresh altercation, and Mr. White said: Why can't you answer the question? Can't you answer any question?

Mrs. Fitt was also a witness, corroborating her husband's evidence as to what took place when they went to Coventry for the car. Mr. Stevenson then addressed the Court, and in the course of his speech, the Judge (Judge Ingham) said he was prepared to reduce certain charges; but Mr. Stevenson said he must address his honour in further reduction of the charges, which he did. Mr. White said but a few words in reply, but they were warm in tone. The Daimler Company could not, he remarked, sit down under the allegations contained in the defendant's correspondence or his assertions in the witness-box. They were willing, however, not to insist on every charge made in its full detail, and would submit to his honour's judgment. The judge then gave a verdict for the plaintiffs for £40 and costs.

A RACE from Mannheim to Pforzheim and back is being organised by the Rhenish Automobile Club to be run off on May 12th next.

GREAT surprise was expressed in French motor circles that Levegh, the winner of the Paris-Toulouse race, did not compete in the Nice event. An interesting story, however, has since leaked out which explains the absence of "vainqueur de Paris-Toulouse." Just before the race Levegh was riding up the street of Le Notre on his new machine, when suddenly he put on all the brakes. This sudden opposition apparently upset the equanimity of the machine, which began to "buck" with remarkable vivacity. When Levegh discovered that his machine lacked sufficient "stopping" powers he decided not to compete in the Nice events.

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COMMENTS.



THE King's horses have undergone the same ordeal as the late Queen's horses experienced with regard to the motor-car. The animals were paraded in the Royal Mews at Windsor Castle under the supervision of Lieutenant Hickey, of His Majesty's stables, and Dr. Bruce Porter, a member of the Windsor Corporation and an enthusiastic motorist, drove his vehicle round them. The horses, without exception, took no notice whatever of the horseless car, and then Dr. Bruce, deciding to put them

to a further test, drove right into the centre of them. At first the car occasioned a little dismay, but soon the animals became quite accustomed to it and treated the automobile with contempt. The horses underwent further tests but throughout they maintained an undisturbed equanimity. The results of the tests were regarded as highly satisfactory. The example set by the director of the Royal Mews might well be followed throughout the country. Bus proprietors and jobmasters, by having a motor-car in their yards for a day or two, would not only quickly accustom their horses to its presence, but would do much to minimise the number of accidents which occur through the unmannered behaviour of horses at the sight of a motor-car.

The Manchester Automobile Club.

THE Manchester Automobile Club had its first club run of the season on Saturday last, the destination being Nantwich. On arriving at the Brine Baths Hotel, the ten cars which took part in the run were drawn up in a semi-circle in front of the hotel, and formed a fine array of the latest types of motor-vehicles. Twenty-four members of the Club and their friends sat down to dinner at 6 o'clock. The cars, with the exception of two belonging to members who were spending the week-end at Nantwich, started for home at a quarter to eight. The weather, with the exception of a little more dust than was pleasant, could not well have been improved.

Motor-Omnibuses for the Isle of Wight.

A SERVICE of motor-omnibuses is apparently about to be started at Ryde, Isle of Wight, for at the last meeting of the Ryde Town Council, the General Purposes Committee recommended that licences be granted to motor-omnibuses, and that it be left to the Committee to make all arrangements. Mr. Mears, in moving the adoption of the report, said that full inquiries had been made as to the licensing of motor-cars in other towns. The resolution was adopted.

A Motor-Bicycle Fault.

As a knock-about vehicle the motor-bicycle has a few special drawbacks. The ordinary light vehicle can be stowed away with little trouble, but when one comes to finding a secure resting-place for a heavy motor-bicycle the owner will sometimes regret that the affair has not three wheels. It is

dangerous to leave it by the kerb; it cannot readily be brought into shops or houses—especially those addicted to flights of steps; and when in the country it cannot be laid on the ground as the ordinary machine often is, perforce, when the roadside offers no point of support. The purchaser must be content to bear with these drawbacks; and indeed if he get a machine reliable in every other way he will gladly overlook them.

Electric Cars in France.

WRITING in an American contemporary, Mr. Hart O. Berg says: "The high place which the petroleum carriage has taken in the automobiling field of France now shows some outward signs of being contested by the more gentle and quite offenceless electric carriage. The petrol light car, however, is becoming more and more popular, and small vehicles to hold two or four persons and weighing from 900 to 1,200 pounds are and will continue to be in increasing demand." Mr. Berg considers that the "stable" of the Parisian motorist "of means" will contain at least an electric brougham, a victoria, and a small petrol voiturette.

A Sign of the Future.

THE motor-car parade at the recent Dublin Show is regarded in Irish Press circles as a most significant sign of the future. In our last issue we referred to the almost total conversion of the English Press, and now we find the words quite as applicable to the Press of the Sister Isle. Without exception, as far as we know, the recent parade has been commented upon in favourable terms. Ballsbridge show ground in which the parade was held was the sanctum of the pawing steed until the motor-vehicles paraded therein about a fortnight ago, and the innovation has been warmly appreciated. In Ireland the motor movement is making progress, and the appearance of automobiles is becoming more and more frequent, whilst this year's visit of motor tourists to the Emerald Isle is looked forward to on all sides.

The London Fire Brigade and Automobiles.

WE are glad to learn that a movement for the substitution of motor-fire engines in place of the present horse-drawn vehicles is under consideration at the headquarters of the Metropolitan Fire Brigade. A representative of the *Motor-Car Journal* had an interview the other day with Commander Wells and was informed that numerous schemes—English, American, and Continental—had been thoroughly tested, but nothing satisfactory had so far resulted. In order to become better acquainted with the working of motor-vehicles, the Chief of the Fire Brigade has lately purchased a Locomobile.

The Conversion of "Dagonet."

MR. GEORGE R. SIMS, the well-known "Dagonet," has become a convert to the motor-car and is quite enthusiastic in the *Referee* of last Sunday over his experience. It was the greatest ambition of Mr. Sims' life "to fly through the air with the birds," and it was gratified by a ride with Mr. Alfred Bird, of Birmingham, on the latter's Panhard car. The motor-

THE GENERAL AUTOMOBILE AGENCY, D. Farman, Man., Garage open day and night, all cars in stock, 100-104, Long Acre, W.C.

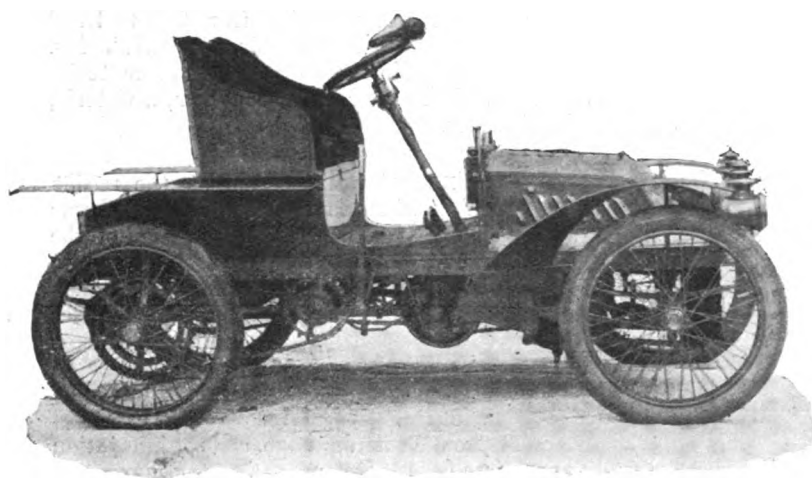
car he regards as much handier than the horse in traffic, and he comments on the almost instantaneous stopping powers of the car. The opposition of County Councils Mr. Sims treats in a very light vein, comparing it to the effect "the first three letters of County and Council had upon the railway train."

Mails by Motor-Car in Australia.

THE Postal Department of Queensland have been holding trials of motor-cars to test their utility in the collection of mails. The idea was to use the vehicles in the drought-stricken districts, but at present there is not much prospect of their being adopted. The trials, however, have been eminently satisfactory and it is needless to say that the Department will keep the results well in mind for future emergencies. At the same time trials have been held in New South Wales, where the result has also been satisfactory. Before taking further steps, however, it has been decided to await the arrival in the Colonies of two new motor-cars, which are said to have many advantages over the cars now in use.

The Paris-Berlin Race.

CONSIDERABLE interest is being shown by motor-car builders in France in the forthcoming race between Paris and Berlin, and it is not improbable that quite a number of new cars will take part in the event. We are this week able to give an illustration of the type of car which the Gladiator Company is building for the race. As will be seen, it is built



low, and, fitted as it is with engines of 14 effective h.p., it ought to be capable of attaining a high rate of speed. The Motor Power Company, Limited, inform us that three of these cars are being built for the coming race, and that as soon as it is finished they expect to get one of them over to London.

Electric Canal Haulage in Belgium.

ELECTRIC motors have been put to a new use in Belgium. Instead of the time-honoured method of towing barges on a canal by means of horses, small electric road carriages of 5 h.p. are now in use on the banks of the Charleroi canal. By this new method the products of the rich coal mines of the Charleroi district can be towed down to the port of Antwerp (a distance of fifty miles) at the rate of three miles per hour, as against one and a half miles per hour by the old method. The cost per mile of equal tonnage is the same in both cases. The electric current is taken from overhead conductors through three separate trolleys. These canal automobiles work over sections of varying length. One motor tows a boat until it meets another coming in an opposite direction. In a minute the tow lines are exchanged, and the motors retrace their routes without passing one another. The driver has two seats at his disposal—one for either direction, thus avoiding the necessity of turning the automobile.

Motor-Cars for Military Purposes.

IN the course of a paper on "The Cycle as an Aid to Military Operations in South Africa," read at a meeting of the Cycle Engineers' Institute last week, Lieut.-Col. R. E. Crompton said that the result of his work in South Africa was that Lord Roberts sent him home with others to the War Office for the purpose of helping forward the question of design of mechanical transport in all forms. He could say roughly that it was the intention of their Committee and the intention of the War Office to produce, in the first place, efficient traction trains, resembling the old traction trains, only better, which would be independent of fuel and water supply to a far greater extent than had ever yet been attempted—the use, for instance, of the internal combustion engine, and possibly those of the Diesel type. Besides using heavy engines for transport, lighter kinds of automobiles would be used wherever a wheeled carriage had ever gone. He was convinced from what he had seen that they could show with lighter haulage as great superiority as they had shown with heavy haulage. The introduction of motor traction into warfare would also prove a great factor in the lessening of sickness among the troops. The dreadful enteric, which killed three times as many men as were killed by the Boers, was entirely due to animal transport being used. Dead animals, which were present everywhere, polluted the water and the air. If they could supersede animal transport wherever possible, the impedimenta of war would not hang so heavily upon an army.

The Fair Maid of Perth.

THE following amusing story of a lady, a constable, and a motor-car was told in a recent issue of the *North British Daily Mail*:—"A motor-car was standing opposite a draper's shop door in High Street, Perth, when a lady came up to a constable, ordering him to have it removed, as it was frightening passing horses. In vain the constable explained his inability to cause the motor to 'move on'; the lady persisted that the constable should take it 'in charge.' Matters were looking serious for the constable, who was to be reported forthwith for failing to do his duty, when, fortunately, the owner of the motor emerged from the shop, mounted his seat, and drove off."

Motor-Cars at Epsom.

QUITE a large number of motor-cars turned up at the first Epsom race meeting of the century. The road to Epsom was as usual crowded with wagonettes and every conceivable form of horse vehicle, but here and there a motor-car darted out from among the long *queue* of vehicles and sped away—much to the disgust of the occupants of the other roadsters. On arrival difficulty was experienced by many in finding a resting place for the horseless car. Some of the stablemen refused to take care of them on the ground that the horses would be frightened, and in consequence the turf by the side of the road was dotted with motor-cars in charge of *mécaniciens*. It would be interesting to know what were the charges made by those who consented to take care of the motor-cars. A noteworthy fact was the very small number of horses which paid the slightest attention as a motor-car buzzed by.

Mechanics and First-Aid.

EVIDENTLY the Duchess of Portland remains to be converted to the delights of motoring. Speaking at Worksop recently in connection with the St. John Ambulance Association her ladyship said: "Should it ever be my misfortune to exchange the noble horse for the doubtful joy of a motor-car, I should unhesitatingly give preference to the driver who had passed the best tests of the St. John Ambulance Society and who could render first-aid as often as it would probably be necessary under the present conditions of automobilism." It would appear from these expressions that the Duchess of Portland has not yet experienced a ride on a motor-car, for even under the most un-

favourable circumstances, when the elements have to all appearances combined to frustrate the run, the novice has expressed great enthusiasm at his experience. With regard to the desirability of employing a certificated first-aid driver we quite agree, but we fail to see why it should be more or equally as imperative for a mechanic to possess those qualifications as for a coachman or driver of any other means of locomotion. In fact every day proves that motoring accidents are on the decrease, while accidents through other means of locomotion show no sign of decreasing.

Electric Vehicles v. Tramcars.

A VERY interesting article, headed "Electric Vehicles v. Tramcars," appears in the current issue of *Cassier's Magazine*. Mr. Alton D. Adams, the writer, deals with the subject in a convincing and straightforward manner. His reasoning is of a most lucid character, and every point which can possibly affect the argument is given due consideration. In summing up Mr. Adams states: "The cost of land, buildings, and generating plant is in most tramcar systems only from one-half to one-third of the investment in rails and electric circuits, and it has been shown that the cost of generating plant and of vehicle batteries combined is only about one and one-fourth times the investment for the generating plant alone in a tramcar system of equal passenger capacity. It seems certain also that the repairs on the batteries of a vehicle system can be made at an annual outlay of not more than that now necessary to repair electric lines, rails, and one-half of the generating plant. There remains, then, as an unbalanced advantage of transportation with battery vehicles, a saving of about one-half of the entire first cost, and also of one-half of the annual interest charges of present tramcar systems."

Control Contests at the Crystal Palace.

FORTY-SIX entries have been received for the Control Contests of the English Motor Club which are to take place in the grounds of the Crystal Palace this (Saturday) afternoon. Every known class of motor-vehicle, except electric, will be represented, the electric vehicles, for some reason or other, standing aloof. In addition to the Control Contests through the grounds, there is to be a speed trial on the Upper Terrace. A number of automobilists have signified their intention to drive down to the Palace, and, given a fine day, there should be a notable gathering. The first event is down for 2.30 p.m. Since the above was written, we learn that Messrs. Shippey Brothers have entered two electrical vehicles in Section K, so that there will, after all, be competitors in every class.

The Roads Improvement Association.

AT the annual meeting of the Roads Improvement Association, the Hon. Scott Montagu, M.P., and Messrs. Worby Beaumont and H. P. Boulnois were elected the representatives of the Automobile Club upon the Council. It was also decided to make a new departure in the work of the Society by initiating a considerable movement for the reform of the existing system of highway administration. It will be readily seen how a movement of this kind will fit in with, and assist, the efforts now being made by the Automobile Club to oppose the restrictions upon automobilism proposed by many highway authorities.

Automobile Regulations in Berlin.

THE Berlin Police have just published the new regulations for the use of motor-cars and similar vehicles in the public streets of the capital. All motor-vehicles are to be provided with easily-worked steering gear and trustworthy brakes, and all excessive noise and obnoxious smoke, steam, or smell is to be avoided. When a speed of fifteen kilometres an hour is used the vehicles must be so built that they can be stopped on asphalt within eight metres at most. The lantern, when lit, must fully illuminate the way at least twenty metres in advance.

Every motor must have a number stamped by the police, the name of the maker, and the weight and horse-power, on a clearly-visible plate. Motor-cars not owned by Berliners may be temporarily used in the capital, provided their drivers can show an official certificate from their own police. Similar certificates, issued by German officials, must be carried by foreign motor-car owners. The owner is responsible for his vehicle and for the driver, and must notify all changes concerning it, or his address, to the police. The driver must be over eighteen, and must have an official certificate from a public expert or from a driving school; and he is liable to temporary loss of his certificate in case of negligence. He is also responsible for the condition of the vehicle. The police can prohibit the use of certain streets. The speed at dusk and on municipal roads must not exceed fifteen kilometres an hour, and is to be relatively diminished in crowded, slippery, and curving streets, or when crossing narrow bridges, etc. Motor races are only permissible with the consent of the police. On leaving the car the driver must fasten up the machine and brake, to prevent improper use.



THE EASTER TOUR.—MOTORISTS AT SALISBURY.

The Latest American Craze.

THE latest craze among the motorists of Washington is to spin up and down the avenue leading from the Treasury to the Peace Monument in the cool of the evening. The avenue is described as a broad, level thoroughfare, a mile in length. After the heavy traffic of the day is over, the avenue is practically deserted, and the ardent motorists can speed their vehicles without much fear of being interfered with. The parade begins at ten o'clock, and up to midnight the number of motor-cars steadily increases. Not very long ago West End cyclists developed a craze for cycling in Hyde Park, turning out in their myriads. But this craze was short-lived, and cyclists found a greater pleasure in taking a run into the country, where level roads are interspersed with hills. This new "fad" of our American cousins will soon follow in the footsteps of the cyclist craze in London.

The Automobile Club's Whitsuntide Tours.

THE Tours Committee of the Automobile Club at their last meeting settled the preliminary programmes of the tours to be held at Whitsuntide. There will be two different tours this year, one having Oxford as its headquarters on the nights of Saturday, 25th, and Sunday, 26th May. The day's runs will be settled at Oxford; it is hoped that members of the Midland Automobile Club will join in this tour. The other tour is to Paris to witness the start of the Gordon-Bennett race. The start will take place at Boulogne on Whit Sunday morning.

Amiens being the day's destination. On Monday, May 27th, Paris (90 miles) will be reached. The return journey, *via* Rouen and Dieppe, will start on the morning of May 29th. Mr. Dick Farman, of the General Automobile Agency, has undertaken to make arrangements to convey members of the Club in good motor-vehicles by road from the sea-coast to Paris and back at a cost of about 25s. to 30s. per seat per day, or for the two journeys, say Boulogne to Paris (two days) and Paris to Dieppe (two days), from £5 to £6 per seat. It is thought that many members may not care to go to the expense and trouble of shipping their cars to France for such a short period, and that the above arrangement may therefore be acceptable to them.

A Tour to Liverpool.

At the invitation of the Liverpool Centre of the Club (the Liverpool Self-propelled Traffic Association) the members of the Automobile Club will tour to Liverpool in order to be present at a portion of the Trials of Heavy Vehicles now being organised by the Liverpool Centre. The Tour will start on Saturday, June 1st, members meeting at the Regent Hotel, Leamington, on the Saturday evening, having made their way there as they please. The journey will be continued *via* Coleshill, Lichfield, Rugeley, Stafford, Eccleshall, Nantwich, Tarporley, Chester, and Birkenhead. Mr. Shrapnell Smith has undertaken to make arrangements for the storage of motor-vehicles at Birkenhead, should there be no carriage-ferry on their arrival there.

Motor Vehicles for Cotton Transit.

The forthcoming trials of the Liverpool Self-propelled Traffic Association in June are arousing great interest in East Lancashire. The inefficiency of the local railway lines in coping with the distribution of raw material in anything like a satisfactory manner is seriously handicapping the output of the manufacturers. The Manchester Ship Canal and the smaller canals with which this district is intersected have done good work, but it is the slow means of transit which stand to their disadvantage. It is felt on all sides that the solution of the present difficulty lies in the adoption of motor-vehicles, and that at no very distant date, by the use of this simpler and more effective means of transit, the attendant disadvantages of railway and canal services will be overcome. The *Textile Manufacturer*, in dealing with the subject, says:—"The convenience of some regular system of transit of this kind will be invaluable. Motor-vehicles travelling from, say, Liverpool could serve the various Lancashire towns with raw cotton and other imported goods direct from the dock. In time roads would be improved, and this direct service would become both cheaper and more speedy than by railway, with its delays at junctions and termini and its unbending officialism."

Motor-Cars at Horse Shows.

A LETTER from Mr. Archibald Rosling, of Chelmsford, was submitted to the last meeting of the Committee of the Automobile Club, in which he suggested that a motor demonstration should take place in connection with the Essex Agricultural Society's Show to be held at Lexden Park on the 12th and 13th of June next. The Committee decided that the Club could not recommend demonstrations of motor-vehicles at shows at which horses are to be shown, as probably many of these would be untrained or newly trained.

WITH reference to the question of the width of tyres, the Automobile Club is arranging to give an inspector of the Local Government Board a practical demonstration of a motor car fitted with *solid rubber* tyres which are under the width prescribed by the regulations (the Locomotives on Highways Act, 1896) in relation to the weight of the motor car. The experiment is to be made under the least favourable conditions as to the state of macadamised roads.

THE AUTOMOBILE CLUB'S RUN TO DUNSTABLE.

THE members of the Automobile Club had a most enjoyable run on Saturday to Dunstable. Outside the Club at Whitehall a small muster of members assembled, including Mr. R. E. Phillips and Mr. Lyons Sampson, in the former's Mors Petit Duc, Mr. Phillips driving; the Hon. Leopold Canning and Mr. Heard, in the former's Century tandem, Mr. Canning driving; Mr. and Mrs. T. B. Browne and friend on a 6 h.p. Panhard, Mr. Browne driving; Mr. and Mrs. Peall and two gentlemen in a 6 h.p. Daimler, Mr. Peall driving; Mr. Johnson and Mr. Bruce in a Darracq car, the former driving; Mr. Bidlake on a Singer motor-bicycle, and Mr. and Mrs. O. Stanton and a representative of the *Motor-Car Journal* on a 12 h.p. Daimler. The Hon. C. S. Rolls and Mr. Harrington Moore, the latter in a Delahaye voiturette were at the Club to see the start.

Soon after 2.30 p.m. a start was made for the thirty-three miles run to Dunstable by Mr. Johnson, the other cars following in quick succession, Mr. Stanton's Daimler bringing up the rear. Some of the members journeyed via Edgware and Elstree, while a deviation was made by Mr. Peall and Mr. Stanton and latterly by Mr. Browne, the route followed in this case being via Regent's Park, Finchley, High Barnet, and St. Albans.

The weather was all that could be desired—a great contrast indeed to the previous Saturday's experience. The sun shone warmly, and without exception the heavy overcoat was discarded on the outward journey. The road was full of cyclists and others on pleasure bent. The former found it a wearisome task pedalling along in the warm sun and cast longing eyes at the motor-car as it dashed past, mounting the hills with remarkable ease and speeding quickly out of sight. The drowsy driver and the lazy carhorse were almost moved to exertion at the buzz of the fast disappearing vehicle. But there were many drivers who slumbered peacefully on utterly oblivious of the right side of the road and taxing the dexterity of the motorist to the utmost capacity. In fact, on many occasions to the eye of the uninitiated it was a wonder that the occupants of the 12 h.p. Daimler arrived safely at their destination. But here and there the road was practically free from any other vehicle, and a sharp run was enjoyed at a speed at least up to the legal limit. Up the hills and down into the dales, the 12 h.p. Daimler rushed along, occasionally stopping to direct Mr. Peall and party on the right road, but when Mr. Browne's car hove into sight in the rear, just discernible through the thick clouds of dust, Mr. Stanton decided to leave Mr. Peall to the care of the new arrival and make a bold dash for Dunstable. Just before 5 p.m. the 12 h.p. Daimler ran into the yard of the Sugar Loaf Hotel, soon after the arrival of Mr. Canning on his attractive Century tandem, which was the first to arrive. The other cars followed soon after. During the afternoon the party was joined by Mr. Kenealy, on his new 10 h.p. Delahaye, accompanied by Miss Annesley Kenealy and Mr. N. B. Kenealy, who ran over from Watford; Mr. Percy Richardson, on a Daimler, accompanied by Mrs. Richardson and Mr. Collinge Wells and son, who came over from Caddington Hall, Markyate, and Mr. Gretton and lady on a M.M.C. phaeton.

A dinner was afterwards held at the Sugar Loaf Hotel to the strains of the town band, at which the following ladies and gentleman were present: Mr. and Miss Kenealy, Mr. N. B. Kenealy, Hon. Leopold Canning, Mr. Bruce, Mr. Phillips, Mr. Lyons Sampson, Mr. Heard, Mr. Johnson, and Mr. and Mrs. Stanton.

The return journey was started soon after eight o'clock, London being safely reached in good time.

As a motor lorry, belonging to the Elland Flour Company, was descending Luck Lane, Huddersfield, it dashed through a wall on the side of the road, and dropped in a broken condition into a field on the other side. The driver and his attendant, however, escaped without serious injury. So far the cause of the accident remains unexplained, but it is stated that the driver was compelled to do this to avoid running into some children playing in the road.

MR. MARK MAYHEW'S VISIT TO NICE.



IN the last issue of the *Automobile Club Notes*, Mr. Mark Mayhew, L.C.C., gives an interesting account of his recent visit to Nice, from which we take the following:—

My motor visit to the shores of the Mediterranean has been the most enjoyable holiday I have ever experienced. For a keen motor man nothing could be more exciting or satisfying than to live there in the early spring 'midst an atmosphere redolent of petrol, conversation saturated with petrol, and men living on petrol. One meets there everyone famous in the automobile world. Starting on Wednesday, March 6th, on my 16 h.p. Napier, with my friend Mr. Arthur Russell, my mechanic and baggage on board, I drove to Southampton, crossed to Havre, and then on to Paris on Thursday. The next day we started for Bordeaux, travelling by way of Orleans, Tours, Poitiers, arriving at Bordeaux on Sunday. Leaving Bordeaux on Tuesday, 12th March, we travelled by Carcassonne, Montpellier, Marseilles, to Nice, where we arrived on Friday.

Our journey had been absolutely without incident, excepting two punctures. With fine but cold weather, the most magnificent roads in the world (excepting the last part of the journey), and the car always travelling very well, we had the most enjoyable run I have ever experienced. There was never the slightest trouble with the engine or any part of the car beyond a slight sinking of the back springs.

But it is of what I saw at Nice I wish more particularly to write. We found collected in the garage of the Automobile Club of Nice probably the best and most powerful of all the cars that existed in the different parts of Europe, they having made Nice their rendez-

vous for the race week. The most noticeable point, perhaps, from an Englishman's view was not so much the engine-power of the cars as their remarkable lightness. Taking, for instance, the most successful machines in the races, the "Mercédès" or new type of Cannstatt Daimler, we found an engine of about 35 or 40 h.p., a long car with very comfortable accommodation, which in racing rig weighs slightly over one ton and for tourist purposes about 22 cwt. Five of these started in the *vitesse* and tourist races over very difficult, dangerous, mountainous rough roads—and came back without mishap.

It is said that the English Daimler Company has the right to the drawings and particulars of all cars made by the Cannstatt firm. If this be so, and if the new board of the English Daimler Company is awake, it is to be hoped that they will instruct their engineers to turn out a complete copy of the "Mercédès," and thus take advantage of the brains and money which have been expended on these cars. The latest manufactured type of Panhard is 20 h.p. nominal, said to develop about 30 h.p. on the brake. These cars weigh under a ton in racing *carrosserie*, and are supplied with change of speed and direction all on one lever, startlingly small gear, and a few improvements in the usual

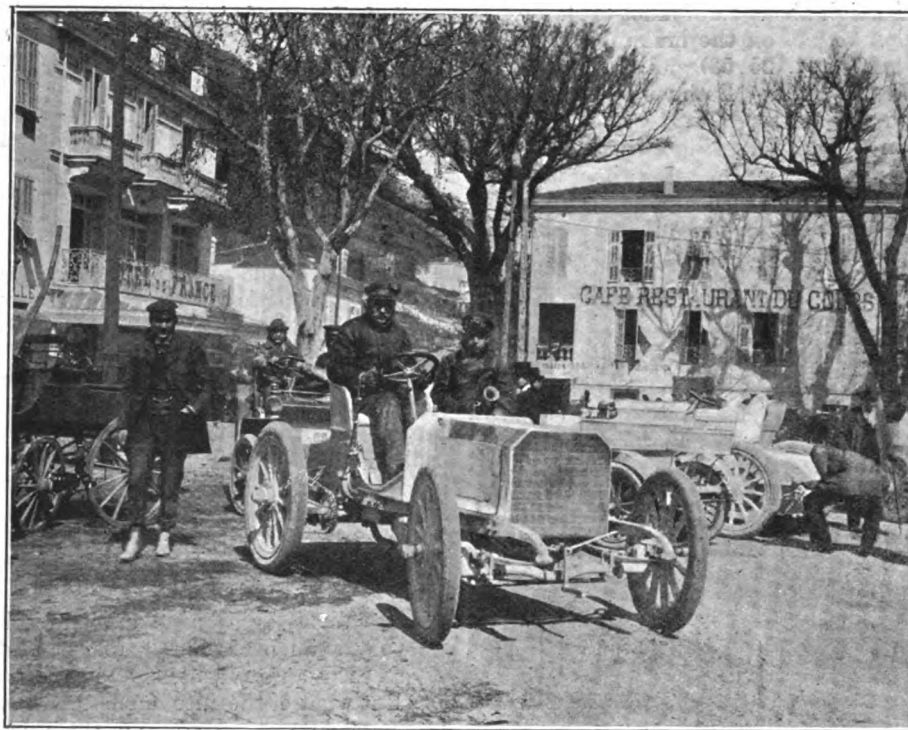
type of engine. Their speed was considerable, but not so great as the "Mercédès," owing to the smaller engine. There were one or two big Mors carriages of not less than 45 h.p., which were probably really the fastest cars there. The failure of Mors and Panhard in the races was undoubtedly due very largely to a number of little mishaps, such as slipping clutches, troublesome pumps, etc., which might easily have been avoided by more care on the part of the makers in turning them out, and by their owners by trying them thoroughly before the start. Rochet-Schneider have brought out an extremely well made 24 h.p. car which does them great credit and looks as if it would last.

So much for the big cars. Now let me notice the voituresses. The most noticeable is the 12 h.p. racing Darracq, a mere skeleton with a huge engine, very noisy but extremely fast. It would have astonished some of our *chauffeurs* to have seen these little monsters tear up the steep sides of La Turbie. Then there were the little Peugeotts, both racing and tourist, with four wheels of the same size, bicycle pattern, and electric ignition. But the engine is still in the rear as in the old types. The big racing Renault did not show up. Among the promenade voituresses nothing could be prettier or more satisfactory than the

little 6 h.p. Darracq with its elegant bonnet, and the 10 h.p. Mors with perfectly charming carriage work.

The racing tricycles can only be described as terrible. Ridden with open exhaust boxes at fearful speeds by men who have the courage and certainly the appearance of fiends, these machines are hardly likely to attract the English buyer.

There were numerous other patterns which it is hardly necessary or interesting to mention. But I could not see all of these magnificent automobiles without drawing some important conclusions and making a few remarks upon some of their peculiarities. Their great feature is unquestionably their lightness,



THE NICE MEETING—WERNER ON THE 35 H.P. "MERCEDES" CAR.
[Cliche de] [Allgemeine Automobil Zeitung.]

This in itself does away with the need for so much strength, as the cars bob over lumps and bad places such as *caniveaux* in the road like a cork instead of dashing against or crashing into them, as is inevitably the case with a heavy car. The result of this is that in springs and tires there is an enormous saving. In order to illustrate here what is being done in France and also to get further experience myself, I bought a 20 h.p. Panhard just out of the works which had been sent to Nice, and drove it home. The tires would surprise any one who examined them, being practically without cuts, the tread being worn to a nice fine sand-paper surface all the way round after a journey of 1,000 miles. Another point which is being made much of by the Continental manufacturers is the power of the foot-brake. This can be relied upon to stop the car under almost any circumstances, so that one may go at pretty well full speed down a winding mountain road and pull up easily for turning the bends. To compare the fitting, however, of the foreign cars with that of the English would be, in my opinion, decidedly in favour of those produced by our manufacturers. Much more care appears to be taken before the English car leaves the shops. It is also necessary to point out

that the racing cars I have spoken of are not expected to go through more than two or three long races. A big overhaul would be necessary after each long race, and future purchasers know, or at least find out afterwards, that they require a great deal of attention.

I have great hopes that an English car will do well in the Gordon-Bennett race of 1902; but as regards 1901 I fear we are on the wrong track in building heavy cars. But still the fact remains that they produce a faster machine than we have been able at present, and I think this is largely because of its lightness, and, for my part, I would rather spend a few pounds in putting in new gear once every five or six months than perhaps £100 in the same time in burst or worn out tires.

The following rough comparative table between the travelling powers of my 16 h.p. Napier and the 20 h.p. Panhard may be interesting (brake horse-power—Panhard 30; Napier 23½):—

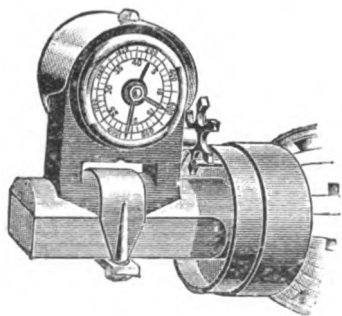
Uphill and upward inclines—the Panhard much faster.
Downhill and downward inclines—Napier rather faster.
Perfectly smooth level ground—almost identical speed.
Uneven to rough level—Panhard 5 miles an hour faster.

I happen to know that the Panhard car to be run in the Gordon-Bennett race will weigh about 1,250 kilos (cwt. 24.55), and its engine will develop 55 h.p. on the brake. The motors will weigh about 1,300 kilos (cwt. 25.53) and the engine will produce about 65 h.p. on the brake. Both weights are given without water and petrol.

In conclusion, I can only advise English automobilists who wish to enjoy themselves and at the same time learn for certain more than they ever dreamt of before about automobiles, to drive their cars to Nice next spring for the race week, and see for themselves one of those things which appears to be "done better abroad."

THE BELL ODOMETER.

THE accompanying illustration shows the new odometer which has recently been put on the market by the S. H. Davis Mfg. Co., of Portland, Mass. This instrument takes the same place on vehicles that the cyclometer does on bicycles. It fastens to the axle, and is operated by a steel pin in the hub of one of the wheels. The dial contains three



indexes of different colours. The red index measures a mile with every revolution, the dial dividing the mile into forty spaces of eight rods each. At the end of each mile a small bell inside the odometer rings. The yellow index revolves once in forty miles, and each space represents a mile, and the blue index revolves once in 1,600 miles, so that each space represents forty miles. The instruments are made for all wheels from 28 to 54 inches in diameter, varying by half inches.

THE demonstration of motor-cars before the members of the Gloucestershire County Council will take place this afternoon (Saturday). The following members of the Council have expressed their intention to take drives on this occasion:—Mr. J. S. Gibbons, Mr. E. H. Parsonage, Mr. Edward Playne, Mr. A. E. Dykins, Mr. J. R. Lane.

FLOTSAM AND JETSAM.

BY "FLANEUR."

THE numbering of motor-cars is the panacea for all the ills of traffic. Such, at least, is the view of certain County Councillors; it is not mine, nor that of any man who has first-hand knowledge of the conditions of road usage, in town or country alike. It happens that I have seen a good deal of the life of our highways in nearly every English county, and in many parts of Scotland, Ireland, and Wales; but during all the tens of thousands of miles that I have travelled by road within the British Isles, I cannot recall one single instance where the mere fact of carrying a number would have been of the slightest benefit to anyone concerned. But the average County Councillor thinks otherwise—"and Brutus is an honourable man."

Was it not from Surrey that this idea of scintillating luminosity first emanated? Did not the sapient fathers of that county, indeed, e'en summon "experience" to their aid when they declared, in a portentous letter to the *Times*, that it had been found that the Light Locomotives Act was far from adequate to control the automobilist, albeit the said Act, forsooth, *had not come into operation* at the time this letter saw the light? There were yet nine days to pass before "Emancipation Day" arrived, from which it is clear that Surrey had seen a modern miracle. We speak sometimes of "positive experience" the Surrey fathers boasted of experience by anticipation, the precise value of which is mathematically expressed as minus nine.

BUT Surrey has done more; let us not fail to enumerate her achievements, for it is very evident that she is proud of them. Twelve months ago the trees, the walls, and the bar-parlours of the county were bedecked with certain notices, none too grammatically expressed, in which all cyclists and automobilists were admonished as to reckless driving, and from these exclusive proclamations an awe-struck public would infer that the users of motor-cars and cycles were the sovereign malefactors of the day. No word was said by Captain Sant, who signed these manifestoes, as to the furious driving of horse-drawn traps, their almost universal non-observance of the rule of the road, their oft-recurrent evasion of the bye-laws as to lights. It was the owners of man or motor-driven vehicles alone that were put in this constabulary pillory; the horse and all its satellites were "sacrosanct."

WELL, cyclists can take care of themselves in this matter; they skim over Surrey roads in scores of thousands, and yet scarcely an accident is recorded from year's end to year's end. But what of the automobilist? How much longer is he disposed to tolerate the exposure of these needless and offensive placards, which are still exposed throughout the county, and one of which even stares him in the face when he removes the stains of travel in the Automobile Club itself? Whereas automobilists are the most skilled and careful of all road-users, and drive the most perfectly-controlled of all vehicles, they are virtually held up to obloquy by the Chief Constable of the County, and the immediate effect upon the mind of every horse-driver who reads these superfluous and insulting warnings is to invest him with self-righteous satisfaction, and the ever-present, if fallacious, idea that motor-cars do but exist on sufferance. As a consequence he assumes, whenever he comes across a motor-car, that he himself is free of all responsibility, and that the onus rests solely with the driver of the car to turn aside, or even come to a dead stop, and that, if the horse should happen to be frightened, the bare idea of its owner being at fault is beyond the pale of possibility. And probably, if he reads the reports of County Council deliberations, he will echo the sentiment with which I have opened these *obiter dicta*, and declare that "the numbering of motor-cars is the panacea for all the ills of traffic."

BUT is it? What bearing has the numbering of motor-cars upon nine-tenths of the rampant illegalities of the road, to which

the Chief Constable of Surrey habitually turns a blind eye? As was mentioned in this journal last week, the Lord Justice Clerk counted no less than fifty-three unattended horses in the course of thirty miles: will Captain Sant explain why he sanctions this wholesale violation of the Highways Act? And will he further explain how the numbering of the car on which Lord Kingsburgh was riding would have prevented any of those three and fifty animals from shying had they felt so inclined? Meanwhile, it is surely reasonable to expect that the police will be instructed to carry out the law in future where horse-drivers are concerned, not only in this matter of unattended and even untethered animals, but also as regards the rule of the road and the evasion of the lights bye-laws.

It is to the stultifying antipathy to any faster means of locomotion than that of the horse that we owe the gestation of "numbering" resolutions, or absurd warnings like the one with which Surrey is placarded. It is a singular fact, nevertheless, that high speed has never yet been shown to be a direct or even indirect cause of any automobile accident in this country, nor of the frightening of horses, for animals which have not been properly trained, and show fear in the presence of motor-cars, will do so irrespective of their speed. Though I have ridden on many cars, I have never found any type more liable than another to disturb equine equanimity, or a fast car more dangerous to travel on, *per se*, than one that could not go at half the speed. It is the individual driver who is the important factor in the situation, and, indeed, I would prefer to go at fifty miles an hour with Mr. Rolls, Mr. Montagu, or Mr. Edge than at five an hour with a novice on his first Benz.

A FEW weeks ago I found myself on a 16 h.p. car, which, up to that time, was the fastest on which I had ever ridden. Knowing, as I did, that it is the driver, not the power of the motor, that one has to consider, I did not entertain the most infinitesimal alarm as to possible mishaps; but I did make up my mind before the start to note the circumstances of any occurrence by the way, with the special object of determining whether pure speed had any bearing on the issue, and whether, under like conditions, a slower car would have brought about an opposite result. For my own part, I stood in no need of conversion on the subject, but I put myself for the nonce in the position of a disinterested observer, in order that I might speak with added emphasis did matters eventuate as I surmised.

LET me describe what happened. The car picked me up at Surbiton, and barely had we left the outskirts of the parish than incident number one occurred. Two hundred yards ahead, on the straight road to Hook, we saw a slow cart in the middle of the road. The driver proved to be a boy, who seemed, and was, quite incapable of directing the animal between the shafts. As we drew nearer, the horse began slowly to turn round; we slackened speed, and finally stopped altogether, whereupon the noble beast incontinently backed the cart into the car, and did nine guineas' worth of damage. I hunted up the owner of this intelligent quadruped, and brought him to the spot. Stretching right away for several hundred yards back, and clearly visible by reason of the wet surface and the slightly downward slope, were the broad marks of our 120 millimetre tires, closely parallel with the kerb as far as the eye could see. In the face of this damning evidence the owner of the cart, a local publican, could say little in defence, after some preliminary bluster and splenetic comments on the car itself; he has since paid the claim for nine guineas. As this was a "motor-car accident" one ought to have read into it, as a matter of course, the culpability of the automobilists concerned, the value of Captain Sant's "warning," and the super-sublimated wisdom of the County Council doctrine as to the numbering of cars. I cannot say, however, that the incident impressed me in this light, though I have premised that I started out in an impartial frame of mind.

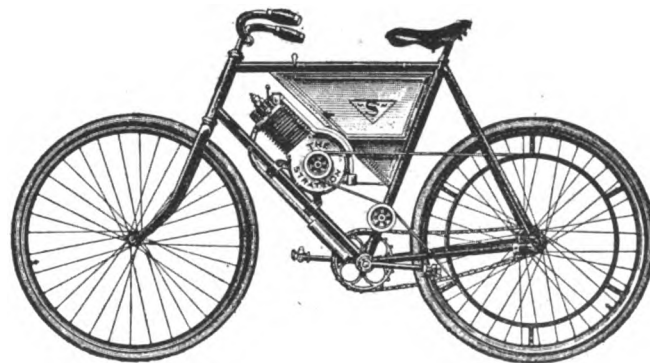
SOMEWHAT ruffled by this interruption we set off for Leatherhead, after patching up the damage, and travelled serenely for

the next few miles. [While ascending the 1 in 11 hill out of the town, however, we met an empty hearse on the wrong side of the road. As we drew close we further observed that the driver was fast asleep! Nothing that is wrong ever happens on the road except in the case of motor-cars, and no doubt it may be urged that the driver in question was but exercising his rights; but if this proposition be too broad even for a restrictive County Councillor or Captain Sant, perhaps they will kindly explain how the "numbering" resolutions of the one or the "warning" of the other would have applied to the circumstances of the case. We had to stop still on the hill until we had awakened the somnolent driver of the hearse with our horn, whereupon he lazily crossed to his proper side. But for ourselves he might have driven into something, or overturned the hearse at the awkward corner just below.]

BEFORE we got to Guildford we had encountered several unattended horses, and were nearly collided with by a trap driven very wide at a corner, which we ourselves had approached with extreme care, not merely from ordinary caution but also because of the greasy condition of the road. I have not the smallest doubt in my own mind but that the driver of the trap was quite prepared to support a "numbering" resolution, and equally to applaud the Chief Constable's "warning"; but the relevancy of either was no more apparent than before. Later still, as we were returning from Guildford by the Portsmouth route, we met a carriage and pair in the middle of the road. The car was not going at all fast, but the coachman was so frightened that he pulled over to the wrong side, and forced us outwards. At the foot of Pain's Hill we found a string of six carts outside a public-house, with not a single person in charge of any of the horses. This is a spot which has long been sacred to the persecution of cyclists; it must be left to the local police to state why the law was not enforced against the drivers of these animals also. It is quite on the cards, however, that they do not even know the provisions of the Highways Act in this respect, their superiors being more busily engaged in enunciating the virtues of their pet panacea, namely the carrying of a number by every car, and also in posting up superfluous "warnings" against the most conspicuously safe vehicles on the road.

THE STRATTON MOTOR-BICYCLE.

THE Stratton Motor-Bicycle Company, of Wall Street, New York, have lately introduced the motor-bicycle shown in the accompanying illustration. The motor, of 1½ h.p., is mounted over the lower tube of the frame, and drives by a belt to a large pulley on the rear wheel. The battery and spark coil, together with oil tank, which holds enough petrol for about fifty miles' travel, are contained in a triangular case. The motor is



started by several turns of the pedals, which, by a free wheel clutch, are then thrown out of engagement. The switch of the sparking apparatus is in one of the handles. The speed of the engine ranges from 1,500 to 2,000 revolutions per minute. The silencer, which is of the company's own design, is placed just in front of the bottom bracket, and is claimed to almost entirely eliminate the noise of the exhaust.

THE EFFECTS OF VIBRATION.



THE injurious effects of vibration on the strength of metals have been familiar to engineers for a long time, and their importance in connection with locomotive work has led to a perhaps somewhat exaggerated view regarding them to be taken in automobile matters; for it is at least doubtful whether, with modern tires, road vibration plays any large part in inducing crystallisation and fracture in the components of a car; it is more probable that when such occurs occasional excessive stresses, especially if alternate ones, are the principal cause. Vibration, however, from one source or another—and the small high speed engines so popular now are an obvious one—is apt to injuriously affect the lighter horizontal members of the mechanism, such as brake-rods, etc., and the presence of loose joints in these greatly aggravates the evil. Signs of looseness in such parts should be carefully attended to and remedied, and even a leather washer or, in default of anything else a loop of string packed into the loose joint is better than nothing, while such care will be repaid by a silent-running car, quite 75 per cent. of the usual noise of a car being generally attributable to such easily rectified causes. To facilitate this all joints should be fitted with removable bushes, preferably of phosphor bronze, where there is no other means of taking up wear; if this is not done, the process of putting in a bush or a larger pin is sometimes interfered with by there being hardly sufficient metal left to safely take it. Where a horizontal rod, as that of a brake, is required to act in tension only, it might be advantageously replaced by a thin and somewhat flexible bar of flat section, while the fitting of an adjusting link, with screw-thread, in the middle of a round bar of this kind is a direct encouragement to breakage; if adjustment is necessary it should be near one end. In one or two cases the writer has replaced a 3-8 in. brake-link of some length, that gave repeated trouble by fracture, with an eight-gauge steel wire, with satisfactory results; in one a $\frac{1}{2}$ in. bar had been first substituted, which soon broke.

For the same reason a pair of light tension rods should be preferable for the connection of the steering wheels to the usual solid bar intended to act both under tension and compression; and the same principle would apply throughout the whole design.

Such unpleasant effects, however, as fractures are fortunately comparatively rare; and the usual way in which vibration demonstrates itself is in the loosening of nuts, bolts, and so on, while the means adopted for preventing this are not always satisfactory, seldom soaring beyond the time-honoured pair of lock-nuts with or without a split pin above them. The lock-nuts, if well fitted, do their work, and though requiring to be awkwardly bulky if they are to be easily adjusted, are on the whole the best where adjustment is needful; the only function of the split pin being to prevent the nuts being lost, as a loose nut will take no very long time to shear a split pin through. If, therefore, the latter is used with a single nut it should be of ample dimensions and a tight fit. In places such as bearing caps and piston rod big ends, it sometimes happens that a particular nut gives repeated trouble. This may be caused by a want of alignment in the bearings; otherwise it will generally be found

that the lock-nuts or the bolt they are on have not got a true thread, so that their faces do not bed firmly against each other. In some cases the insertion of a thin leather or fibre washer under a nut will prevent its easily shaking loose; while in the instance of an adjustable bearing cap, a piece of wood or fibre packing under the ears of the cap, of such a thickness that when the cap is bolted down in adjustment the packing is slightly compressed, will often cure a tendency to looseness. More elaborate devices than lock-nuts are in use on some foreign cars, the simplest being a miniature spanner embracing the nut, the handle of which is attached to the part against which the nut bears by a small screw; another much resembling the clamping-piece of the familiar Bown bearing and needing a toothed edge on the nut, both of which are very good if the small screw does not loosen. Another ingenious one consists in having a pentagon head above the screw on the bolt, on which a plate is retained by a split pin, having a pair of ears embracing two of the hexagon sides of the nut, the five positions of the plate on the pentagon with its six positions on the hexagon giving the power of fixing at every thirteenth of a revolution of the nut.

The writer recently was driving a car which developed an alarming noise in the crank chamber, and on investigation found that four countersunk screws holding the crank counterpoise were merely secured by a large centre-punch mark in the metal

opposite the slot of the screw, and one of these, not unnaturally, had protested by making a journey of exploration on its own account, to its serious detriment. It is to be regretted that in little matters of this sort our own makers are frequently less careful than Continental ones. The safest method, after all, of securing a nut or screw is the somewhat crude one of riveting; and it is worth noting that if the end of the bolt or stud be hollowed out somewhat into a cup-shape, this may be done with less violence, and less trouble will attend its removal if needful; but of course

it is only admissible where adjustment is not required.

The "helical" nuts, which are composed of a left-hand spiral of solid steel, shaped outwardly and inwardly to the semblance of a nut, seem to be very satisfactory, and are claimed to be self-locking; but how far they may be depended on for this under automobile conditions is not quite clear as yet. Finally—and this is a point which British rather than foreign makers need to lay to heart—in automobile design the ability to resist vibration, as to some extent the ability to resist strains, is to be sought in elasticity rather than rigidity, and in lightness rather than weight; and the limits of possibility in these directions are only to be found by practical experiment, even at the cost of some unpleasantness to users when they are exceeded.

R. W. BUTTEMER.

WRITING in the *Times of India* on the desirability of the Bombay Municipality substituting motor-cars for the present fire-brigade cars drawn by horses, a correspondent says: "I think they would be both more economical and less dangerous. The present primitive mode of using horses as a traction power is both unreliable and unsafe. The animals get restive or shy and are fast and furious at the wrong moment, and, instead of becoming useful, prove a source of risk to the life and limb of the pedestrian."

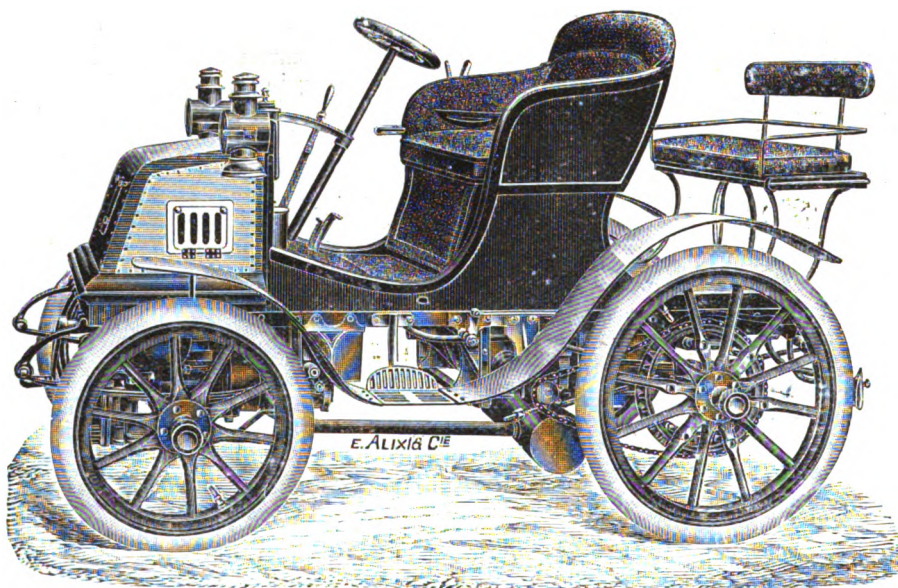


FIG. 1.—GENERAL VIEW OF THE TOURAND SPIDER. (See opposite page.)

THE TOURAND MOTOR-CAR.

IN our issue of the 16th March, 1900, we published a brief description of the petroleum-spirit motor-car built by Messrs. Tourand and Co., of Havre, France. We are now able to give some additional particulars and drawings of the vehicle, which appears to comprise several special features. The motor is located in the fore part of the frame under a bonnet; it is of the Crozet type, the feature being the employment of two vertical balanced cylinders, with only one inlet and one exhaust valve. It is capable of developing $6\frac{1}{2}$ h.p., and is fitted with electrical

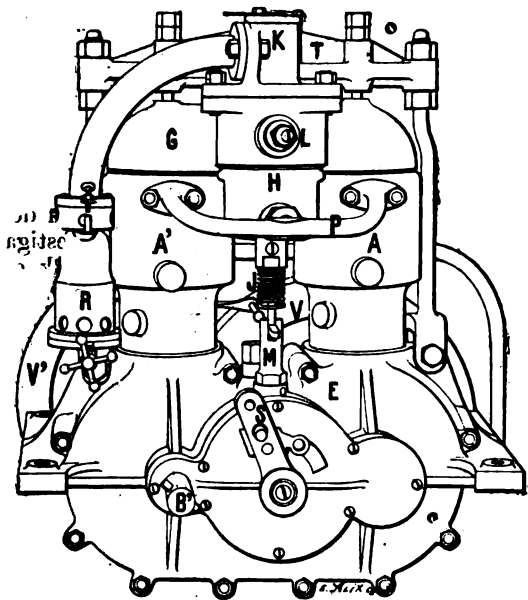


FIG. 2.—SIDE VIEW OF MOTOR.

ignition and water-jacketed cylinders. A general view and sectional elevation of the motor are given in Figs. 2 and 4. The valve chamber is located centrally at the top between the two cylinders AA', K and H being respectively the inlet and exhaust valves, L being the sparking plug. The exhaust-valve control gear is driven off the shaft B', and is enclosed in a small case projecting from the crank case. Each crank shaft is provided with a flywheel

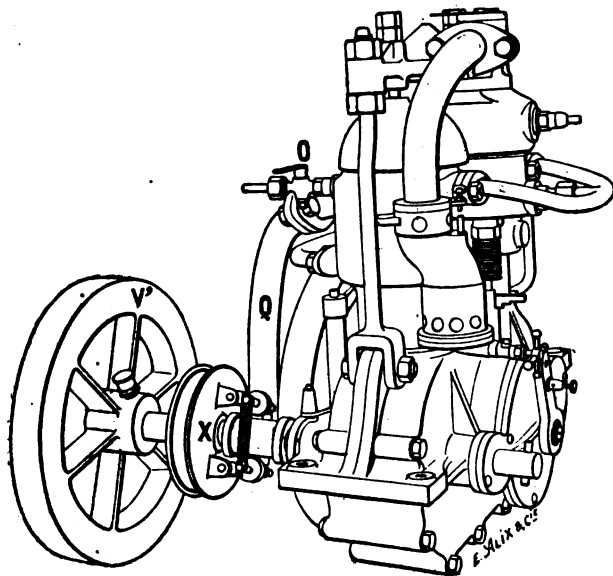


FIG. 3.—VIEW OF MOTOR, SHOWING GOVERNOR.

and also counterweight, DD', the two shafts being connected together by the flywheels CC', the flywheel of one of the shafts being made to act as one half of the driving clutch. The carburettor employed is of the spraying type. The petrol flows by a pipe into a chamber. A movable rod carrying at its end an inverted

"mushroom" with conical end, closes the tube. At each suction stroke of the motor warm air is drawn in by a pipe; the mushroom is at the same time automatically raised, allowing a charge of petrol to flow. The spirit is projected against the sides of the mushroom, and intimately mixed with the air. A butterfly nut is provided at the top of the device by means of which the amount of "lift" allowed to the rod, and consequently the amount of petrol inspired for one charge, can be regulated. An additional air inlet is contrived on the pipe con-

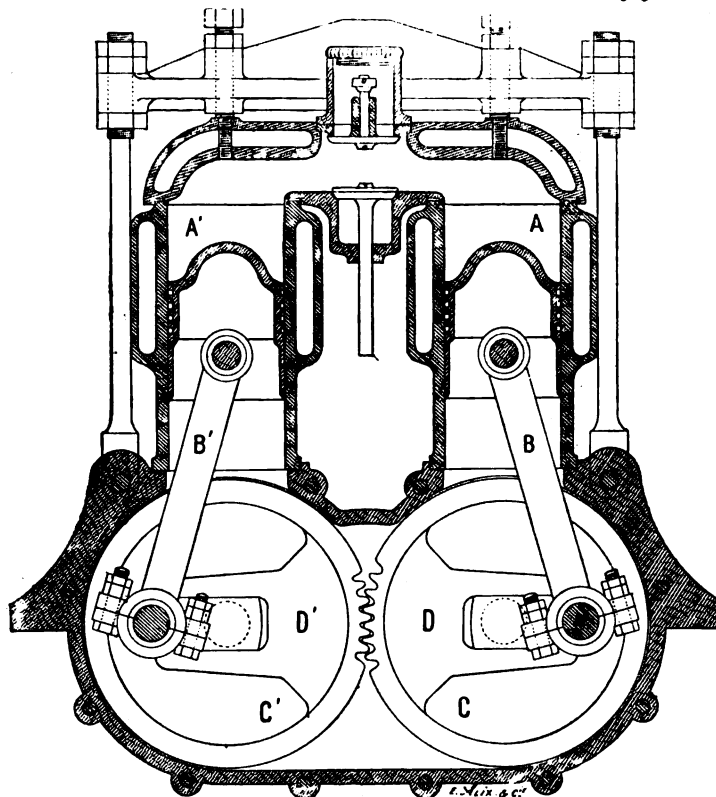


FIG. 4.—SECTION OF MOTOR.

veying the carburetted air to the explosion chamber. The motor is provided with a centrifugal governor mounted on one of the crank shafts and acting on the exhaust valve. A pedal-operated "accelerator" is also provided by means of which the speed of the engine can be regulated between 300 and 900 revolutions per

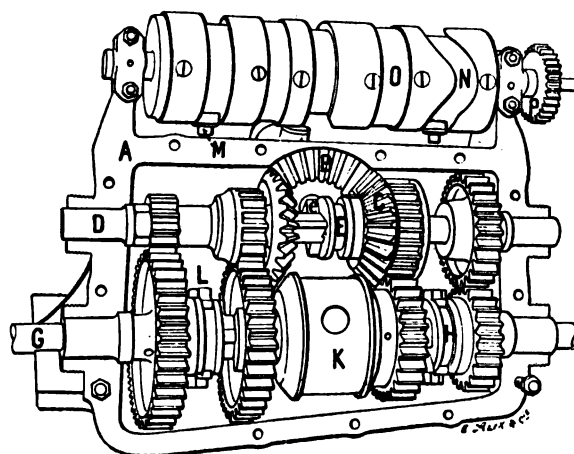


FIG. 5.—SECTION OF VARIABLE-SPEED GEAR.

minute. The water circulation is maintained by a small pump driven by a belt off the main crank shaft. A radiating coil is provided in the fore part of the frame.

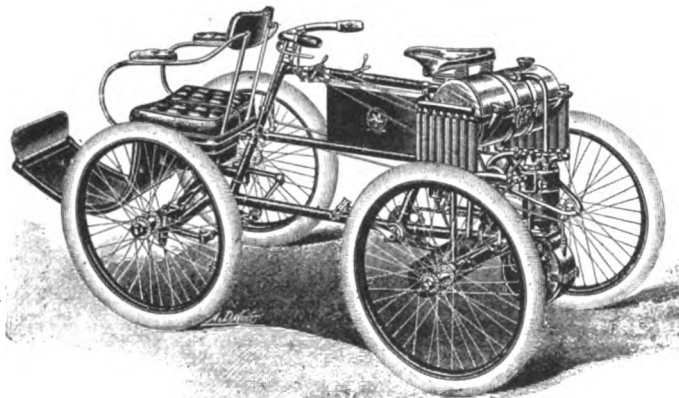
Coming now to the transmission mechanism, four speeds forward and reverse motion are available, all controlled by one lever working on a sector. As already stated, the flywheel of the main shaft forms a part of a friction clutch,

by means of which the motor can be cut out from the transmission gear at will. The extension of the motor shaft terminates in a bevel gear meshing with a corresponding wheel on a cross shaft. This carries, enclosed in an oil-containing case, a variable speed gear of the Montauban-Marchandier type, of which a section is given in Fig. 5. From the differential counter-shaft the power is conveyed to the rear road wheels by the usual sprocket wheels and chains.

The frame of the car is built up of steel angles, while the steering is controlled by an inclined hand-wheel. Both hand and foot brakes are provided, while the road wheels are of wood shod with Michelin pneumatic tires. Special attention has been paid to lubrication; the petrol and water tanks have a capacity sufficient for a run of 100 kilometres. The car complete weighs about 14 cwt. The motor and gear being carried on an independent frame any type of carriage body can be fitted. Fig. 1 shows a three-seated spider, but Messrs. Tourand are also building two-seated cars, *tonneaux*, etc.

THE PERFECTA WATER-COOLED MOTOR-QUADRICYCLE.

IN addition to their well-known light car Messrs. Darracq and Co., of Suresnes (Seine), have lately introduced a new quadricycle with water-cooled motor, of which an illustration is given herewith. It is fitted with a Perfecta water-cooled engine developing from 3 to 4½ h.p., while a more powerful type for professional riders is built with an engine giving off from 5 to 6½ h.p. The circular tank shown at the rear of the saddle is divided into two halves, the top half containing the cooling water, and the bottom half the petrol and lubricating oil in separate



compartments. The connection of the water-circulating system is clearly shown in the illustration. Leaving the bottom of the upper tank by four exits, the water flows through the cooling radiating tubes on either side of the vehicle, and from thence by the two pipes shown to the water inlet at the bottom of the cylinder jacket. From the top of the combustion chamber it flows by the pipe shown to the top of the top tank. The carburettor is of the Longuemare type. The framework of the machine is well designed, while the front seat is supported on laminated steel springs.

THE General Automobile Agency of 100, Long Acre, W.C., have just received from Paris a 6 h.p. Darracq light car fitted with a four-seated phaeton body. The rear seats are separate and hinged, turning up from the centre to admit of entrance from the rear.

WE regret to learn of the death of Mr. J. P. Sweeney, of the Grappler Tire Company, Ltd. He was carried away with terrible suddenness. He got an attack of brain paralysis, and only withstood it for two days. At the motor-car parade at Ball's Bridge, Dublin, on the 11th inst., he drove the Grappler Tire Company's Mors car, and seemed to be in his usual health, and yet within six days he was dead.

JOTTINGS BY A WORLDLING.

As many English automobilists will be taking their cars over for the Gordon Bennett Cup, it will doubtless be of interest to readers of the *Motor-Car Journal* to know the cheapest and best way of having them carried from London to a French port. I have studied the question very thoroughly, and I have come to the conclusion that the Bennet line from London Bridge to Boulogne is by far the most satisfactory. The charges are from 30s. to 40s. according to weight, and one's servant can travel with the car in a sufficiently comfortable berth for the small charge of 10s. The best hotel in Boulogne is the Imperial; it has a good *garage*. Bayly's Hôtel de Folkestone is very comfortable and the cooking at the Paris is excellent. I hear that Hill, of 86, rue Thiers, has a good repair shop and does his work well. The road to Paris is good but hilly, starting with a veritable mountain and run down into Pont-de-Briques. Those who break the journey at Amiens will find the Hôtel de l'Univers very comfortable, and Devanaux, of 13, Boulevard Alsace-Lorraine, a good *mécanicien*. When I am in Paris with a car I always stay at the Continental, because there is a covered yard behind in which I leave it at night without paying anything but a 5 francs tip to the *concierge*.

I HAD a curious experience the other day in driving through the New Forest at night. It was very dark and I could only see a little way in front of me; indeed, only so far as my Dietz lamps threw their yellow light. I was going very slowly when I suddenly saw a large dark object in front of me that seemed to be moving. I drove up to it very cautiously to find that it was a forest pony standing broadside on in an attitude of complete indifference to my vigorous "hooting." I had at last to get down and persuade him with some violence to give me room to pass. *Apropos de bottes*, the roads in the Forest are very good.

THIS occurred on my way to Bournemouth, a most enlightened town, where there are dozens of automobiles. There are a large number of Daimler public service cars, and nearly every medical has a De Dion voiturette. I saw a Mors *petit duc* and a Benz, which I was informed had never been driven on top speed by its owner, a rather nervous man. I heard a Bollée several times, and I was once nearly run over by a Star.

MR. HALES, the brilliant war correspondent of the *Daily News*, told me the other day, as we were walking through Richmond Park, that powerful cars carrying a maxim and eight or ten men would be of incalculable value in South Africa. "But what about roads?" I objected. "Roads?" was his answer; "you don't want roads. Why the veldt is nowhere so rough as this park." I wonder if the War Office knows this?

DE DION voiturettes are very popular with members of the Stock Exchange. Mr. Edgar Pullbrook, a jobber in the Kaffir market, has just bought one of the new 4½ h.p. Cudells, but this is not his first experience of the joys of automobilism, as I saw him on a quad over a year ago. And I hear that he went for a tour at Christmas on a friend's 3½ h.p. car.

No self-respecting country house should be without an automobile for station work. You have no right to send a good pair of horses to catch cold waiting for trains, when for £300 or £400 you can buy a car that will do the work more satisfactorily. On the other hand, I do not believe that we shall ever live to see horses ousted from the Park. They are much too decorative for Woman, to whom, after all, the Park belongs, ever to be unfaithful to. I for one rather resent the presence of our dear *Ten-fenfs* between Hyde Park Corner and Kensington Gardens. I should, indeed, be glad if they were not allowed there, as in the Avenue des Acacias. This is not *lese automobile* but mere worldliness based on the principle of the music-hall song, "Oh, I want to be popular, popular, popular!"

CONTINENTAL NOTES.

BY "AUTOMAN."

THE Charity Fête organised by the Belgian Automobile Club took place in the Hall du Centenaire, at Brussels, on Sunday, the 14th inst., and was in every way a brilliant success. Financially speaking—and before every other consideration in a charity fête, the question of the financial result must take precedence—it was a surprise, bringing as it did to the Society for the Protection of Children about £600. There were nearly 150 entries for the several competitions, and some five to six thousand spectators occupied the various seats. In the Royal Box I noticed Monseigneur the Count of Flanders, their Royal Highnesses the Prince and Princess Albert of Belgium, the Prince and Princess Fritz of Hohenzollern, and the Duke and Duchess of Vendôme. Prince Victor Napoleon sat beside the jury, and in the boxes close by were the Ministers of Finance and of Industry, and many members of the foreign embassies. There were altogether eight competitions, of which the most interesting were certainly the combined movements commanded by Captain Soucy, of the second regiment of the Guides, at whose word of command the cars turned to the right and to the left, and made all kinds of complicated manœuvres without the least accident of any kind. After the competitions were concluded there was a battle of flowers, for which the competing carriages re-entered the arena in order to bombard the spectators with fragrant ammunition in the shape of lilies, ranunculus, anemones, and violets.

THE Swiss Automobile Club held its first competition on the 14th inst., in the shape of a race for voiturettes weighing less than 10 cwt., and having not more than 7 h.p. The distance covered was sixty-one miles, partly in French and partly in Swiss territory, beginning at Port-Noir and ending at the Parc des Sports at Charmilles. The winner was Mr. George Richard, of Paris, his time being 3 hours 57 minutes. The weather could not have been worse, and militated seriously against speed.

AUTOMOBILISTS cannot be too careful in passing bicycles on the road. We are all a little apt to rely too much on the powers of quickly swerving on the part of the cyclist, and this is often itself a cause of additional danger. Two fatal accidents in the Bois de Boulogne, Paris, which occurred on Friday week last, prompt me to give a word of warning to drivers of fast cars. In the first case Girardot's *mécanicien* was passing the little tramway station of the Jardin d'Acclimatation, at the gates of the Bois, and a cyclist was pedalling slowly in front of him on his own side of the road, but hearing a sudden blast of the warning motor-car horn, he seems to have lost his presence of mind, and swerved outwards instead of towards the footpath. The motor-car had not time to pull up, and the unfortunate cyclist was killed. In the second case two cyclists were on their wrong side, and met a motor-car in the road round the racecourse at Longchamps. The motorist was on his right side, and kept to it until he was close on to the cyclists; the latter, instead of crossing on to their own side of the road, tried to hug the footpath. One succeeded, but in swerving to avoid him the automobilist struck the other full and killed him outright. Evidently the fault in both cases was with the cyclists, but I have often noticed that a great number of cyclists are given to these errors of judgment, and it is therefore necessary for motorists to take this seriously into account when nearing a bicycle on the road.

THE King of the Belgians has certainly taken to motor-cars in serious earnest. When he arrived in Paris last week he was met at the Lyons Railway Station by two motor-cars, the one a splendid *coupé* of 16 h.p. driven by Charron, and bearing the Royal arms, and in which the King and the Princess Clementine were driven to the Elysée Palace Hotel, and the other a 20 h.p., in which the King's suite took their seats. In the afternoon the

King and his daughter could be seen again motoring in the Bois de Boulogne.

FOLLOWING the lead of his Royal uncle, Prince Albert of Belgium has just ordered a motor-car. He has, however, been more patriotic than the King, and his choice has fallen on a car of the Gobron-Brillié system, manufactured in Belgium by Messrs. Nagaut, of Liège.

THE Paris-Berlin race, which is fixed for June 27th, 28th, and 29th, will be run in the following laps: First day, from the Fort of Champigny to Aix-la-Chapelle, 284½ miles, *via* Reims and Sedan; the second day, from Aix-la-Chapelle to Hanover, 276 miles, *via* Cologne and Düsseldorf; the third day, from Hanover to Berlin, 182 miles, *via* Magdebourg; total, 743 miles. There are already quite a number of makers bringing out new models of high-powered cars for this event. Amongst others M. Deschamps showed me a few days ago a new four-cylindered 12 h.p. car which he is preparing at his works in Brussels. He expects this car to be very light and yet robust, and though he does not pretend that he will be able to do the maximum speed of the Mercedes, he thinks that he has a chance of averaging a high rate of speed.

THE Italian 1,000-mile tour, which I mentioned to the readers of the *Journal* last week, is going to be quite an important event. Twenty-six cars are already entered, and the start will be made from Turin on April 27th at 7 a.m. German, French, and Italian cars are to compete, but I do not see any English makes represented. The tour will visit Genoa, Spezzia, Florence, Civita Vecchia, Rome, Perouse, Bologna, Padoue (from whence an excursion will be made to Venice by steamer), Brescia, ending up at Milan, where an exhibition will be held on May 12th. The total distance covered will be 1,018 miles, and the longest run in one day will be from Sienna to Civita Vecchia, 129 miles.

MICHELIN, in his "Monday" in the *Auto-Vélo*, this week treats of motor wheels with bicycle spokes, and warns users to be very careful that the heads of the spokes are flush with the inside of the rim, and do not project in the least degree. It is also necessary to see that the heads are covered by a canvas braid, fitted in the hollow of the rim. When tightening or loosening a spoke great care is necessary, and should the head project it should be levelled down with a file.

THE SPEEDWELL PORTABLE LIFTING JACK.



THE Speedwell Motor and Cycle Company, of Broad-street, Reading, have lately introduced the useful portable lifting jack shown in the accompanying illustration. A light and compact lifting jack has long been wanted to carry on cars, for use in tire troubles and wheel detaching, cleaning, etc. The Speedwell device is made of strong aluminium alloy, and, while weighing only three pounds, is capable of lifting any voiturette. It occupies very little space, and lifts from ten to fifteen inches; is automatically held at each lift, and when released falls to the original position. For heavy cars and workshop use the company are making the same model in malleable iron.

CORRESPONDENCE.

THE ASTER AND DE DION MOTORS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Though I hardly consider it worth replying to, Mr. Jarrott's letter under the above heading, published in your issue of the 13th, would not be the worse for a few remarks passed upon it. I am amused at Mr. Jarrott stating that my judgment must be warped in preferring, after experience, the Aster to the De Dion engine. I ask which of the two is likely to be guilty of partiality, a private gentleman entirely disinterested with the trade, or Mr. Jarrott, the representative of De Dion-Bouton in this country?

I shall not waste time nor trespass on your valuable space by entering into a discussion which under the circumstances would be absurd. However, it would be well for Mr. Jarrott to take a ride on a car fitted with an Aster engine, and when he has spoken with as many members of the trade in France as I have done, he will be obliged to think differently of the Aster.

Mr. Jarrott copies my letter of March 30th to a certain extent, substituting De Dion for Aster wherever I praised the Aster. As to the number of revolutions of the De Dion motor, which Mr. Jarrott says ranges from 200 to 3,000, I reserve my opinion in this matter, in order to avoid flat contradiction. The Aster people have made this a great study, to arrive at the best possible result, and their motors have an immense range, working with perfect regularity at below 200 revolutions a minute and at a greater number of revolutions than any other motor-car on the market, with the exception of perhaps the Buchet.

Mr. Jarrott brings to the fore the subject of his racing. There have been no races in England. Anybody can run round a track, and for a performance on a track I have absolute contempt. A good long-distance road race with plenty of stiff hill-work and sharp corners in succession to negotiate when going fast downhill is what brings out the good points of a machine and what exposes the bad. It also enables the riders to exert all their skill.

Besides the many times on which the Aster has beaten the De Dion, allow me to point out the last important race of the year, Nice-Salon-Nice, where three De Dions, 8 h.p., were unable to beat one solitary Aster 8 h.p. The latter came in a good first, in spite of the fact that the rider broke his saddle on the way back, and the brave fellow pluckily sat on the top tube of his machine the rest of the way.—Yours faithfully,

LEOPOLD CANNING.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I have been rather interested in the correspondence in the *Motor-Car Journal* comparing the Aster and the De Dion engines. I cannot agree with quite all that Mr. Canning says regarding the De Dion. The contact-breaker possibly does require rather more attention than that on the Aster, but I think Mr. Canning somewhat exaggerates its disadvantages. I, personally, think with Mr. Jarrott that the adjustment of the De Dion trembler is simplicity itself—anyone can do it. There is one advantage which I do not think has been touched on, which is that the De Dion engine always seems to me to run with greater regularity and steadiness at a very low rate of speed. This is, I think, due to the fact that the contact on the De Dion is vibratory, and at a low speed the trembler has plenty of time to vibrate on the contact-screw, giving a stream of sparks at the plug however slowly the engine may be running. On the Aster, the contact-breaker giving a simple make-and-break, the motor is more liable to miss-fire at slow speeds, the circuit not being made and broken with sufficient rapidity. However, possibly I may be mistaken and the miss-firing be due to other causes, but this is how it has always appeared to me.

The adjustment of the Aster contact-breaker is undoubtedly not quite so simple as the De Dion. Once adjusted properly, however, it certainly does stay so longer than the De Dion. For instance, on one occasion I had to adjust the contact-breaker of an Aster three or four times in a couple of miles, before I was quite satisfied I had got it perfect. On a De Dion I have always

found I could get the adjustment perfect at once without having two or three "shots" at the job.

Regarding noise, I think it is a case of "six to one and half-a-dozen of the other." I do not believe the Aster is any more silent than the De Dion—if anything, it is the other way about. For all this I do not for a moment wish to imply that the Aster is not a good motor. It is a splendid engine and runs the De Dion very close, but I lean towards the latter. Both have good points, but the De Dion is at all events my favourite.

In comparing the two motors one other point is of interest, that is the method of cooling. Some time ago, Mr. Crowden, of Leamington, made, in a paper which he read—why I do not know—the most absurd remarks about air-cooled motors. He also said it was a piece of very bad practice to clip or thread radiating ribs on the cylinders for cooling, as heat would not pass through two bodies as through a solid one. Well, we have in the De Dion and Aster motors the two systems compared; and what do we find? In the former, the ribs are cast with the cylinder barrel, being of the same metal and forming part of it; in the latter, a copper shell carrying the ribs is placed round the barrel proper, but does not form part of it, being quite a different piece of metal, and not only that, but is a different kind of metal. According to Mr. Crowden's dictum this should overheat more than the De Dion, but in practice the Aster is not in the least more prone to it than the De Dion. The ribs, too, on the cylinder head are smaller in area than the De Dion, but yet there is no overheating. The machine I base my experiences on is a 3 h.p. Phebus-Aster, the cylinder being, I believe, 75 mm. bore by 88 mm. stroke; gear, 5 by 1. With this high gear the motor had to be forced very hard up hills, a large gas supply being necessary, and yet I have never had trouble. In riding from Croydon to Chatham and back, for instance, one has to mount about a dozen very steep hills—in fact, this is by far the hilliest road I have ever ridden on, but the Aster never overheated in the least, though I rode in the hot summer weather of last year. This proves the system of separate metal for the ribs to be quite efficient.

The Aster surface carburettor was good, and the motor seemed to work with greater regularity when it was used, than the De Dion pattern of surface carburettor admitted; I mean to say over bumpy roads, of course. The Aster carburettor, by the way, was an almost exact copy of the early Daimler surface carburettor, only in the latter the air had to actually go under the surface of the spirit, and rise up saturated with vapour, while in the former the air only passed over the top of the petrol.

My ideal of a motor-trike is practically the latest De Dion, with water-cooled head, clutch spray carburettor, etc. I have not yet ridden one, but should very much like to, as the running must be perfect. Unfortunately I do not know where to go for one, as there are not many on the roads as yet. When I do get an opportunity of trying one, I shall certainly take it.—Your faithfully,

E. H. LIVESAY, JUN.

MOTOR-CARS FOR LIGHT RAILWAYS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Referring to Mr. F. J. Maxwell's letter in your issue of April 13th, in reference to the want of a motor-vehicle to run on three feet gauge lines in Ireland, if Mr. Maxwell will send us his exact requirements we shall be very pleased indeed to quote for these vehicles, and, if serious business is meant, will go into the matter most seriously and carefully.—Yours truly,

For the Motor Power Company, Limited,
S. F. EDGE.

TIRE TROUBLES.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—May I use the medium of your valuable paper to offer a suggestion for the benefit of users of Grappler tires? For the last six months I have used an Eadie trike fitted with Grappler pneumatic tires, and although the outer covers are perfect, never having been punctured, I have had considerable trouble with bursts in the inner tubes from internal causes. These occurred

as longitudinal bursts, about a quarter of an inch long, in the portion of the inner tube next to the bed of the rim. I found that all the spokes were firm and there were no projecting spoke heads, and further the bed of the rim was carefully protected by a tape. I carefully examined the inner tube and found that it showed marks along its surface indicating that at intervals it became distended as little pouches or balloons into the bed of the rim at places where the thick edges of the cover failed to meet. To strengthen these unsupported portions of the inner tube I obtained a strip of canvas the length of the tube and about two inches wide and solutioned it to the whole circumference of the tube next to the bed of the rim. I have had no trouble since. I wrote to the Grappler firm suggesting to them the advisability of fixing a flap to one edge of the cover to bridge over any gap that may form between the edges of the cover. Perhaps my suggestion may be useful to Mr. Egerton, who wrote about "tire troubles" in your issue of December 1st, 1900.—Yours truly,

R. D. R. ALLISON, M.D.

SOLID OR PNEUMATIC TIRES.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—In reply to your correspondent, Mr. St. L. Finney, I have pleasure in referring him to the Kingston Motor Company, High Street, Kingston-on-Thames, who have a tire such as he requires. The great advantage of the tire is that if it should puncture, which is very unlikely, the tire can be ridden deflated. Mr. Guy Lewin is having his miniature Panhard fitted with them. Hoping that this information may be of service.

Yours faithfully,

H. J. LAMB.

STEAM OR PETROLEUM SPIRIT.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I see your correspondent "Fair Play," writing anent the contests at the Crystal Palace, says he possesses a Locomobile and a 4 h.p. De Dion voiturette. I am thinking of purchasing one or the other, and I should like to hear his own experience comparing the one with the other. This would also, I venture to think, be of interest to many beside myself, who are "keen," but have to look at £150 before they spend it on a luxury.—Yours faithfully,

A MOTORIST IN EMBRYO.

MOTOR-STABLING CHARGES.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Your correspondent, Mr. Albert Hood, in his letter on the above subject, does not go so fully into detail as one might desire in causing such a statement to be published. The facts of the case are the following:—He came to the Swan Hotel, Alresford, about 8 p.m. on Good Friday, and if he had gone next morning, as he stated in his letter he did, he would have been charged 3s. 6d. He did not, however, leave until nearly 4 p.m. the next day, and considering that the proprietor moved two of his carriages out of the "lock up" coach-house so as to give him the whole use of it for repairs, etc., the charge cannot be regarded as exorbitant. As the letter of Mr. Albert Hood is likely to impart a mistaken impression, I trust you will be kind enough to publish mine.—Yours truly,

THOS. HANKIN.

[We consider the charge of 3s. 6d. altogether too high for stabling a car for one night, and we would avoid a place making such a charge. Two shillings for a car and eighteen pence for a voiturette is quite sufficient, in our opinion. The Portsmouth road is a popular road, and our correspondent would find, we think, it more profitable to charge the amounts we mention.—ED. M.-C.J.]

SPARKING TROUBLES.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Can any of your experienced readers suggest the cause of the following defect to the working of an Aster motor? The trouble is that the firing becomes very intermittent when much power is put on, either when on the level or when ascending hills. The following parts have been all carefully examined, and are in good order and correct:—Contact spring and screw,

valves and their springs, sparking plugs with their points not too far apart, battery fully charged, and no short circuit apparent. The defect has not appeared before, and so cannot be due to overheating, as it comes on before the motor has got excessively hot. The trouble has only developed since a new bronze wheel has been put in.—Yours truly,

"ASTER."

ELECTRICAL DRAWBACKS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Motorists, I fear, have too readily plumped in favour of electric ignition for due consideration to have been given to other modes. The result is that in the great majority of mishaps the ignition is the source of trouble. Generally speaking, electricity is quite a mystery to the novice motorist, and from the way the installation is placed on many cars there is reason to suspect that not a few motor builders are almost equally ignorant on this subject. Mystery and uncertainty beset the novice on every hand. Firstly, he gets a box of mysteries called a battery. He has a dim notion that a certain amount of electricity can be obtained from it, provided there have been no leaks, etc. He finds it very difficult to determine at any time how much energy remains in the cells, for even if he has volt and ampere meters he seldom understands what information they really convey. A great tangle of wires has next to be observed. The system leads to switches, terminals; the coil—which is utterly mysterious to him; to the sparking plug; and finally to that monstrous tormentor, the contact breaker. Was ever such a plaguey conspiracy set against man's peace of mind!

The spirit of the contact breaker is one of utter devilry. There is encouragement for oil to creep on the trembler, and in muddy weather damp or grit. The apparatus, indeed, finds itself in just the position to be well splashed by the road wheels. And what a little drop of oil or mud or water will cause the engine to be poorly sparked! And what a lot of encouragement is given to the coquettish spark to wander off on short circuits! The wonder is that it ever works properly. Delicate adjustment of the working parts, proper attention to the battery or accumulator and sparking plug, and occasional inspection of wires and terminals are the best ways to secure efficient electric service. And to obtain this a man must know his subject a little.

The acquirement of such knowledge will entail some time and trouble, and till it has been secured the motorist runs constant risk of being stranded on the roadside. Herein is the first cost of electricity. Another, and one more easily measured—for it is reckoned in hard cash—is the charge for battery renewal. Isolated, it looks monstrous. A battery is reckoned to cost from 1-10d. to 1d. per mile. Usually the expenditure is nearer to the latter figure than the former, especially when dry batteries are used instead of accumulators. Now, it can be taken that the cost of petrol per mile is under 1d. for a voiturette. So that the upkeep of the ignition device costs about half as much as the motive power driving the engine! The relative proportion of the two costs seems out of all reason; and certainly it looks as if the advantages of electricity (even were it absolutely reliable) are bought at a very high figure. There is a great field for economy; and time alone will tell whether it will be effected by dynamos, or by the introduction of some improved form of tube ignition.—Yours truly,

A TROUBLED MOTORIST.

MR. R. DENNIS, of Messrs. Dennis Brothers, writes:—"With reference to the paragraph in your issue of the 13th inst. re the Brighton motor race at Preston Park on Easter Monday, I wish to make a correction. Although the machine I rode—a Speed King tricycle, fitted with 2½ h.p. engine, spray carburettor, and friction clutch—had 1,000 yards start from the higher power motors, I actually gained about half a lap on the scratch machine, and won by two and a-half laps, not half a lap, as stated."

THE new Board of Directors of the Daimler Motor Company, Limited, consists of Sir Edward Jenkinson, Mr. T. Bailey, M.P., Captain Longridge, Mr. J. H. Mace, and Mr. J. S. Critchley.

HERE AND THERE.

THE first appearance of a motor-car in Tuam the other day occasioned great excitement among the "natives."

WE are asked to state that the sole agents for the Werner motor-bicycle in this country are the Motor Manufacturing Company, Ltd.

WE understand that the Premier Cycle Company, Limited, of Coventry, who have been experimenting with motor-cars for some time, have decided not to proceed with their construction.

MR. W. K. VANDERBILT, jun., the well-known American *chauffeur*, has been elected a life member of the French Automobile Club.

AT a meeting of the Southwick Urban Council mention was made of the excessive speed at which motor-cars were alleged to pass through the town. It was resolved to communicate with the police with a view to "securing the safety of the public."

MR. H. Austin, of the Wolseley Company, will read a paper on "The Transmission Gear of a Motor-Carriage," at a meeting of the Cycle Engineers' Institute, to be held on Thursday, 9th May (during the Automobile Club Show), at the Agricultural Hall.

THE Douglas Clock Company, Hanley Street, Birmingham, a well-known firm of carriage clock manufacturers, are now devoting special attention in this direction to the requirements of motor-cars. There is no doubt that a time-piece placed in a suitable position on a well-appointed car is of great convenience to a driver whose hands are not always at liberty to dive into a watch pocket.

LAST Monday the staid life of the City was rudely disturbed by the tooting of a horn and a motor-car, owned by the proprietors of the *Sun* and bedecked with two small yellow flags, winding its way through the traffic. In the afternoon, however, the career of the gay car received a check. As it was bowling merrily along through Hyde Park, a police inspector espied the outrageous flags and requested the occupants to quit the park and proceed by the ordinary roads.

As Mr. Milton Nicholls, of Harrogate, and a friend were driving in a Daimler motor-car down the declivity known as Birdlip Hill, in Gloucestershire, on Wednesday, the vehicle got beyond control, and rushing onwards at a terrific pace, ultimately overturned. Mr. Nicholls was badly hurt, but his friend escaped with severe bruises, and the driver got off scot-free. The car was smashed. The hill is doubly marked as dangerous by the C.T.C. boards, and has been the scene of many cycle accidents.

KING VICTOR EMMANUEL III. has succumbed to the charms of motoring, and before long he will be the possessor of a car. For some time His Majesty stood trembling on the brink, but meeting Prince Strozzi of Florence in his motor-car as he was about to return to Rome after a week's shooting at his favourite hunting-lodge of Castelporziano, he decided to take a short run. Before long, however, he found himself winding his way through the narrow streets of the capital unrecognised by anyone, and when he arrived in the court-yard of the Palace the appearance of the King on a motor-car occasioned great surprise. The King was quite delighted with his experience, and the Italian motor-car manufacturers are jubilant over the conversion of His Majesty.

MR. HARVEY DU CROS, Chairman of the Dunlop Pneumatic Tyre Company, has informed Mr. Roger W. Wallace, K.C., that he and his company are extremely anxious to do all they can to secure that members of the Automobile Club racing in the Gordon-Bennett race shall be supplied with thoroughly efficient tyres. In Mr. Du Cros's opinion, however, the Dunlop Company were not given sufficient notice of these tyres being required, and he considers it against the best business interests of the company that they should consent to provide tyres under these circumstances. In view, however, of the importance of the event he is willing to sink the interests of the company in favour of the sport. Mr. Du Cros also stated that he was using every effort to place satisfactory tyres for heavy vehicles on the market.

THE Automobile Club is taking steps to compile a list of all persons in the United Kingdom who own motor vehicles.

MESSRS. PETO AND RADFORD, LTD., of 57B, Hatton Garden, London E.C., have issued a new price list of their accumulators for motor-cars.

THE Irish Automobile Club held its first run for the season on Saturday last, seven motor-cars starting from the Shelbourne Hotel, Dublin, for Bray.

THE annual motor-cycle races held under the auspices of the Automobile Club will take place at the Crystal Palace on 17th July from 5 p.m. to 8 p.m.

AT the last meeting of the Watch Committee of the Newcastle Corporation, applications were made and granted to run five motor-cars in the city.

MR. E. SHRAPNELL SMITH, the hon. secretary of the Liverpool Self-Propelled Traffic Association, has recently acquired an Ariel motor quadricycle fitted with the two speed gear.

MR. J. BAKEWELL WARRILOW, of Factory Lane, Chippenham, Wilts, is catering for the wants of motorists by keeping a stock of petrol, lubricating oil, etc. He is also able to carry out any necessary repairs.

MESSRS. HOARE AND SONS, American tailors, of Central House, 251-4, High Holborn, W.C., have sent us an ingenious calendar. Among their specialities we notice "Aquatista" overcoat, which is both waterproof and watertight.

MOTORISTS in the Sheffield district will be glad to learn that Messrs. Haigh and Company, of the Central Electrical Works, West Street, Sheffield, are now keeping a stock of petrol. They are also well equipped to undertake motor repairs, charging of accumulators, etc.

MAJOR-GENERAL MONTGOMERY has informed the secretary of the Automobile Club that he has arranged that petrol may be obtained on Sundays at Winchester by motorists calling at Mr. F. V. Rumsey's private address, 41, Tower-street, about two minutes' walk from the George Hotel.

A MOTOR-CAR is now being used to convey the mails from Woking Post Office to Chobham and West End. So far the experiment has given entire satisfaction. The motor-car, which is a "Star," belonging to Mr. J. Colman, of the Broadway, Woking, makes two trips each day, covering a distance of twenty-five miles.

WE announced some time ago that the International Motor Car Co., Limited, had decided to remove into larger premises. The removal has now taken place, the company being now installed at 76, High Street, Marylebone Road, W. (near Baker Street Station). The new show rooms are of large size and comprise a special repair and storage department, as well as one devoted entirely to second-hand cars of various makes. An extensive accessory department is also being organised.

THE Right Hon. the Earl of Shrewsbury and Talbot drove from Ingestre Hall to London a few days ago on his new 12 h.p. Panhard and Levassor car, which he purchased from the British Automobile Commercial Syndicate, Limited. The car was fitted with a set of the new Talbot tires, in which his lordship is interested, and which the above-named concern will put upon the market in this country. His lordship covered the distance at an average speed of twenty-five miles per hour, and it therefore speaks well for the tires that they so successfully accomplished their work, they being practically without a scratch.

AT the South-Western Police Court, last week, Tom Brantford, jobmaster, of Balham, was summoned for assaulting G. H. Bryant, driver of one of the motor-buses belonging to the South-Western Motor Car Company, which ply across Wandsworth Common. The complainant said he was driving his bus along Trinity-road on the 9th inst., when the defendant met him in a trap. The defendant deliberately drove over towards him, and he had to stop the bus to prevent a collision. Defendant got as near as he could, and then struck him across the face with his whip, immediately galloping away laughing. Unfortunately there was no witness to corroborate the complainant's evidence, and the magistrate dismissed the summons.

SPECIAL HILL-CLIMBING AND CONSUMPTION TRIALS



As mentioned in our last issue, an important trial is to be held by the Automobile Club on Thursday next, May 2, principally with the object of giving makers and agents an opportunity of subjecting their vehicles to official trial before they are exhibited at the Agricultural Hall, and in order that the vehicles may have attached to them at the Exhibition official certificates of their performances.

The vehicles entered for the trial will have an opportunity of endeavouring to make two non-stop runs of about thirty miles each, in connection with which the consumption of fuel will be measured, and also of proving their hill-climbing efficiency, and the consumption of fuel during a hill-ascent amounting to four miles in all.

PROGRAMME.

8.30 a.m.—Arrive at Norland Mews, Princes Road, Holland Park Avenue. Fuel tanks to be completely emptied. Fuel to be measured into tanks by official observers under the supervision of members of the Technical Committee.

9.0 a.m.—Vehicle to be weighed at Shepherd's Bush Railway Goods Yard—(a) With full complement of passengers; (b) Without passengers.

9.15 a.m.—Start for a Non-Stop run of 31 miles, viz.: by Ealing, Southall, Uxbridge, Beaconsfield, High Wycombe, to the thirty-third mile-stone at the foot of Dashwood Hill.

12 o'clock.—On arrival at thirty-third mile-stone, contents of fuel tanks to be drained into measures by official observers under supervision of members of the Technical Committee. The consumption over a run of 31 miles will thus be ascertained.

12.30 p.m.—Fuel to be measured into tanks by official observers.

12.45 p.m.—Ascend steep portion of Dashwood Hill [a measured distance of 1,173 yards]. Time to be taken by official observer on the car. At the top, engine may be stopped. The descent to be made by gravity; the car to be turned at the bottom, engine to be restarted, and the ascent to be repeated. When the ascent and descent have been made six times, fuel to be drained from fuel tanks into measures. The consumption over a run uphill of 4 miles, representing a total ascent of 1,300 feet, will thus be ascertained, and the average speed will be arrived at by taking a mean of the time-records of the six ascents.

3 p.m.—Fuel to be measured into fuel tanks by the official observer, and start for Non-Stop run to Norland Mews, 31 miles.

5.45 p.m.—On arrival at Norland Mews fuel to be drained from tanks into measures. The consumption over a run of 31 miles will thus be ascertained, and a mean will be taken between the consumption on the outward run and consumption on the homeward run in order to arrive at consumption over an average road. The consumption of a vehicle will not be measured if it arrives at Dashwood Hill on the outward journey later than four hours after its departure from Shepherd's Bush, or on the return journey at Norland Mews later than four hours after its departure from Dashwood Hill.

Fuel tanks.—No vehicle will be admitted to the Trial unless its fuel tank be fitted with a tap or other arrangement at the lowest point of the tank by which the contents of the tank may be entirely drawn off in reasonable time.

Passengers.—A seat must be placed at the disposal of the Committee for the carrying of an observer on each vehicle. Vehicles having no seat in addition to that of the driver will, therefore, not be eligible for this competition. Drivers of vehicles must see that all seats in their vehicles, except that reserved for the observer, are occupied by passengers having an average weight of not less than 10½ stone each.

Stoppages, duration and cause.—Stoppages, if any, and the causes and duration thereof, will be duly noted by the observers, and will be published in the result of the trial.

Passing.—The passing of one competing vehicle by another whilst both are descending gradients or within towns or villages is prohibited, and the vehicle of any driver who may break this regulation may be disqualified. The usual regulation as regards speed in towns, villages, etc., will be in force.

Speed.—In order to prevent excess in speeds, vehicles will not be permitted to pass certain points before the expiration of a certain period from the time of starting plus the total time occupied by stops, from all causes, since the start. If a vehicle arrive before time at one of these points and has to wait for the expiration of the period, the stop will be counted an involuntary stop, and will thus be recorded on the certificate. Detours to avoid arriving before time at a point will be accounted as stops. No speed in excess of the legal limit will be recorded or recognised. If on examination of observers' time records it be found that a vehicle has been driven at excessive speed, the vehicle will be disqualified.

Observers on cars will be charged not only with seeing that fuel tanks are not replenished during the run, but also with taking notes of the times of arrival at various points. Vehicles will be disqualified if they are driven fast through traffic or towns. The speed in High Wycombe should be very slow, and also through West Wycombe. Speed must also be slow in Ealing, Southall, Uxbridge, Beaconsfield, and other towns or villages.

Fuel.—Vehicles should carry with them—(a) At the outset, at least sufficient fuel in their tanks for a run of 31 miles; (b) in spare cans, sufficient for 4 miles up-hill (average gradient 1 in 15); and (c) in spare cans, sufficient for the return run of 31 miles. There will be no spare fuel at Dashwood Hill.

THE MOTOR-CAR TRIALS AT GLASGOW.



The following are the recommendations made by the Glasgow Trials Sub-Committee, which are to be placed before the Committee of the Automobile Club at its next meeting. In the meantime manufacturers or members who have suggestions to make are invited to send them without delay to the Club Secretary for submission to the Committee.

Number of Days.—Five, viz., Monday, 2nd, to Friday, 6th, of September.

Average Distance per Day.—90 to 110 miles, to end daily at the Glasgow Exhibition, giving as far as possible a total of 500 miles.

There should be a Trial Run every day. Vehicles to be in Glasgow at the place appointed on Friday morning, 30th August, at 10 a.m.

Daily Time of Start.—8 a.m.

Speed Rules.—In order to prevent excess in speeds vehicles will not be permitted to pass certain points before the expiration of a certain period from the time of starting, plus the total time occupied by stops, from all causes, since the start. If a vehicle arrives before time at one of these points and has to wait for the expiration of the period, the stop will be counted an involuntary stop, and marks deducted accordingly from the possible maximum of marks. Detours to avoid arriving at a point before time will be accounted as stops. No speed in excess of the legal limit will be recorded or recognised. Endeavours will be made to persuade the Secretary for Scotland to raise the limit from 10 to 14 miles per hour.

System of Marking.—There will be a maximum number of marks for each day's run, say 300, and one mark will be deducted for every minute during which the vehicle is at rest from the time of starting to the conclusion of the run except for—(a) Compulsory stop (if any) for luncheon; (b) Traffic; (c) Tyre trouble. There will also be deducted, in addition, one mark for every minute in excess of the official maximum time for the run, the marks for stops having first been deducted. The official maximum time will be the time which would be occupied by a vehicle in traversing the trial route at the maximum legal speed plus the extra time occupied in controls and dangerous zones.

Awards.—There will be no prize fund and no cash prizes. In the Manufacturers' and Agents' Section first prize and second prize medals will be given in each class. Certificates will only be given in respect of vehicles which have made an average of not less than 8 m.p.h. on the total Trials, after deducting loss of time by control limits and tyre troubles.

The awards will be made by a Judges' Committee, which will, in making their awards, take into consideration the marks gained, the design and workmanship, general performances, condition (at end of Trials), seating capacity in comparison with price of the vehicles, and the reports as to the observance of rules by the drivers. In the Private Owners' Section no competitive awards will be made, but commemorative medals will be given in respect of vehicles which successfully complete the Trial.

Display of Vehicles at the Glasgow Exhibition.—It is proposed to exhibit the vehicles daily at the Glasgow Exhibition.

Hill-Climbing Trials.—The Trials will comprise certain hills on which records will be taken of the time taken by the various vehicles in making the ascents. These records will be published, but no speed in excess of the legal limit will be recorded or recognised.

Delivery Vans and Heavy Motor Vehicles.—Provided that six vehicles are entered there will be a special class for delivery vans and motor vehicles designed for heavy loads, of a tare of not more than three tons. These vehicles will run under observation, over courses of from 20 to 50 miles per day.

A seat must be placed at the disposal of the Committee for an observer on each vehicle.

Tyres.—The tyres on a vehicle may, subject to the approval of the owner of the vehicle, be entered for trial by the makers of the tyres for the Trial. The system of marking will be the deduction of one mark from the maximum number of marks for every minute's delay on the roads owing to tyre trouble. The condition of the tyres will be daily noted and recorded by the official observers. Tyres can only be entered for competition if they are fixed to vehicles in Section I., viz., motor vehicles entered by manufacturers or agents. A vehicle may be specially entered under Section III. (tyres and other parts) with a view to testing tyres, not the vehicle.

Other Regulations.—Generally speaking, other regulations will be similar to those which controlled the 1,000 Miles Trial of 1900.

Electrical Vehicles.—In the event of makers of vehicles propelled by electricity expressing their willingness to enter vehicles to run over suitable distances during the course of the above trials, inquiries will be made and further particulars will be published.

The Scottish Automobile Club is taking an active part in the organisation of the English Trials at Glasgow. The Scottish Club have promised to make the necessary arrangements with the authorities of the Glasgow Exhibition, to bring the matter before the Government authorities, to fix upon suitable routes, to assist in finding observers, in marking the routes, and in finding hotel accommodation, etc.

MOTOR-CAR OBSTRUCTION.



SIDNEY PARSONS, a motor-car driver, pleaded not guilty at the Bournemouth Borough police court to obstructing the free passage of the Old Christchurch Road on the 4th of April. P.C. Hastings said he saw

the defendant drive up to the entrance of the Town Hall Avenue with his motor-car behind a 'bus which had drawn up. He took up a passenger, and he told him to go on. He pulled out in the middle of the road, but refused to go on until the 'bus had gone on. There were five other vehicles behind, and there was a great deal of traffic in the road at the time. When he moved into the middle of the road, the motor-car timekeeper told him not to go on. The defendant said that he could not go on owing to the amount of traffic in the road at the time. There was the 'bus in front of the car, and a 'bus on the other side of the road, and so he could not move out for fear of a collision or an accident with one of the vehicles, as there was not room between the 'buses on the opposite side of the road for his car and the vehicle passing up and down the road to pass. He called the motor-car timekeeper and inspector, Mr. Frescoe, who said he was at the entrance of the Town Hall Avenue at the time the defendant came up behind the 'bus, which had drawn up, and was standing in front of the Town Hall Avenue. He (the defendant) no sooner drew up than the constable told him to go on. He told the defendant not to go on as he thought there was great danger of an accident occurring if he did. The 'bus in front of the car had stopped for two or three minutes, although he did not think there were any passengers getting on or off it. In reply to Superintendent Foster, witness said he did not interfere with the constable doing his duty. It was always his wish to help the police, and not do the other thing.—The Bench imposed a fine of 2s., and 2s. costs.

MOTORIST EXONERATED.

AN inquest was held recently at Hasland, Derbyshire, on the body of John Tomlinson, of Wadshelf, who was crushed to death by the wheels of a cart he was driving passing over him. At the time the accident occurred a motor-tricycle passed by, and it is alleged frightened the horse. In trying to stop the animal Tomlinson was drawn under the cart and killed. In giving evidence, John Thomas Dring, of Hasland, said he was trying the motor-tricycle belonging to Mr. Atkinson, after having repaired it, and he started about forty yards before he met the deceased. He saw the deceased before he started; he was walking on the footpath, his horse and dray being at the opposite side of the road. When he saw witness deceased started towards his dray, and witness passed him. Witness did not, as alleged, pass between the man and the dray. When he passed the horse it was going very quietly. He did not remember blowing the horn in passing, but he did so just after passing. He did not hear of any accident until about two hours afterwards. The motor was going at the rate of four or five miles an hour. The coroner, in summing up, said there was no blame to be attached to anyone. He thought that the horn and car might have startled the horse, yet there was the possibility of something else having done so. If deceased had been nearer his horse he might have checked it. A verdict of "Accidental death" was returned.

BARON v. THE THORNYCROFT STEAM WAGON COMPANY'S CLAIM.

MR. JUSTICE BRUCE and a special jury had before them on Monday an action in which Mr. Francis Edward Baron, consulting engineer, Manchester, sued the Thornycroft Steam Wagon Company, Limited, to recover damages for alleged breach of an agency agreement, which the defendants said they were entitled to put an end to in consequence of the plaintiff's conduct. The plaintiff's case was that in February, 1899, he was connected with the Motor Haulage Company, of Bolton, whose object was to supply motor-wagons for carrying goods traffic on roads. It appeared that plaintiff learned that Messrs. King and Co., calico printers, of Hollington, were anxious to adopt motor-cars to convey their goods to Manchester, and as the Motor Haulage Company could not undertake the work he obtained tenders from defendants, which were accepted. Subsequently he was appointed their agent, undertaking to get them orders for motor-cars each year. The defendants, however, failed to supply the cars they had contracted for, and put an end to the agreement.

The hearing was continued on Tuesday. The plaintiff claimed damages for breach of an agreement under which he was to receive 7½ per cent. commission on sales of the defendant company's motor wagons. The jury found for the plaintiff, damages £340, and judgment was entered for that amount, with costs.

FURIOUS DRIVING CASES.

AT the Bournemouth Borough Police Court, William Penton, a motor-car driver, pleaded not guilty to driving his car at a furious rate in the Poole Road on April 4th. P.C. Davis said he was standing near the Royal Victoria Hospital when the car passed him. It was being driven at the rate of about fourteen miles an hour. He saw the car about two hundred yards before it passed him, and saw it go down the road over the Poole Hill. He hailed the driver as he passed. He took no notice, but he did not know whether he saw him or not. It was a public car, with one or two passengers in it. The traffic was thick, several cabs coming from the West Station down the Queen's Road at the time. In reply to Mr. C. R. Hutchings, who appeared for the defendant, the constable said he judged the speed on his experience as a cyclist. The defendant went into the box, and said he had been a motor-car driver for three and a half years, and had been in his present employ for eight

months. He had never been summoned before for going too fast. On the occasion in question, he was going at the rate of about ten miles an hour. The high speed of the car, when the engines were running at full, was twelve miles an hour. Mr. Hutchings said the Canford Cliffs Motor 'Bus Company, whom he represented, had been running for a considerable time in the town, and there had never been an accident with one of their motor-cars. He submitted that there had been no evidence to show that the speed at which the car in question was being driven was a speed that was dangerous to the public, and he asked, on that ground, that the case should be dismissed. The Bench convicted, and fined the defendant, against whom there had been no previous conviction, 1s. and 8s. costs.

AT the Chertsey Petty Sessions, Harry R. Parton, engineer, 27, Essenden-road, Paddington, was summoned for using a light locomotive to draw another vehicle, which did not bear his name and address or place of business; and further, with driving at a greater speed than six miles an hour, at Weybridge, on April 7th. The defendant pleaded not guilty. Inspector Marks stated that he saw the defendant driving a motor-tricycle at ten or twelve miles an hour. A two-wheeled car was attached to the tricycle. There was no name or address on the car. The defendant said he had to pay a full license for the tricycle and car as one vehicle. In reply to the Bench, the defendant said he bought the car and attached it to the tricycle. Fined £1 in each case.

AT the Greenwich Police Court on Tuesday, Frederick Rowe, of Shooter's Hill, was summoned for furiously driving a motor-cycle. Police-constable 44 RR. said he saw the defendant on April 5th driving at the rate of fifteen or sixteen miles an hour. He timed the defendant, and found that he covered a quarter mile up hill in less than a minute. He stopped when the witness held up his hand. The defendant said the speed suggested was impossible considering the traffic. Mr. d'Eyncourt said it was very dangerous to run motor-cycles at this rate. There should, he thought, be some way of identifying motor-cars, by number or otherwise. He fined the defendant 30s. and 2s. costs.

By a decision of the Nice Automobile Club, there will be no special section for steam or electric cars in the Nice La Turbie course and mile race at Nice next year.

THE committee of the French Automobile Club has decided not to reopen the club's summer quarters in the Bois de Boulogne, and the property, consisting of two villas, standing in their fine grounds, are now to let.

THE Daimler Motor Company, Ltd., sued the Newport Pagnell Motor Company, last week, for £5 18s. 6d., for a set of spokes for the wheels of a motor-car. The defence was that the charge was an exorbitant one, and that the thirty-two spokes were only worth 1s. 6d. each. The spokes had been returned. The Judge observed that the company should not have done that. There would be judgment for the plaintiff company for £4 16s.

THE Caledonian Motor-Car and Cycle Company, Ltd., 265, Union Street, Aberdeen, inform us that the statement that they have been appointed sole agents for Scotland for Messrs. Panhard and Levassor, of Paris, is not correct. The facts are that they have been appointed by the Société des Automobiles Peugeot, of Paris, their sole agents for the whole of Scotland for the Peugeot motor-vehicles, motors, and frames. The Caledonian Company have a large establishment in Aberdeen, comprising workshops, inspection pit, storage accommodation, and have every facility for repairing motor-cars of any make, storing, and cleaning same. They also keep motor spirit in stock, and can recharge accumulators, etc.

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COMMENTS.



THE Right Honourable Sir J. H. A. Macdonald (Lord Justice Clerk of Scotland) has written us on the subject of horse-drawn vehicles at large on the highway. The Lord Justice Clerk states that recently he travelled from London to Grantham by motor-car, and that on the way he passed seventy-one vehicles with horses, no one being in charge, at least twenty of the cases being at the doors of public-houses. Two drivers were so fast asleep that the loudest tooting only woke them when the car was close behind. In conclusion the Lord Justice Clerk asks: "Is it for the protection of such breakers of the law that new laws are to be made to place motorists in an invidious position to which the owners of horse-driven vehicles are not subjected?"

Demonstration at Gloucester.

ON the initiation of the Automobile Club, a motor-car demonstration was held at Gloucester on Saturday last, with the object of showing the members of the Highways Committee of the Gloucestershire County Council the ease with which motor-cars can be managed. There was a good muster of cars, including Mr. Algernon Wyatt's Benz, from Cheltenham; Dr. Abbott's New Orleans, from Cheltenham; Mr. Charles D. Phillips; "Lifu" steam wagonette, from Newport; Mr. J. T. Hereford's 6 h.p. Daimler, from Hereford; Mr. Downson's De Dion voiturette; Messrs. Norton and Co's. New Orleans voiturette; the Bristol Motor Company's Daimler phaeton, from Bristol; the same company's Progress car, driven by Mr. Appleton; Mr. Morgan's Star phaeton, from Cheltenham. Dr. Fernald was present on a motor-tricycle from Cheltenham. Among the members of the Highways Committee and others who occupied seats on the cars were the Lord Justices' Clerk of Scotland, Sir John Dorington, Sir James Campbell, Mr. M. W. Colchester-Wemyss (chairman of the Council), Rev. Canon Bowers, Major Seymour-Metford, Messrs. H. O. L. Baker, J. R. Lane, W. S. Walker, E. Playne, J. S. Gibbons, W. Friday, R. N. Hooper, F. Haine, E. T. Gardem (Clerk of the Peace for Gloucestershire), Mr. Johnson, etc. Trips were made along the country roads to Huntley and Hartpury and back, where the Saturday traffic gave motorists an exceptional opportunity of displaying the ease with which motor-cars can be managed. The members of the Highway Committee expressed themselves as highly gratified with the manageability of the motor-cars.

The London County Council and Motor Fire Engines.

IN our issue of last week we referred to the movement on the part of the Metropolitan Fire Brigade for the introduction of motor fire engines. Commander Wells has subsequently come to the conclusion that the best system will be that of steam and liquid fuel, and his idea is to obtain a vehicle which not only could be usefully employed by the third officer

and the officers of the inspection branch, but which would also afford an opportunity of teaching a good many firemen the mode of manipulating motor vehicles. At a meeting of the London County Council, held last Tuesday, on the recommendation of the Fire Brigade Committee, it was decided to purchase from the Locomobile Company of America a motor-car at a cost of £286 for use by the Fire Brigade. Mr. Beachcroft objected to the Council going to America to purchase a car when any number could be obtained in this country. Mr. Gilbert, Chairman of the committee, said that the chief officer, who was an expert on this subject, had recommended that particular type of car.

Motor-Cars for Municipal Purposes.

MR. JOHN MORLEY, the Borough Engineer of West Ham, in reporting on the reorganisation of the Highway Department of the borough, makes some interesting observations on the employment of motor-cars for public purposes. He sets out the advantages of this form of traction as follows:—Heavier loads can be taken at practically twice the speed, and therefore in half the time occupied on the journey by horses. There is practically no limit as to the time they can remain at work, except that it would be necessary to work them by shifts. They can be obtained with interchangeable parts, so as to be available either for carrying road sweepings or for street watering, as occasion may require. The expense of erecting buildings for storage would not be so great as providing stables for horses, as sheds only would be required, and, again, as they do more work so many would not be necessary and the space would be further minimised. On the other hand, Mr. Morley points out the first cost is considerable, and the repayment charge would have to be met, and to obtain good results it would be necessary to keep them at work for as long periods as possible. There is no doubt, he adds, that, as the district develops still more, it will be necessary to travel further afield for shoots, especially for the deposit of house refuse, in which case the advantage derived from the extra-speed of the motor will be more appreciated.

Public Opinion.

THE prominence of motor-cars at Epsom last week gives the *Daily Telegraph* occasion for a leader in which, after a regretful tribute to the æsthetic advantages of the horse, a timely attack is made on the evil done by our short-sighted legislation in obstructing progress and on the absurdity of the present speed restrictions, particularly with reference to the baneful effect they will have, if enforced, on the important trials to be held at Glasgow. It is still more encouraging to see a friendly attitude manifested toward motor-racing, which is characterised "as much more exciting to the taste of democracy" than horse-racing "as football is compared with cricket," and it is to be feared that this will prove a more potent aid to its introduction than its manifest necessity for "improving the breed" of the automobiles. Mr. Mayhew's description of the way in which the necessities of speed have acted in

THE GENERAL AUTOMOBILE AGENCY, D. Farman, Man., Carage open day and night, all cars in stock, 100-104, Long Acre, W.C.

evolving brakes of a power unknown in this country is significant, as bringing out a weak point in many of our home productions, and one which legislation would do far better to direct its attention to, if it must be occupied with something, than to childish numbering schemes.

Competitions.

IN default of races, however, we content ourselves with "competitions," which might be equally effective in stimulating improvement were it not for the power of sentiment. In other words, the maker will do all in his power to "get there first," while he will not exert himself to make his car approach certain tabulated figures, though these may be the measure of equally marked improvements. "Improvements," however, apart from speed, are somewhat difficult to gauge; the average driver is not so particular about economy of running and efficiency of transmission as about freedom from all the little derangements that are of much more practical importance to him than a pint or two of petrol, and is perhaps inclined to undervalue the importance of researches to this end. The most noticeable result of the recent consumption trials at Richmond was perhaps the very slight difference in consumption between the cars of very varying size, or otherwise the superior economy of larger engines. This week's trials are almost unique in their severity from the hill-climbing point of view, though the unavoidable descent between each of the six ascents of Dashwood Hill will not give that test of cooling efficiency that a four-mile climb otherwise would, and the ardent members of the Technical Committee perhaps sigh for a hill like the Irishman's steep staircase, of which he complained that "for once he came down it he had to go up half a dozen times."

Yorkshire Automobile Club.

THE members of the Yorkshire Automobile Club held the third run of the season last Sunday, when a visit was paid to Harrogate and Ripon *via* Bradford and Otley. The start was made from Leeds City Square promptly at nine o'clock. At the main entrance to Manningham Park, Bradford, the party was joined by the Bradford contingent and a quick run was made to Harrogate, where lunch was partaken of at the Victoria Hotel. From Harrogate the party proceeded to Ripon, and after a short stay the return journey was commenced at 3.30 p.m., Leeds being reached in good time. The run was regarded as one of the most successful that has yet been held.

County Councils and Motor-Cars.

THE Berks County Council are making strenuous efforts to gain the support of other councils with regard to the numbering and registering of motor-cars and making the pace ten miles an hour. The proposals of the Berks County Council came before the Lindsey County Council the other day, when the resolution of the Highways Committee, viz., that they do not at present deem it necessary to make any recommendations respecting the matter, was carried without discussion or dissent. Mr. C. Johnson, secretary of the Automobile Club, as representing that body and the Lincolnshire Automobile Club, attended the meeting of the Committee as a deputation, and explained how unnecessary and harmful the proposals were. He showed how beneficial motor-cars would be to an agricultural county like Lincolnshire, and advanced other good arguments.

Reckless Driving in Bradford.

THE Bradford papers during the past few days have been full of angry letters protesting against the reckless driving of a motor-car through Manningham Lane. At first we regarded the protests as the outcome of a biased public, but since we have been informed on reliable authority that the life and limb of pedestrians have been seriously endangered. Even the most

ardent local devotees of motoring have entered their protests, pointing out that by careful driving in busy thoroughfares they were trying to lessen the prejudices of the Bradford public against the motor-car. We can only hope that the delinquent in this case will soon be unearthed, and that then he will meet with the full penalties he so richly deserves at the hands of justice.

The Motorist Wins.

AN Essex correspondent writes us with regard to an amusing incident which occurred on the road the other day. As he was out driving with his wife in a voiturette, on rounding a corner on the up grade, he suddenly came on a wagonette drawn by two horses and containing two ladies—of course on the wrong side of the road. Seeing that the coachman did not intend to pull over to the right side of the road the motorist stopped, with the horses about ten yards ahead. The coachman also pulled up—still on the wrong side of the road—and the two drivers sat motionless and looking helplessly at each other. Suddenly the coachman in a gruff voice said to the motorist, "Now, what are you going to do?" The motorist replied, "Smoke till you clear the road." Two or three minutes sped by without a remark from either, when the coachman with rising anger broke out again: "Now, then, what are you doing?" Motorist: "Smoking, and enjoying the scenery." This, however, was too much for the fair occupants of the wagonette, who were highly amused, and suggested to the irate Jehu to pull over to the right side of the road. This the driver did with little grace and less speed, and the motorist sped off and was soon out of sight.

The Nottingham Automobile Club.

THE last meeting of the session in connection with the Nottingham Automobile Club was held on Wednesday in last week, and took the form of an informal dinner, at which the Lord Justice Clerk of Scotland (the Right Hon. Sir J. H. A. MacDonald) and Mr. Claude Johnson, secretary of the Automobile Club of Great Britain and Ireland, were the guests of the evening. Mr. E. W. Wells (vice-president) occupied the chair. The primary object of the gathering was to hear an address from Mr. Johnson bearing upon the proposed schemes of affiliation with the Automobile Club of Great Britain and the formation of a Motor Union. Mr. Johnson gave a short sketch of the Club's inception and development. Originally it was organised on social lines, but it had been found necessary to take up the work of advancing the interests of automobilism, and instances were given of the efforts which had been put forward in the hope of influencing the governing authorities to facilitate the advance of the movement. Already much had been done in respect of the County Councils to overcome prejudice in relation to the ridiculous speed restrictions which had been enforced, but Mr. Johnson declared that the fight had only just begun, and in order that they should be prepared for the struggle it was imperative that they should take combined action. Mr. Johnson explained the scheme which had been proposed, and emphasised the necessity for concerted action. The Lord Justice Clerk of Scotland spoke of the importance of establishing a *bon camaraderie* among automobilists, and declared that if only the County Councillors and farmers, and residents in the rural districts could exercise a little foresight they would see perfectly well the enormous advantage which automobilism was going to confer upon districts which were not served by the railways. Indeed the time was coming when the railways themselves would start services of motor-cars to act as feeders to their own undertakings. Within the next twenty years automobilism would be found to be a vast source of national wealth. Upon the proposition of Mr. Wells, the meeting decided unanimously to adopt the affiliation scheme. Mr. A. Atkey, hon. sec. of the Nottingham Club, proposed the health of "The Visitors," which was cordially acknowledged by the Lord Justice Clerk of Scotland and by Mr. Johnson.

The Correct View.

"THERE is not the slightest doubt," says *Country Life*, "that those of us who drive about in the country and complain that our horses are frightened by the motor-cars have ourselves, in very large measure, to thank for our horses' and perhaps our own, fright. None of us are so far removed from the home of a motor-car that we cannot send our horses over to have a feed of corn beside it, and so grow accustomed to the strange thing; and no owner of a motor-car is so churlish that he would not give permission for horses to go to his stables and receive this lesson. If we had but the energy to see that this was done once or twice, our horses would soon grow used to the motors." It is with the greatest pleasure that we find our contemporary advocating and acknowledging principles which we have always supported in these columns.

Motor-Cars in West Africa.

LATEST advices from West Africa indicate that the use of motor-cars is being seriously discussed as a means of transport for a large part of the Gold Coast mining companies. A railway is in course of completion from the coast to Kumassi, but it is far from practicable that offshoots of the railway can be constructed owing to the nature of the ground. Therefore roads are being constructed with the view of running motor cars as "feeders" to the railway. In this way not only will native carriers be done away with, but the capacity of transport will be greatly increased. In certain quarters of West Africa the motor-car service has been tested, with the most favourable results.

An Engineer's Testimony.

IN connection with this matter the following extract, taken from the official report of the Northern Territories by the late Colonel Northcott is of interest—"The recent improvements in motor-cars suggest these vehicles as a means of transport vastly superior to carriers, and as providing some at least of the advantages of railways without any of their drawbacks. Roads suitable for them can easily be constructed; and where, as in the Northern Territories, the administration has taken over the chief's power of exacting free labour, the cost of this work is very small. No ambitious bridging schemes need be thought out, for culverts can easily be made locally to bear the weight of a motor-car and its load, and the large rivers are so placed that they would naturally be taken as junctions for the car service, the goods being ferried across. The original outlay would be relatively very small, and so also would be the number of men employed in the working of the line. A fair load would be carried each trip and would perform the journey, in favourable circumstances, in one-fifth of the time at present occupied. There are now in existence in the Northern Territories over seventy miles of made road on which motor-cars could without difficulty run at good speed." If these are opinions of a responsible official perfectly acquainted with the country, there can be no doubt, considers the *Gold Coast Globe*, that the future of the motor-car in the West Coast of Africa in general, and on the Gold Coast in particular, is an exceedingly promising one.

Peccavi!

OUR remarks on the subject of motor-bicycles in our last issue have, as will be seen from the Correspondence columns, attracted some attention. Mr. Leonard, of the Motor Manufacturing Company, has also given us ocular demonstration with a Werner motor-bicycle that our contributor is wrong in his objections to the two-wheeled machine. The bicycle was without difficulty carried up two flights of stairs, laid on its side, placed by the kerb—in fact, all the objections we brought forward against motor-bicycles have been shown to be non-existent, at least in the Werner.

Activity along Holborn.

THE policeman who regulates the traffic that crosses Holborn at Southampton Row is fairly familiar with motor-vehicles, and has learned their ways to a nicety. He allows them to come close upon him before raising his hand, and realises that they can be more readily stopped than the horses with which he has to deal. But this week he has had a particularly busy time, for on Tuesday, Wednesday, and Thursday there were more automobiles up and down Holborn than in any previous ten or twelve days of the year. One policeman walking along Oxford Street confided to us that he could not account for the sudden burst of automobile activity; but that something unusual was about to take place he could quite realise, for in one hour more than twenty cars had passed him; and riding on a horse-drawn 'bus from Shoe Lane to Tottenham Court Road we counted seventeen motor-vehicles on the road—and all going well. Evidently the proximity of the Exhibition has been responsible for the presence of so many cars, agents and manufacturers having put vehicles to stern tests in order that all may be right at "Merrie Islington."



THE EASTER TOUR—WHITE HART STABLES, SALISBURY.

THE *Concours de Carburants*, organised by the French Automobile Club, commenced on Wednesday last.

THE Corporation of the City of Glasgow are asking for tenders for the construction of a motor dust van. Full particulars may be had from Mr. D. McColl, Superintendent of Cleansing, City Chambers, 64, Cochrane Street, Glasgow. Tenders must be sent in by Monday, the 13th inst.

ELEVEN cars entered for the Special Hill-Climbing and Consumption Trials, held on Thursday, with the object of giving makers and agents an opportunity of subjecting their vehicles to official trial before they were exhibited at the Agricultural Hall, and in order that the vehicles might have attached to them at the Exhibition official certificates of their performance.

ON Wednesday next, at 8 p.m., the Automobile Club will hold a dinner at the Agricultural Hall, Islington, in connection with the Exhibition, when it is probable that Sir Francis Jeune will take the chair. Members who wish to participate in the dinner may obtain tickets from Mr. Chas. Cordingley at the Exhibition, or from the Club Steward. Morning dress may be worn. Friends (gentlemen, not ladies) may be introduced.

A MARRIAGE by motor-car took place recently at Christ Church, Guildford. The bride was Miss Bird, a well-known Guildford lady, and the bridegroom Mr. Wade, a cycle and motor-car maker. The bridegroom, accompanied by his best man, drove up to the church in the motor-car, and after the ceremony the newly-wed couple started straight away from the church on the car for their honeymoon.

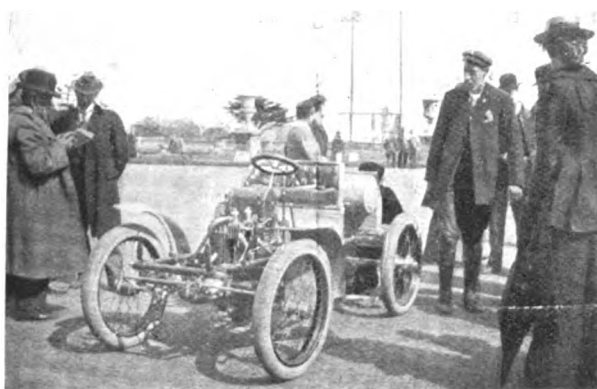
THE ENGLISH MOTOR CLUB'S CONTROL CONTESTS.

A VERY moderate assemblage of the public foregathered at the Crystal Palace on Saturday to witness the "control contests" of the English Motor Club. Had the affair been "pushed" in any way the attendance would undoubtedly have been larger, for the weather was all that could be desired. Perhaps it was just as well, however, that there was no crowd, since the avowed objects of the meeting were very far from realised, and in more senses than one the word "control" was the last that could legitimately be used in connection with the proceedings. These were announced to open at half-past two, but it was nearly an hour later when the actual start was made.

The events, moreover, were by no means calculated to display the starting and stopping powers of the competing cars.

quickness with which a car can attain speed, and yet be stopped within a short distance, and thus the car occupying the shortest time between two points will be given the prize."

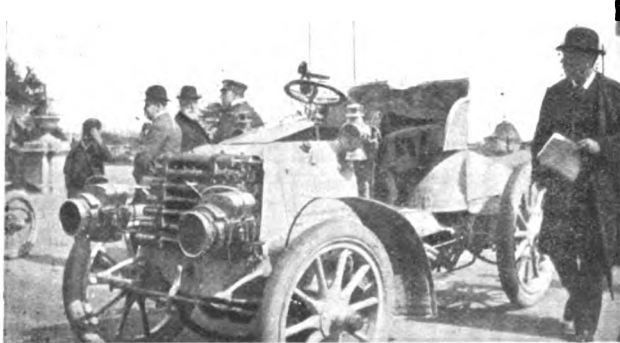
This was all admirable enough in intent, but for lack of management it fell short in execution. The only way in which the stopping and starting control was shown was at the six stations before referred to, but all save one of these were out of sight of the spectators, unless they wandered to the foot of the Palace grounds, which very few appeared to do. The only stopping and starting which nine-tenths of the beholders saw, was at the north end of the Terrace, where each competitor was detained by one of the timekeepers, Mr. Bidlake, whenever any returning car was signalled from below; otherwise two cars going in opposite directions might have met at one or other of a series of five awkward corners in quick succession. But the compulsory stops at this point were not of the prescribed thirty seconds duration, but depended upon the varying times made by



MR. T. MALTBY, JR.'S 10 H.P. DE DION SPIDER.



MR. C. JARROTT ON HIS 10 H.P. DE DION SPIDER.



MR. MARK MAYHEW'S 20 H.P. PANHARD.



MR. J. H. LEONARD AND HIS WERNER MOTOR BICYCLE.

According to the programme the *modus operandi* was as follows:— "These contests, as set out in the programme, are held with the idea of demonstrating to the public the control in starting, stopping, and steering to which an autocar is completely amenable. The course, as marked on the accompanying plan, is laid out with a view to providing a fair give-and-take road, such as is required to fairly test the skill of the driver, and the power, design, and general mechanism, of the motor-cars and cycles competing. The competing cars have to stop at each of the stations numbered on the line of route, and start again on a given signal from the control marshal within a space of 30 secs. Obviously the car which makes the best progress in between the stations, which stops quickly, and which starts again quickly, will score over one which is more speedy, but is slower in starting and stopping. The lowest aggregate time between start and finish will thus declare the winner in each case of these control contests. The last item on the programme is to show the

the ascending car, if one was signalled. Most of the spectators congregated at this spot, apparently for the sole purpose of seeing the cars swing round a double corner, so that it was merely as regards steering that they derived any real appreciation of the handling of a motor-car. Even at the finishing post, where stood nobody but Mr. Swindley, as timekeeper, and half-a-dozen others, there was no measuring of the distance within which each car stopped after its final rush, although the figures would have been most instructive.

Several of the competitors, indeed, did not even know where the finishing point was, and never reached it, or slowed down to round the very corner which they ought to have passed at top speed along the straight. At the finish of the 200 yards speed contests with which the proceedings concluded the time element was the only one considered, no account being taken of the number of yards within which the vehicles were stopped, although the programme specifically laid down the ability to stop

within a short distance as one of the features to be emphasised by the competition. In fact, if the events had been confined in the main to the long terrace, with careful measurements and tabulated results, there would have been something more impressive for the actual spectators, and more definite to report to the general public than was actually the case, for the fact that this or that car careered around the grounds, over a course which was mostly invisible, and of which no one knew the exact measurement, conveyed little or nothing in the shape of a lesson in motor-car control.

Appended is the list of entries in the various classes:—

CLASS A.—MOTOR-BICYCLES.

No.	Name.	Maker.	Horse-power.
1.	J. H. Leonard	Werner Frères	1½
2.	Motor Manf. Co.	Werner Frères	1½

CLASS B.—MOTOR-CYCLES (FREE ENGINES BARRED).

6.	J. W. Stocks	Ariel Motor Co.	3
7.	J. C. Nixon	De Dion Bouton	3½
8.	T. Maltby, junr.	De Dion Bouton	2½
9.	M. Moyle	De Dion Bouton	3½
10.	F. G. Lewin	Motor Manf. Co.	2½

CLASS C.—MOTOR CYCLES WITH FREE ENGINES.

12.	G. H. Smith	United Motor Industries	2½
13.	Hon. C. S. Rolls	De Dion Bouton	2½
14.	C. Jarrott	De Dion Bouton	2½

CLASS D.—CARS DRIVEN BY LADIES.

16.	Mrs. E. Kennard	Napier	9
17.	Mrs. Moyle	De Dion Bouton	3½
18.	Mrs. Taplin	Star Motor Co.	3½

CLASS E.—VOITURETTES UNDER 6 H.P.

21.	G. H. Smith	United Motor Industries	4½
22.	G. D. Barnes	Peugeot Frères	4
23.	Motor Manf. Co.	Motor Manf. Co.	5
24.	M. Cappellen	Sports Motor-Car Co.	5
25.	G. Taylor	Benz & Co.	3
26.	C. Jarrott	De Dion Bouton	4½
27.	R. H. Fuller	De Dion Bouton	4½
28.	A. Burgess	Motor Manf. Co.	5
29.	A. Connell	Benz & Co.	4½
30.	Motor-Car Co.	Société Decauville	5
31.	M. Moyle	De Dion Bouton	3½
32.	W. Munn	De Dion Bouton	4½
33.	F. G. Lewin	Motor Manf. Co.	5
35.	H. Sharp	Mors	5

CLASS F.—CARS OVER 6 H.P. AND UNDER 12 H.P.

36.	Hewetson, Ltd.	Benz and Co.	6
37.	S. H. Pearce	Napier	9
38.	Motor Manf. Co.	Motor Manf. Co.	6
39.	A. Burgess	Motor Manf. Co.	6
40.	E. H. Clift	Sinclair Motor-Car Works	7
41.	P. Richardson	Daimler Motor Co.	6½
42.	W. du Cros	Napier	9
43.	H. du Cros	Napier	9
44.	W. Symonds	Darracq	6

CLASS G.—CARS OVER 12 H.P.

45.	Motor Manf. Co.	Motor Manf. Co.	12
46.	R. H. Fuller	Napier	16
47.	A. Burgess	Motor Manf. Co.	12
48.	Hon. C. S. Rolls	Société Mors	24

CLASS H.—RACING CARS.

50.	C. Jarrott	De Dion Bouton	10
51.	Mark Mayhew	Panhard and Levassor	20
52.	Motor Manf. Co.	Motor Manf. Co.	12
53.	Hon. C. S. Rolls	Société Mors	24
54.	T. Maltby, junr.	De Dion Bouton	10

CLASS I.—STEAM CARS.

56.	W. N. Letts	Locomobile Co. of America	4½
57.	E. W. Stevens	Locomobile Co. of America	4½
58.	R. H. S. Abbott	Locomobile Co. of America	4½
59.	C. S. Rolls	Locomobile Co. of America	4½
60.	A. Ginder	Locomobile Co. of America	4½
61.	Mr. C. S. Rolls	Locomobile Co. of America	4½
62.	C. Rosenbaum	Century Motor Vehicle Co.	4½
63.	— Coles	Locomobile Co. of America	4½

CLASS K.—ELECTRIC CARS.

65.	Shippey Bros.	Morgan & Co.	6
66.	Shippey Bros.	Canadian Electric Vehicle Co.	4

200 YARDS SPEED CONTESTS.

68.	Motor Manf. Co.	Werner (Bicycle)	1½
69.	C. Jarrott	De Dion Bouton	10

No.	Name.	Maker.	Horse-power.
70.	J. C. Nixon	De Dion Bouton (Tricycle)	3½
71.	S. F. Edge	De Dion Bouton (Tricycle)	6
72.	C. Rosenbaum	Century Motor Vehicle Co.	4½
73.	A. W. Ginder	Locomobile Co. of America	4½
74.	R. H. S. Abbott	Locomobile Co. of America	4½
75.	Hon. C. S. Rolls	Locomobile Co. of America	4½
76.	Hon. C. S. Rolls	Société Mors	24
79.	S. H. Pearce	Napier	9
80.	— Coles	Locomobile	4½

Of these the majority were on the ground, though not all competed. The light steam cars had decidedly the best of it over a course containing numerous corners, two of which were so bad that it was almost impossible to get big racing cars like the 24 h.p. Mors of the Hon. C. S. Rolls, or the 20 h.p. Panhard of Mr. Mark Mayhew, round without going over the grass. Several competitors were disqualified for not pulling up sharply enough at the stopping places, and crossing the tape. In the way of excitement the chief item was the puncturing of one of the back tires of Mr. Jarrott's 10 h.p. De Dion Spider, with resultant swerves that were by no means comfortable to behold, as one of the tires came off and made the steering tricky in the extreme. In the 200 yards sprints fine finishes were made by Messrs. Rolls and Jarrott.

The following were the best performances in each class:—

Class A.—Mr. J. H. Leonard (Werner), 6 min. 17 sec.

Class B.—Mr. J. W. Stocks (Ariel), 8 min. 31 3-5 sec.

Class C.—Mr. C. Jarrott (De Dion), 6 min. 23 3-5 sec.

Class D.—No award. The two starters, Mrs. Kennard and Mrs. Moyle, were both disqualified.

Class E.—Mr. C. Jarrott (De Dion), 6 min. 26 sec.; Mr. R. H. Fuller (De Dion), 6 min. 37 3-5 sec.; Mr. G. D. Barnes (Peugeot), 7 min. 36 sec.; Mr. H. Sharp (Mors Petit Duc), 7 min. 46 3-5 sec.

Class F.—Mr. H. du Cros (Napier), 6 min. 27 sec.; Mr. S. H. Pearce (Napier), 6 min. 35 sec.; Mr. W. du Cros (Napier), 7 min. 5 2-5 sec.; Mr. Coles (Benz), 7 min. 45 sec.

Class G.—Hon. C. S. Rolls (Mors), 6 min. 13 sec.

Class H.—Hon. C. S. Rolls (Mors), 5 min. 51 sec.

Class I.—Mr. R. H. S. Abbott (Locomobile), 5 min. 41 sec.; Mr. W. N. Letts (Locomobile), 5 min. 59 3-5 sec.

Class K.—Shippey Bros, 9 min. 36 3-5 sec.

200 YARDS SPEED CONTESTS.

Hon. C. S. Rolls (Mors), 13 3-5 sec.; Mr. C. Jarrott (10 h.p. De Dion) 13 3-5 sec.; Mr. S. F. Edge (6 h.p. De Dion), 15 sec.; Mr. A. W. Ginder (Locomobile), 15 2-5 sec.; Mr. R. H. S. Abbott (Locomobile), 15 3-5 sec.; Mr. J. H. Leonard (Werner bicycle), 18 1-5 sec.

Mr. Mayhew also went over the course in 15 4-5 sec., and Mr. Letts in 19 1-5 sec.

The officials of the meeting were as follows:—Judges: Messrs. H. L. Clarke, L. Schlentheim and A. J. Wilson. Timekeepers: Messrs. F. F. Bidlake, A. V. Ebbelwhite and H. J. Swindley. Hon. Secretary, Mr. F. W. Baily.

A RATHER novel use for the motor-car is suggested by a Lincolnshire rector. The doom of country schools seems near at hand, and it is proposed to create educational centres to which children from outlying districts shall be conveyed by motor-car. In the morning outward journey the motor-car will carry the post, and on the return journey the children; in the evening *vice versa*. The children would be delighted.

In the competition held by the Worshipful Company of Coachmakers for improved designs on the present type of military ambulance—now condemned by the Royal Commissioners—the first and second prizes were won by Messrs. Atkinson and Phillipson, carriage manufacturers of Newcastle. One of their draughtsmen, Mr. Terry, gains the first prize, while Mr. John Phillipson wins the second, the third going to Mr. Butler, of the London Polytechnic carriage-building class.

MESSRS. DE DION BOUTON, LIMITED, inform us they are making engines specially for small launches, in two sizes, namely, 3 h.p. and 4 h.p. They are fitted with patent De Dion two-speed and reversing gear, which has been specially designed for this particular purpose. The motor, gear, etc., complete, stands on an aluminium base measuring 35in. by 16in. They also have two boats on order fitted with these engines, which they hope to receive delivery of shortly. A boat, namely, *Lou-Foc*, fitted with a De Dion engine, won the first prize in the motor-boat races held at Vincennes during the Paris Exhibition.

FLOTSAM AND JETSAM.

BY "FLANEUR."

QUIANT memories are recalled by a photograph which has been added to the Automobile Club collection during the past week. It is that of the historic meet at Tunbridge Wells, on October 15th, 1895, when Sir David Salomons, to whom the automobile movement owes so much for his early efforts as a pioneer, invited great numbers of people to the town, of which he was then mayor, to view a partial realisation of Mother Shipton's prophecy as to "carriages without horses." The Comte de Dion was there, the Hon. Evelyn Ellis, and other pioneers, and mightily pleased they looked as the cars puffed round the lumpy ground at a pace which all but conformed to the then legal limit of four miles an hour. I doubt if the most sanguine of us looked forward, on the evidence then before us, to so rapid an advancement in the movement as has actually been brought about, and the fact is not without encouragement in the face of County Council opposition and popular prejudice alike. To those who only know the motor-car in its present highly efficient forms the cars we viewed at Tunbridge Wells would seem just as strange and puffing and snorting as they did to us at the time, for modern automobiles have been improved almost out of all verisimilitude to their prototypes.

It is with no small regret that one learns the impossibility of the Irish Tour in August next being so planned as to include a night at that paradise on earth, Glengarriff. I will undertake to say that most of the members of the party, when they make their mid-day halt on Wednesday, August 14th, will be very strongly inclined to go on strike and abjure the official programme, and only stern necessity, in the shape of inadequate hotel accommodation for so large a party, will compel a forward move. The Poet Laureate has defined Glengarriff as "a haven of absolute beauty and perfect rest," and none who have seen the place will quarrel with Mr. Austin's prose, whatever their mental reservations on the subject of his poetry. This side of the Italian lakes there is no spot from which it is so difficult to tear one's self away; and, indeed, it is reported that an English tourist who went to Glengarriff thirty years ago was so enchanted with the place that he made it his home and never left it. Of the country included in the programme of the Irish Tour generally I can only say that it will prove a revelation to those who have never visited the Emerald Isle, and far exceed any pleasurable anticipations they may have formed concerning it.

THE fact that an accident has occurred to a motor-car descending Birdlip Hill recalls the difficulties which the descent presented to those members of the Automobile Club who took part in the autumn tour to Monmouth last October. Taken all in all the hill is about the worst in England so far as main roads are concerned, and possesses the unique distinction of a red lamp at the top bearing the imperative injunction, "Cyclists dismount," instead of the usual intimation "This hill is dangerous." It is not only a steep hill but a treacherous one, as the gradient moderates itself about half way down, and leads the unwary traveller to infer—though quite imprudently—that he has reached the bottom, whereas just round a corner it becomes acutely steep again.

At the same time, it is perfectly feasible to go down Birdlip Hill in safety on either bicycle or motor-car if properly equipped; so far as the latter is concerned it is purely a matter of knowing the hill before you reach it and taking precautions in time. If a car be started down the hill at ordinary speed, and then the driver attempts to slow up on discovering the severity of the gradient, he will have a sorry time of it unless he has water cooling to his brakes. But if he turns out his burners at the very top and utilises the compression of his engine, this, coupled with his brake-power, should be sufficient to take him down in safety, especially if a rear passenger keeps an eye on the hand brakes, and gives the word to stop as soon as they begin to smoke.

I know several automobilists who have descended Birdlip Hill in this way without trouble, and on the occasion of which I can speak from personal experience it was quite dark at the time. In the recent case of accident it is probable that the driver either started at too high a speed, or that his brakes fired badly and would no longer hold the car.

THE importance of smart finish in the carriage work of motor-cars is always curiously but emphatically displayed whenever the untutored public is brought into direct contact with an automobile function of one kind or another. Knowing absolutely nothing of horse-power, transmission, weight, or the various other items by which the expert takes his estimate of a given car, they are attracted simply by the general outlines and the colour of the enamel. At the Crystal Palace on Saturday, for example, it was amusing in the extreme to note the absolute contempt with which people unversed in motor lore passed by the 24 h.p. Mors of the Hon. C. S. Rolls and the 20 h.p. Panhard of Mr. Mark Mayhew, merely because they had racing bodies. Each of these five cars represented *le dernier cri* of its designer at the power named, but until they showed their paces the public turned their faces the other way, whereas those cars which were elegant in appearance were the cynosure of attention on that ground alone.

NOT that any harm was done, because there were no inferior types on the ground, and handsome vehicles like Mr. Roger Fuller's 16 h.p. Napier, and the heliotrope 12 h.p. car of the Motor Manufacturing Company, deserved all the approving comment they received. But from the uninstructed members of the gathering this approving comment would have come just the same if the cars had been veritable sticks-in-the-mud instead of highly efficient vehicles, capable of considerable pace. I cannot refrain from remarking that the Motor Manufacturing Company has taken a wise course in not only doing its own carriage-building, but also in bringing this department to a state of excellent organisation. All who have the cause of automobilism at heart must desire to see daily accessions of new recruits, and to bring these within the fold there is no manner of doubt but that appearance must be studied concurrently with efficiency. Inasmuch, moreover, as the carriage-building trade is giving automobilism the cold shoulder, it is hopeless to look for fertility of invention in that direction, and if motor-cars generally are to be invested with greater elegance of form or finish it should be from the motor trade itself that a reform should be awaited.

THE California Automobile Club is organising a floral parade for the San José Feast of Roses on May 13th, when President McKinley is expected to put in an appearance.

MR. C. H. GUEST, of Draycott, has lately introduced a useful little device in the shape of a plug adapter, which enables the standard De Dion plug to be used on Benz and similar types of engines. It is fitted with a boss to position the flange from, and to do away with altering the space in the combustion chamber, so that the conditions of the explosion are the same as with the usual plug.

A WORD of timely warning to motorists comes from Wilmslow, where two men were charged with stealing an overcoat and other articles belonging to Lieutenant Boutflower, of Manchester. Mr. Boutflower and a friend were out for a ride on a motor-car, when a breakdown occurred. In order to effect repairs Mr. Boutflower took off his overcoat and placed it on the side of the road, where it was afterwards missed.

UNDER the name "Weston Motors" a large new depot is about to be opened at 14, Mortimer Street, London, W., for the sale of a new steam-car, which comprises several novel features and which is remarkable for the simplicity of all its parts, and the ease with which it can be handled. A car will always be kept under steam at the depot ready to take intending buyers out for a trial trip.

CORRESPONDENCE.



A SUGGESTED MOTOR-CAR SERVICE.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Will you give me room in your columns to suggest to those of your readers interested in promoting electric tram or motor companies that there appears to be an opening for some such communication between the city of Gloucester and Cheltenham—to start from the present tram line at the Gloucester end of the Cheltenham road, and connect with the electric tram line, now in process of completion, which is to connect the two railway stations at Cheltenham, and then proceed to the village of Cleave. The road between Gloucester and Cheltenham is level and of good width, goes through pretty country, and there is a fair traffic between the cathedral city and the town. There is plenty of building land *en route* not yet utilised; and in dry weather such a connection would probably evolve a good deal of holiday traffic. At any rate it is worth investigation.—Yours truly,

A FREQUENT VISITOR.

A PERFECT TRICYCLE.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—In the correspondence on "A Perfect Tricycle," of March 23rd last, Mr. Maudslay states that "a motor which has to work downhill is an absurdity." It seems to me that one which does so would cool down quicker than a free engine. In running down a short but steep hill the free engine would be thrown out of gear and a certain amount of air would be expelled from the radiating flanges. Now take the case of a motor trike with engine always in gear with the road wheels. On going down a hill similar to the above the compression tap would be opened and fresh air sucked in, which would cool the inside cylinder and be discharged out again through the tap and exhaust box. Not only that, but the air or carburetting lever would be opened, admitting air to both inlet and exhaust valves. In the free engine only the outside would be cooled but the other would be cooled inside and out. I may say that I am referring to air-cooled engines only. Trusting to have a reply from some of your readers.—Yours truly,

A. MOORE.

RACING CARS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—It is somewhat surprising in view of the great efforts now being made on the Continent to obtain extreme speeds that more attempts have not been made to utilise steam as a source of power, the Gardner-Serpollet car being probably the only steam car which has been thoroughly worked out on this side the Atlantic, and this car, even with a flash water-tube generator of comparatively heavy design, owing to thickness of tubes, is able to beat all competitors with internal combustion motors.

I notice in Mr. Mark Mayhew's notes in your last issue that he refers particularly to the efforts now being made to reduce the weight of cars and machinery in order to increase speed, and he gives the actual weight of the latest Panhard car as 24½ cwt., the motors weighing 25½ cwt., with *legend* brake horse-power of 65, and probably only about 60 per cent. of this power is transmitted to the driving wheels.

I would point out that for this weight (25½ cwt.), and using a modern water-tube boiler and triple or quadruple expansion engine, it would be quite easy to obtain 150 brake horse-power without doing anything extraordinary or introducing any novelties or absurd complications of any description. The boiler could be fired by gasoline or petrol controlled by an ordinary diaphragm regulator, and the feed-water could be controlled by various automatic devices without the aid of any floats, the Yarrow system being one of the simplest, and proved quite reliable under all sorts of trying conditions. Nothing could be much worse for testing an automatic feed in a water-tube boiler than to be fitted in a small torpedo boat, and then run in a lumpy seaway; such conditions would never be approached on any road. An air condenser of similar design but rather larger than those now in use on the explosion cars would be required, and a fan to circulate the air when running at

slow speeds up hill. This fan is already fitted on some of the large explosion cars. The engines could be coupled direct to driving axle, the axle being split and an engine driving each wheel independently to avoid a differential. No change gear would be required, any increased effort for hill work could be obtained by admitting high-pressure steam direct in the usual way to the intermediate and low pressure cylinders. If a quadruple expansion engine were used, it could be arranged so that the high and first intermediate cylinders drove one driving wheel whilst the second intermediate and low pressure cylinders drove the other wheel, or they could be driven as independent compound engines, and this change would of course be made, *not* by gearing, but by simply altering the steam and exhaust connections, *i.e.*, opening or shutting a valve. Such a car as indicated above would have power enough to drive at any speed which a "racing fiend" dare run it on a road. It would be practically silent, and the engines could be so nearly balanced that vibration would not be felt. The fuel consumption would, I am convinced, compare favourably with any high powered car now in use on account of the great gain in transmission due to entire absence of gearing.—Yours faithfully,

STEAM.

THE ASTER AND DE DION MOTORS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Referring to Mr. E. H. Livesay's letter in your issue of April 27th, he says: "There is one advantage which I do not think has been touched on, which is, that the De Dion engine always seems to me to run with greater regularity and steadiness at a very low rate of speed. This is, I think, due to the fact that the contact on the De Dion is vibratory and at a low speed the trembler has plenty of time to vibrate on the contact screw, giving a stream of sparks at the plug however slowly the engine is going."

Now consider the first spark. It raises a number of molecules of oxygen and petrol vapour to a temperature high enough to make them combine, which ignites the rest of the charge.

Now consider the next spark. It may occur before the explosion is complete, but it will spark through an *envelope of gas* composed of nitrogen, carbon-dioxide, water-vapour, etc., and therefore does not quicken the ignition of the charge and thereby increase the force of the explosion. The fact that one spark does ignite the mixture is shown by the Aster motor itself. Therefore I see no use of a series of sparks for igniting the mixture, as all of them, excepting the first, are wasted; thus a considerable amount of costly electrical energy is thereby thrown away.—Yours truly,

D. J. W. BAXTER.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Referring to Mr. Canning's letter in last week's issue, I accept his statement that he is entirely disinterested and not connected with the trade, but at the same time I do not see why that point should enter into a discussion on the merits of the Aster and De Dion motors. My suggestion was not that Mr. Canning preferred the Aster motor because he was interested in its manufacture or sale, but that possibly his own experience had been somewhat better than the average user's, and, being an enthusiast, he had allowed his judgment to be warped accordingly.

I should very much like Mr. Canning to show me an Aster motor working with perfect regularity at below 200 revolutions a minute. As Mr. Canning does not deal with any of the points raised by me in my letter, I take it that he does not dispute the correctness of same. I am obliged to him, however, for his remarks in regard to racing. I did not suggest that there had ever been any races in England, and I also did not mean to imply that it would be a very simple matter for Mr. Canning or anyone else to run round a track practically at any speed, and I did not suggest that a performance on the track was of any value at all. I have, however, my own opinion in regard to this, and the fact that Mr. Canning expresses contempt for performances of this description does not affect that opinion in any way, and no doubt there are a number of other readers of your paper who feel likewise. As, however, I did not remark anything about track racing, and as I have also taken part in road races in France,

perhaps, as I before remarked, my opinion as to what is a good and what is a bad motor may be accepted.

It is ridiculous of Mr. Canning to point to the Nice-Salon-Nice race—an isolated instance of an Aster success—and I would refer Mr. Canning to the results of all the big motor races of the past two or three years, when it will be found in the motor-cycle section that the De Dion machines have usually been first, second, and third. It is unnecessary to enter into a controversy on this point, but as the facts as stated by Mr. Canning are so inaccurate I think it only right that they should be corrected.—
Yours truly, CHAS. JARROTT.

PETROL AT BRIGHTON.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I shall be much obliged if any of your readers can inform me where to obtain petrol in Brighton on Sundays. I have the book called "Where to Obtain Petrol," which contains several addresses in Brighton. Last Sunday, however, I called at each of these addresses and found the shops closed. I also discovered that the proprietors were not living on the premises, and that there was no notice posted at the shop stating where they resided. After this experience I strongly advise your readers to make arrangements for petrol if they intend visiting Brighton on Sundays.—Yours truly, WALTER POINTER.

TRICYCLES AND TRAILERS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—If ever a case merited the attention of the Vehicle Users' Defence Association it is the one reported on page 132 of your last issue. By what process of reasoning do the Chertsey magistrates arrive at the conclusion that a tricycle and trailer are two vehicles when the Inland Revenue recognise them as one, and had, according to the defendant's evidence, accepted payment of licence on a "four or more wheeled carriage"? Surely this is a case for appeal, as I am sure it has been decided that a tricycle and trailer ranks as one carriage and is liable to the £2 2s. tax. Perhaps fellow-sufferers from this kind of persecution would let us hear from them as to what decision the justices arrived at in their own particular cases? "INDIGNANT."

SPARKING TROUBLES.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Referring to "Aster's" letter in your last issue about his motor, the fault is probably in the carburettor which is too small for the horse-power of the motor. If it is a Longuemare, a larger spray might overcome this difficulty. In all probability the motor is using up more gas than the carburettor can make.—
Yours faithfully, J. CUSINS-NIXON.

MOTOR-CARS FOR LIGHT RAILWAYS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—A paragraph in your issue of the 13th inst., in reference to motor-cars to run on railway lines, has just been brought to my notice. I may say that Messrs. De Dion Bouton, of Puteaux, are at the present time making vehicles especially for this purpose. The details are not yet quite complete, but we shall be pleased to correspond with anyone who is especially interested in the question, and to give them any information possible up to the present and advise them as soon as the car is ready for trial purposes. We may say that we have a car on order, and as soon as one is completed by Messrs. De Dion it will be delivered to us.—Yours truly, DE DION BOUTON, LTD.

WALTER MUNN.

MOTOR-BICYCLE TRIALS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—We were very disappointed to find that the Singer motor-bicycle did not put in an appearance at the trials at the Crystal Palace, on Saturday last, as we are anxious to compare the performance of this machine with the Werner. We have not yet had an opportunity of testing the Werner against the Singer, and as there is a great amount of controversy on the question of

the comparative merits of these two types of machines, we shall be very glad if the Singer Company will suggest to your good self or to us a trial of any kind in which they would be prepared to run the Singer machine against the Werner.—Yours faithfully The Motor Manufacturing Company, Limited,

ALFRED BURGESS, Secretary.

A MOTOR-BICYCLE FAULT.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—With regard to the paragraph in your last issue the writer himself seems to be at fault. My experience is that a motor-bicycle can be taken exactly where an ordinary safety can, and when one comes to think of it the old bike of '90 used to weigh as much as the up-to-date Werner; and we didn't grumble much when we had to three-flit it. Of course, one does not for fun place the motor-cycle on its side, but it can be done if one wishes and no harm is done. Where's the grumble?—Yours faithfully, F. GUY LEWIN.

DAMAGES WANTED.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Whilst riding a motor-tricycle from Newport Pagnell to Wolverton the other day I was mounting a hill when two sheep rushed out of a field and came full tilt into my machine. The impact was so great that the tricycle was turned right over; the two side wheels were smashed, tubes were broken, and I was shot on to some barbed wire, receiving numerous cuts and bruises all over my body. Could any of your readers tell me the best way to obtain damages?—Yours truly,

FELLOW MOTORIST.

THE ENGLISH MOTOR CLUB'S CONTROL CONTEST.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—While at the Crystal Palace Competitions last Saturday, I was puzzled on studying the programme and making inquiries to find out the utility of competitions such as those of Class G, Class H, and the 200 yards speed contest. I should like to ask what it is intended to prove by such competitions?

In Class G, I noticed there were the following entries:—12, 16, 24 h.p.; in Class H, 12, 20, 24, and 10 h.p.; in the Speed Contest, 1½, 10, 3½, 6, 4½, 4, 8, and 9 h.p. Now, these vehicles each of different horse-power, unequal in construction, and carry-different weights, were placed in equal competition, and I could not find that any system of handicapping had been arranged. I have had some experience in racing competitions, but this is about the first time I have ever seen such a mixture put together upon an equal basis.

If this is the form in which motor carriage competitions are to be run, I should strongly recommend that they be severely left alone by every owner or manufacturer of a motor carriage.—
Yours truly, JOHN H. GRETTON.

THE British Motor Traction Company, Ltd., write: Referring to the letter entitled "A Motorist's Quandary," in your issue of the 20th ult., signed A. Kent, in which this gentleman states that there seems a great deal of uncertainty as to what is a properly licensed engine or not, we as owners of the principal motor patents in this country can very easily make this matter clear to him. Any engine or motor carriage which he wishes to buy, if he will communicate with us, we will tell him whether it is properly licensed under our patents or not. If it is properly licensed and a motor made under our patents, we will give him a legal indemnity to protect him against any attack from any other firm. This should remove all his troubles and get over every difficulty he mentions.

THE *Motor World*, of New York, has started a movement in favour of a national league, union, or association of both individuals and clubs, to which all reputable automobilists in the United States are eligible on the payment of a popular fee and on which they may lean and feel a sense of security; an organisation having capable sub-heads in the several States or sections, with authority to act independently, promptly, and energetically as occasion arises or as opportunity presents.

CONTINENTAL NOTES.

BY "AUTOMAN."

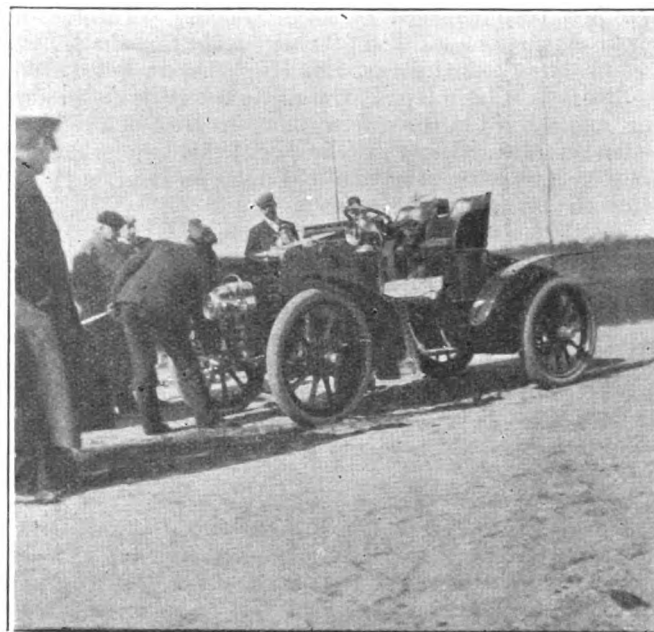
AUTOMOBILISM is going to have a statue erected in its honour. What other industry could have hoped, in the first ten years of its real existence, to have attracted sufficient public interest and assumed the requisite national importance to be recorded in marble or bronze? Paris is to

Avenue du Bois and Avenue de la Grande Armée. The former is paved with macadam, and is in very bad condition, and nearly all motorists choose the latter, so that in starting and in returning they will pass by the statue of the man who was certainly the master mind and the inaugurator of the great petrol motor-car industry.

THE use of the motor-car for agricultural purposes is being



M. GASTON GUDERS STARTING FROM BRUSSELS ON HIS 12 H.P. PANHARD.



BARON DE CRAWHEZ'S 28 H.P. PANHARD—JUST BEFORE THE RACE.

have a statue of Levassor erected by public subscription, and a site most suited to the circumstances has been chosen in the little grass-covered island at the entrance to the Bois de Boulogne, just by the Porte Maillot. Ninety per cent. of the Paris automobilists when they want a spin go into or pass through the

studied in France, where an inventor is at work, I understand, on an automobile reaping machine, with a 12 h.p. petrol motor. It can be seen at a glance that this will have many advantages to the farmer over the reaping machine drawn by horses. Speed is a great gain to the agriculturist who wants to make the



M. J. VAN STAPPEN ON HIS 5 H.P. BUCHET CAR.



M. J. MORTNES D'OESTERWYCK ON HIS 6 H.P. BELGIAN DAIMLER.

Bois de Boulogne, which, whilst it affords in itself a great charm and variety to the explorer who hunts out the beauties of its numerous by-paths, is also the main road to Versailles, St. Germain, and many other world-famed tourist resorts. To enter the Bois from Paris there are two principal arteries, viz.,

most of a spell of fine weather to get in his harvest, for with horses he is limited to a walking pace, whereas with a motor he can increase his speed to a very large extent. Then, again, he needs in any case either to have a mechanic or to have some mechanical knowledge himself in order to be able to keep a

reaping machine in order. A petrol motor will therefore come easy to him, and not cause him any additional expense, and will not want feeding during the long months when perforce it must lie idle. The farmer who takes advantage thus of the automobile will soon learn to look with more favour on us as we buzz by him on the road.

ACTORS and actresses took to motors quite in the early stages of their development, but M. Huguenet, the Paris artist, who has just been engaged by the "Galeries" Theatre, in Brussels, to play in a piece called "Veine," is the first that I have heard of to "tour" in his car. M. Huguenet travelled from Paris to Brussels in his 6 h.p. Darracq. He left Paris on Sunday morning, and arrived in Brussels, without accident of any kind, on Monday evening. He is delighted with his trip, which he accomplished at an average speed of $18\frac{1}{2}$ miles per hour, enjoying meanwhile the beauties of the scenery.

I HEAR that Mors is preparing some new cars for this year's races, and I am told that they are to be of 70 brake h.p., about the same wheel base as the 16 h.p., but slightly wider. There are to be four cylinders, and the frame being rather low, the engine looks enormous, and seems to dominate the car. The fourth speed is to be 93 miles per hour, and I understand that already $29\frac{3}{4}$ miles have been accomplished in a private trial in twenty minutes, which makes a speed of nearly 90 miles per hour.

ONE never knows what may happen, and if the Austrian automobilist who met with an accident a short time ago had a prejudice against steam-cars, lest he should be blown up, and therefore bought a petrol car, it only proves again that one never knows. It was a De Dion-Bouton voiturette, and the weather in Vienna was very cold. He was going through Vienna, when suddenly there was a violent explosion, clouds of steam, and his motor broken in pieces. It looked as if the cylinder had given way, and was unable to resist the explosive mixture, but on closer examination it was discovered that his circulating pump was stopped up, and that the cold and the speed of travelling had frozen up his radiator and pipes, leaving his cylinder jacket full of water, with its passage blocked at each end by solid ice. In fact, he had a boiler without a safety-valve. The result was obvious. The heat of the constantly repeated explosions in the cylinder soon turned his water into steam, and up and up went the pressure until the water jacket burst.

A KILOMETRE speed competition with a flying start took place near Antwerp on the 21st ult., in glorious weather. (See illustrations on page 141). The start was advertised for fourteen o'clock, as it is called in the kingdom of Belgium, where the twenty-four-hour system was adopted some years ago. During the morning the streets of the old town of Antwerp were very busy with motor-cars of all kinds and descriptions buzzing to and fro, and preparing for the contest. I noticed quite a contingent from the A.C.B. lunching at Bertrand's famous restaurant on the Place de Meir. The trials took place at Vieux-Dieu, outside the fortifications, on a military road between two forts. The road is not very wide, but quite straight and level, and paved with square sets, fairly smooth, and in good condition, the sets having a great advantage to the spectator, as far as the absence of dust is concerned. The best times were the following:—

1. A. Joostan's electric car at a speed of $43\frac{3}{4}$ miles per hour.
2. P. Wilford's 16 h.p. Peugeot at a speed of $41\frac{1}{4}$ miles per hour.
3. Baron de Crawhez's 28 h.p. Panhard at a speed of $40\frac{1}{4}$ miles per hour.
4. Miesse's steam car at a speed of $35\frac{1}{4}$ miles per hour.
5. De T'Serclaes' 6 h.p. tricycle at a speed of $33\frac{3}{4}$ miles per hour.

The great interest centred, of course, on the Baron de Crawhez and his new 28 h.p. Panhard, of which great things were expected, and it was a surprise to everyone to see him beaten by a 16 h.p. Peugeot, which had been driven over from Paris the day before in order to compete. The Baron has written to the papers to protest that his time must have been badly taken, and that his car can do fifty-two miles per hour. M. Wilford, with his Peugeot, has replied challenging the Baron to run the race once again any time he likes, the stakes to consist of "glory." My Kodak, however, throws light on the subject, and proves beyond question that the relative speeds are, at any rate, correct, for the shutter of my camera is not quick enough to take clearly a speed of forty miles per hour, and, therefore, in some dozen pictures which I took exactly at the same spot the distinctness of each varies absolutely with the speeds recorded.

THE Course du Catalogue organised by *La France Automobile* took place last Sunday on a four-sided course from Melun to Nangis and Valence, and round again to Melun. Once round, or $47\frac{1}{2}$ miles, for the light cars, and twice round, or 95 miles, for the big cars. The following were the winners:—

Class 1. Cars selling at less than £160, without bodies, Demester on a Gladiator, speed $36\frac{1}{4}$ miles per hour.

Class 2. Cars selling at between £160 and £320, without bodies, Edmond on a Darracq, speed 38 miles per hour.

Class 3. Cars selling at between £320 and £480, without bodies, Cuenod on a G. Richard, speed $25\frac{1}{2}$ miles per hour.

Class 4. No starters.

Class 5. Cars selling at more than £640, without bodies, De Champrobert on a Bolide, speed $39\frac{1}{8}$ miles per hour.

Class 6. Electric cars, Garcin on a B.G.S., speed $14\frac{7}{8}$ miles per hour.

The net result is a victory for the small cars, which nearly equal the speed of the big-powered cars at an infinitely smaller cost. H. de Rothschild went over the course for a wager on his Mercedes, averaging only $43\frac{1}{2}$ miles per hour.

ON Sunday, May 19th, the A.C.B. will hold a kilometre speed competition at Diegheim, on the road to Haecht, near Brussels. This is the most important Belgian event, and it is anticipated that some of the "high flyers" preparing for the Paris-Berlin race will appear there for a preliminary canter.

I HAD a glimpse the other day of the motor-car belonging to King Leopold as it was standing outside the works of one of the leading firms of motor-car builders in Brussels. It is certainly a splendid vehicle. It is really a capacious *coupe* fitted on to the ordinary Panhard and Levassor frame, with the driver on the front seat. The fittings are very fine, and the satin lining and polished brass stand out against the dark green carriage work, giving the appearance of a very stylish turn-out. I noticed, however, that the car is not numbered, and I wondered if the King were specially exempted from this regulation.

MICHELIN, in his "Monday," in the *Auto-Velo*, tells why his inner tubes are always red. It is because he uses the best Para rubber combined with the sulphate of antimony, which renders it at once supple and durable. His outer covers, on the contrary, are light in colour because he employs a stronger rubber, which better resists the road friction.

THE Paris Municipal Council has conceded a site at the Porte Maillot entrance to the Bois de Boulogne for the monument to the late M. Levassor.

UNDER the title of the Bowden Brake Company, Limited, a company has been registered with a capital of £50,000 to adopt an agreement with E. Bowden's Patent Syndicate, Limited, to manufacture and deal in the Bowden brake, and any other brakes for cycles and motor-cars; and to carry on business as carriage builders and merchants, tyre and brake makers, engineers, etc.

THE "HUDD" PETROLEUM-SPIRIT MOTOR.

AN attempt to produce a motor as nearly vibrationless as is possible is that of the "Hudd" Syndicate, some of whose accessories we have lately described and illustrated. It has no striking departure from principle, but, as shown to our representative last week, it has several very noteworthy features and novel design. The inventor has carefully studied the question of vibration and aimed at minimising it as far as possible. To do this he has wisely provided for the vibration from the force of the explosions as well as for the balance of the moving parts. It is claimed that both explosions and moving parts are

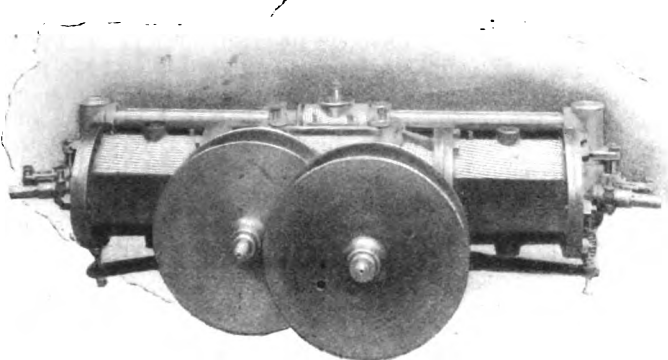


FIG. 1.

perfectly balanced and a true vibrationless engine produced. As will be seen from the illustrations, two cylinders are used and placed directly in line with each other. Each cylinder is 3½ in. bore by 3 in. stroke, the two together developing 5 h.p. and working at a speed of 1,000 revolutions per minute. The extreme measurements are 30 in. by 16 in. by 10 in. deep, the whole being very compact and allowing for any type of body to be fitted, and leaving ample room for the passengers.

Each cylinder drives its own crank with a flywheel for each. These are geared on to the driving axle so that the force of the explosions does not travel on to the gearing, thus absorbing the impulses of the explosions and avoiding loss through friction. Every part moves in opposite directions, pistons, cranks, and connecting rods, so as to provide for the shock of the thrust of the explosions against the cylinder head and to provide against the vibration of the moving parts. Even the pendulum-like action of the cranks, rotating and swinging before each other, is used

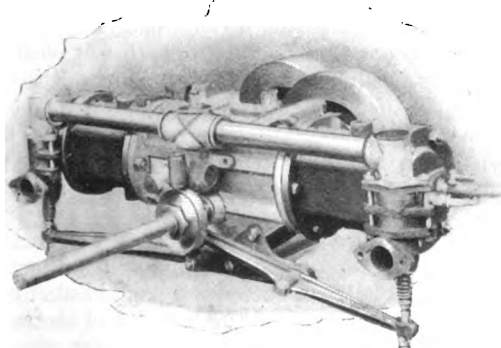


FIG. 2.

to minimise vibration. A further effort in this direction is a small-bore tube from one combustion chamber to the other used to equalise the compression and therefore to also equalise the explosion. In the sectional drawing the two pistons AA are connected by similar connecting rods BB to the two cranks CC on separate spindles DD. A gear wheel E behind each crank gears into another gear wheel F on a spindle H from which the power is taken and by which the exhaust valves are driven. The bearings of the spindles DD are brought up close to the cranks so that the gear wheels are over the ends of the bearings. The

fly-wheels GG are fixed at the ends of the spindles DD opposite the cranks and serve only as reservoirs of energy, absorbing the energy of the explosions and relieving the gears from the shocks. It will be seen that the similar moving parts on each side of the motor always move in opposite directions. The carburettor employed is of the constant-level "spray" type. It consists of a T casing, the two upper members connecting with the induction valves of the cylinders and the lower members with an air heater (not shown in the illustrations) fixed to one exhaust branch. At a constriction in the lower member of the T casing a small orifice communicates with the little reservoir of oil seen in front of the carburettor. There is no projecting jet, the hole being flush with the inner surface of the carburettor. An overflow pipe is provided in this reservoir to keep the level constant, a small pump continually supplying more petrol than required. On the suction stroke a fine jet of petrol emerges from the small orifice mentioned and mixes with the warm air passing. A valve above the carburettor serves to control the speed of the engine by cutting out the mixture directly or indirectly by a governor. The ignition gear consists of a centrifugal governor which moves the cam controlling the ignition on the shaft H through an angle proportionate to the speed.

The transmission consists entirely of gearing fixed on a bracket fastened to the foot J of the motor, and parallel to the shaft A the shaft driving the hand wheels of the car is fixed; this shaft carries gears which are driven by other gears in turn to this parallel shaft and provides three speeds forward and a reverse. To make control and driving easy there will only be one handle, the ignition gear which controls the speed described above, and the starting valve, referred to in a recent issue, being used.

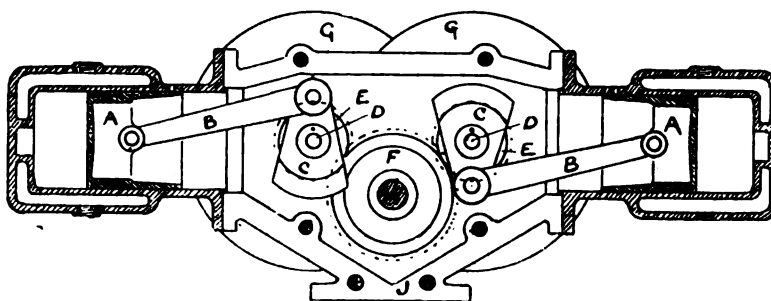


FIG. 3.

The Hudd motor is made by the Hudd Syndicate, of 27, Farnival Street, E.C. We understand that it is probable that for the present the Syndicate will supply the engines for those who desire to build their own cars.

EARL RUSSELL was the chief witness in a case at Alton Petty Sessions on Tuesday. The earl was driving his motor car between Alton and Farnham, when a van, unattended, stopped his car. He communicated with the Chief Constable of Hampshire, with the result that the defendant, a grocer, was summoned and fined five shillings.

We learn that Mr. Harrison Benn, of the firm of Messrs. Joseph Benn and Sons, Bradford, and vice-president of the Yorkshire Automobile Club, after visiting Paris to inspect all the leading systems of French electrical vehicles, has just placed an order with Messrs. Shippey Bros., Ltd., for an electrical landau and a 10 h.p. electric sporting dog-cart for use on his estates in Devonshire.

THE Rubber Tire Company requiring for their own use a more extensive place of business, the Clipper Pneumatic Tire Company, who have hitherto occupied a portion of their premises in Aston Cross, have been obliged to move their head office and factory. The Clipper Company have therefore acquired new premises in Alma Street, Coventry, lately occupied by the Dunlop Pneumatic Tire Company, which will be their head office in future. They are, however, still retaining a portion of the Aston Cross building as the Birmingham dépôt for their tires.

JOTTINGS BY A WORLDLING.

I DROVE down the Portsmouth Road on Sunday on a May-fair voiturette, which, by the way, went excessively well, and I was surprised at the number of cars I saw. There was quite an automobile meeting at the Angel Inn, Thames Ditton, at about seven o'clock. Besides ourselves there were two tricycles, a Renault, and a big 8 h.p. Panhard, with two ladies on board whom I judged to be French from their very elaborate *chauffeuse* costumes. We also passed two Peugeots, a quadricycle *en panne*, several Benzs and De Dions, two Daimlers, a Stanley steamer, and half a dozen tricycles.

I HEAR a new American steam-car, the Kidder, very well spoken of. I do not think there are any in this country yet, but one is being sent over for the use of Mr. Charles Colby, a director of the manufacturing company, who has taken a house in London.

A MOST delightful and economical way of spending the summer would be to drive down from Dieppe through Paris, Strassburg and Offenburg to the Black Forest, and to make some country *wirthschaft* the centre of expeditions to such places as Baden-Baden, Badenweiler, Altbreisach, and even Bâle and Neuhausen. There is an excellent inn called the Kyburg, in the Günthersthal, one of the first valleys on the Freiburg side. Pension, about 6s. a day; excellent "open" wine and good cooking, electric light, a lovely garden, and a trout-stream. The proprietor speaks English, and understands our habits and wants. In Freiburg itself there is, I believe, a motor-car club called the Breisgauer Automobil Verein. One can have a splendid drive back down the Rhine to Cologne, Aix-la-Chapelle, Liège, Brussels, and Antwerp; or one might do it the other way, going to Aix from London in time to see the second stage of the Paris-Berlin race. As all the world knows, the Grand Monarque is the place to stop at in Charlemagne's city. The other hotels on the route are: the Grand at Antwerp, the Grand (with a courtyard for one's car) at Brussels, the Suède at Liège, the Dom or the Nord at Cologne, the Royal at Bonn, the Géant at Coblenz, the Germania at Karlsruhe, the Victoria at Baden-Baden, the station hotel, the name of which I forget, at Offenburg, the Zähringerhof at Freiburg, the Ville de Paris at Strassburg, the France at Nancy, the Meunier at Chalons, the Angleterre at Rouen, and the Grand at Dieppe. I have found all these hotels very comfortable, and can recommend them from personal experience.

MRS. KENNARD was, I think, the first lady novelist to write of the joys of automobilism, but several others have followed her lead, among them being Mrs. C. N. Williamson, who accompanied her husband on part of a long tour which he has recently made round France into Italy. Mrs. Williamson has introduced the motor-car into more than one of her novels, and she told me the other day that she did not think much of life without one.

AMONG recent experiments made by the French War Office has been that of fitting small bakeries on to automobiles that can follow an army at about six miles an hour. It was, I am told, very satisfactory, and the Government intend ordering a large number of these machines from Monsieur Schweitzer, whose bread-making apparatus was used. There is something so aggressively modern about the idea that the good people in Pall Mall will probably not dare to even look at a specification for a decade or so.

It may be a chestnut, but it is amusing.

Scene: Between London and Richmond. Irascible sportsman in a phaeton behind two fresh horses that are expressing their disapproval of a passing motor-car somewhat boisterously: "Why the — don't you burn the — thing?"

Chauffeur (blandly). If you can't drive, why did you hire the trap?"

Collapse of I. S.

I HAVE always held that the motor-car industry in this country would benefit greatly by some such keen form of competition as is the outcome of the racing in France. It will be long before the local authorities are convinced that a few wayfarers on our great roads must be inconvenienced for about a hundred hours in a year that a great industry may thrive. Races between 4.30 and 7.30 a.m. on the Bath and Portsmouth roads might slightly affect a few unimportant market folk, but they would be of incalculable value to thousands of people dealing with millions of capital. Bumble will, however, not appreciate this for many years to come. It is, therefore, regrettable that a good race-course for motor-cars cannot be established. I, for one, believe it would pay, as one might reasonably expect big gates for such an exciting sport. *Apropos*, I heard the other day that a company is being formed to make a race-course at Wembley Park, and that Mr. Roger Wallace, K.C., has been approached to accept its chairmanship. It would not cost much—say £10,000—to make a good motor-car *piste* round this course, and I am sure there are enough sportsmen interested in automobilism to guarantee four per cent. on any outlay that the company might make with this object. Mr. Wallace would be doing much for the industry if he were to suggest this to his fellow-directors.

I HEAR that a *garage* is to be opened shortly on the Bayswater Road where people who have not stable accommodation can store their cars at a very small monthly charge. Each car will have a separate box, to which the owner will have a key. There will be a workshop attached to the *garage*. This should prove a boon to many people.

TO-DAY (Saturday) the members of the Irish Automobile Club will hold a run from Dublin to Blessington, seventeen miles out.

AT a meeting of the Chelsea Town Council, the Surveyor reported that there had been four accidents with the municipal motor-vans, a sum of £7 8s. being paid in compensation.

WHEN in at the Daimler Motor-Company's London *dépôt* the other day we saw a handsome 6 h.p. tonneau, finished in black and green, which was just about to be despatched to the Marquis of Winchester.

A USEFUL little device in the form of an apparatus for testing ignition accumulators without using a voltmeter has just been brought out by the Bristol Electric Safety Lamp Works, of Great Smith Street, Westminster, S.W.

IN writing to Messrs. Salisbury and Son with regard to the Salisbury Bleriot acetylene motor lamp, Frank Morriss, of King's Lynn, expresses the greatest satisfaction with it. The lamp sends out a bright beam of light of from sixty to eighty yards in length, thoroughly lighting up the road in front.

THE Automobile Club is preparing a list of electric charging stations within a radius of ten miles of Charing Cross. Members who can supply such information are requested to communicate with the Club Secretary and, if possible, to state whether 115 volts are obtainable, what is the price charged for current, and during what hours the station is not available for the charging of electric vehicles.

THE F. O. Bailey Carriage Company, of Portland, Me., is placing on the market a torch heater for steam motor carriages. It consists of an iron trough fitted to a pointed steel rod. In using the heater it is held under the torch valve of the carriage and a small amount of petrol is allowed to run into it. The torch is placed over the heater and the petrol is ignited with a match. When the petrol is consumed the torch is heated to the right point.

A NEW aluminium alloy of the name of "macadamite" has been introduced in America, and is soon to be placed on the market. The standard composition for castings contains 70 per cent. by weight of aluminium, 26 per cent. of zinc, and 4 per cent. of copper. The alloy has a specific gravity of 3.31, and the tensile strength is claimed to be from 40,000lb. to 60,000lb. per square inch. The lightness of this new alloy, combined with its strength, will, undoubtedly, render it of great value in the construction of certain parts of motor-cars.

THE MOTOR-CAR EXHIBITION.

A FORECAST.



SO far as automobilism in this country is concerned, the century opens well. Mr. Arthur Balfour, the Leader of the House of Commons, has welcomed the motor-car as a practical solvent of some social ills, and the Automobile Club's Motor-Car Exhibition at the Agricultural Hall, Islington, will afford convincing testimony as to the feasibility of his ideas with regard to locomotion on common roads in the future. The forthcoming event will demonstrate an advance in the manufacture of motor-vehicles that is as far removed from the endeavours of the first years of the last decade of the Nineteenth Century as the initial efforts of Stephenson to the railway locomotives of to-day. This may seem an exaggeration; but a glance round the Agricultural Hall on any day next week will prove conclusively that vast improvements have been made, for the manufacturers are getting into the right direction with regard to future developments.

Every kind of car (petrol, steam and electrical) will be shown, and many nations will be represented. Not only will British manufacturers make a creditable display, but the best types of French, Belgian, German, American and Canadian vehicles will be exhibited to afford a comparison of our own performances with those of foreign countries and our own Colonies. It may seem that a display of vehicles such as this would be a monotonous collection; but variety and interest will abound on nearly every stand. An electric Victoriette similar to one that has been sent to Sandringham for the Queen, will be shewn, and the great motor-caravan of Messrs. Turgan and Foy, which recently created something like a sensation in Algeria, will be on view, a novel adaptation of mechanical power on roads, which offers a new experience to the jaded man of wealth able to afford a lazy holiday on the go-as-you-please principle. There will also be one or two of the 50 h.p. Napiers, and probably the Motor Manufacturing Company's car entered for the Gordon-Bennett race, while much attention is likely to be directed to the identical Gardner-Serpollet car which won the Rothschild Cup at Nice, and which travelled at the mean speed of sixty-three miles per hour. The presence of such exhibits as these will appeal to the interest of the public who are only cursorily concerned with automobilism; to the people who are more keenly inclined towards the new movement there will be scores of new ideas, applications, and suggestions—all of interest and many of value. Hence the necessity of these exhibitions to keep motorists *au courant* with the new developments that are being made in the industry throughout the world.

As to the success of the Exhibition there is not the shadow of a doubt. The whole of the ground floor will be occupied, and the adjoining halls will also be filled for the first time. Mr. Charles Cordingley, whose business management of the exhibition has resulted in such a fine show, will have his offices in the same place as before, and has arranged a special room, under the control of Mr. W. J. Peall, for members of the Automobile Club, in which a billiard table will be fitted. At dinner every evening music will be provided, and on Wednesday Sir Francis Jeune will probably preside over the dinner of the Automobile Club. Last year a similar gathering, under his genial presidency, was one of the social successes of the week, and the forthcoming dinner will probably be an advance on its predecessor. In the great demonstrating arena opportunity will be given for the public to have rides in motor-vehicles, and there under the direction of Mr. Basil Joy, a past president of the Junior Society of Engineers, manufacturers will demonstrate the easy running of modern automobiles. To those of an artistic temperament, and whose education with regard to the technicalities of the motor-car has been neglected, the Poster Exhibition will present automobilism in a new and favourable light. There will be a large and comprehensive display of the posters issued by the leading Continental firms. This is a branch of art that our manufacturers have not largely cultivated, and both designers

and the trade will glean many appropriate ideas in this section of the exhibition.

Anticipating somewhat as to what will be the leading feature of the Exhibition, we may mention that several evidences will be present to prove that British manufacturers have not been idle since the last exhibition. The Daimler Company will show their 4½ h.p. Kimberley car, a 9 h.p. Marseilles *tonneau* car, a 6 h.p. wagonette, and their standard vehicles which early popularity has made familiar to motorists. Several good types of vehicles designed for hotel work and public service will be exhibited by the Motor Manufacturing Company, who will complete a varied exhibition with the M.M.C. *voiturette* and other light vehicles. Nine h.p. Napier cars, to say nothing of the 50 h.p. cars, developing 70 h.p. on the brake, will also be shown, while other attractions of British manufacturers will include a 6 h.p. double-cylindered Star car; a Hallamshire light car built for use in hilly districts; the "Progress" car, which will pass through a gateway 3ft. 7in. in width and yet has enough room to seat two persons side by side; a New Orleans three-seated car; *voiturettes* fitted with 3½ and 6 h.p. "Imperial" water-cooled motors, the latter having a *tonneau* body; the "Humber" four-seated car with 4½ h.p. De Dion motor; a new two-seated car by the Metropolitan Motor Manufacturing Company; the "Swift" *voiturette* with its 4½ h.p. water-cooled engine; a Wolseley 10 h.p. car with *tonneau* body and a two-cylinder horizontal motor; a Marshall 4 h.p. *voiturette* in which the belts have been dispensed with, and the Belsize car, which is also gear driven. A new steam car of British make, known as the Simpson, will naturally attract much attention. This is built in two sizes, two-seated and four-seated. A flash type boiler is employed. The number of heavy vehicles will not be large, but Bayley's steam trolley to carry four tons will be a worthy representative of a section of the industry in which Great Britain leads.

From America several new cars are promised, including the "Reading" steam car and the Petromobile. This latter has an engine of 6 h.p. and the boiler has 370 tubes of standard gauge, giving a large heating surface.

Among French cars that are new to this country will be the Amedée Bollée two-cylinder car, the motor of which works with either petrol or alcohol; and the Crouan 6 h.p. light car with five speeds forward and a reverse motion. The Bardon car will also be shown for the first time at any English exhibition. Other notable exhibits will include a 8 h.p. Darracq phaeton, the "Ader" *voiturette*, a 3½ h.p. Delin *voiturette*, the "Teras" *char-a-banc*, on the Gobron Brillié system, the 6 h.p. "Vehel" *tonneau* car, a 10 h.p. Mors car with *tonneau* body, a Brown motor-bicycle, and several electrical cars. In this connection, all interested in motoring will be glad to hear that the great French house of Panhard and Levassor will send several of their latest cars, including 5, 7, 8, and 16 h.p. vehicles.

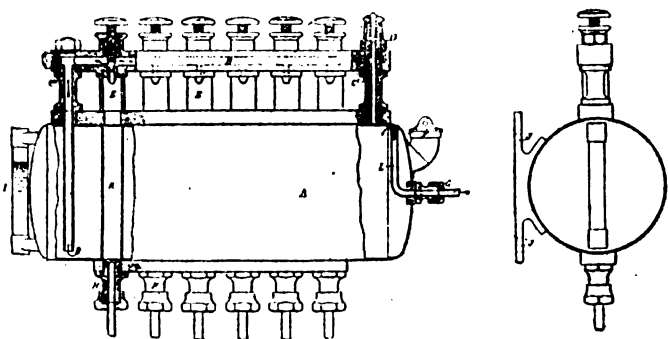
In addition to having the finest collection of motor-vehicles ever seen in any part of the British Empire, the exhibition will also contain a splendid show of accessories, tires and other indispensable adjuncts. Here mention may be made of Bowden's patent wire mechanism fitted to motor-cars, by means of which the change gear, sparking advance, throttle and regulator are all actuated. The Cranford variable-speed gear, which is claimed to have ten distinct advantages, will be on view. In tires there will be the usual complete selection, added to by the "Williams" tire, which has an encircling cord so arranged as to give great power of resisting side thrust.

In this brief forecast we have not attempted to do more than mention some of the interesting exhibits that will draw the Automobile world to Islington during the next few days. In subsequent issues the *Motor-Car Journal* will publish a full and complete report of the various stands, particularising their novelties and detailing their main points. But the foregoing notes will indicate the varied and important character of the Exhibition. It is not for us to sing the praises of the Exhibition; but we are confident that the verdict will be, when the exhibition closes its doors on the 11th inst., that the display exceeds the anticipations of the most sanguine and has already grown to

International proportions. Manufacturers abroad have recognised the expansion of the British market and our own are rightfully anxious to share with the general prosperity. These and other facts will be apparent from the most cursory glance at the Exhibition. It will form a great means of publicity to the industry and, in educating the public to an appreciation of the automobile, will do much to hasten the disappearance of the fast dying prejudice against the inevitable. For that is what the motor-car has come to be.

THE DUBRULLE MULTIPLE LUBRICATOR.

A NEW multiple lubricator, in which the feed is effected by the exhaust pressure of the engine, has recently been brought out in France. The apparatus consists of a metallic recipient A (see illustration), serving as an oil reservoir, and a distributing pipe B by which the oil is led to all the sight-feed tubes with which the device is provided. C is a column serving to maintain the distributing pipe in place, and also containing a valve D by which any excess of pressure is relieved. E is the glass tube through which the feed of the oil can be observed. E² are the needle valves by means of which the feed may be adjusted. F is a screw-cap for the opening through which the reservoir is filled. G is a pipe union by which the pipe through which the exhaust gases arrive is connected to the reservoir. H H are unions for coupling the oil pipes leading to the lubricated surfaces to the reservoir. I is a glass gauge, indicating the height of the oil in the reservoir. J J are lugs for attaching



the oiler to the vehicle. K K are tubes passing through the reservoir and connecting the sight feed tubes with the pipe unions H. L is a pipe by which the exhaust gases are led to the highest point of the oil reservoir, which is provided with a calibrated opening, calculated to avoid a sudden rise in pressure when the exhaust valve opens.

The lubricator operates as follows: When the motor is in operation a part of the exhaust gases passes through the tube to the oil reservoir and exerts a pressure on the surface of the oil. The oil having no other way to get out of the reservoir, it will ascend the tube depending from the column C, pass up through the column itself and through the distributing pipe, where it is distributed by the various needle valves; it then passes through the sight-feed tubes and through small brass or copper tubes to the parts to be lubricated. In case the motor stops the gas pressure ceases, and the action of the lubricator stops immediately.

THE motor-car industry in America is progressing by leaps and bounds. In Boston, an enterprising firm have decided to erect a five storied and basement building solely for motor-vehicle purposes. This is said to be the first building of its kind in the world. Each floor will contain 5,000 square feet of space. The second and third floors will be devoted to offices and showrooms for manufacturers' agents. The upper floors are to be fitted up for club purposes, with reading and lounging rooms, library and offices.

HERE AND THERE.

NOTWITHSTANDING the success of the car he used in the Nice races, M. Serpollet is reported to be building a much faster car for the forthcoming Paris-Berlin race.

THE case of the Daimler Motor Company, Ltd., v. the British Motor Traction Company, Ltd., is down for hearing, before Mr. Justice Buckley, in the Chancery Division on Monday next.

MR. G. H. BECHTEL, of 5, Lord Street, Southport, has been appointed local agent of the Motor Manufacturing Co. Mr. Bechtel also undertakes any repairs or accumulator charging, and has plenty of room for storage.

M. RENE DE KNYFF and Commandant Krebs have had out on the road the Panhard car intended for the Gordon-Bennett race, and express themselves well satisfied with the trial trip. It is said that the Mercédès cars have been sent back to Cannstatt to be speeded up for the event.

MESSRS. BRADBURY BROS. have just opened large premises, at 108, High Street, Croydon, nearly opposite the new theatre, for the purpose of building motor-cars and cycles. We understand from Mr. H. W. Bradbury that they intend making a special feature of a powerful two-seated voiturette.

THE two Panhard cars taken over to the United States by Mr. J. W. S. Langerman and seized by the United States customs authorities for alleged under-valuation, are still in the hands of the authorities. The amount necessary for their redemption is £1,734, the foreign value, plus the duty.

THE experiments recently made by the post-office authorities in Toronto, Canada, in collecting and delivering mails for the district offices of the city by motor-cars having proved successful, a further step is being taken in the same direction by using motor vehicles for collecting from the street letter boxes.

A LITTLE English Panhard car, owned by a Bournemouth gentleman, caught fire at Southampton one day last week outside the works of Messrs. A. B. Collis and Co., of West Quay. The fire was caused through the overflowing of the float chamber which controls the flow of petrol to the burners. Luckily, little damage was done.

MR. BURFORD, formerly of Messrs. Burford, Van Toll, and Co., of Twickenham, and latterly with the Motor Manufacturing Company, has accepted the management of the London office of Messrs. J. F. Milnes and Co., who have taken Motoria, Balderton Street, Oxford Street, W.C. The new firm will make its *debut* at the Automobile Club Show, and we wish Mr. Burford success in his new position.

IN his examination before the Norwich Bankruptcy Court Benjamin John Quinton, fruiterer, of Norwich, stated that he bought a motor-car to ply between Thorpe and the Market Place, its cost, to be paid by instalments, being £520. The motor-car did not pay, and being unable to keep up the instalments, the car was seized. He had paid £190 in instalments and the machine had cost him about £40 for expenses of various kinds.

THE motor-car has found its way into the rocky region of British Columbia, where the Boundary Auto-Traffic and Transportation Company, Ltd., has been formed to run a motor-car service throughout the day between Grand Forks and Columbia, touching at various intermediary points. A daily service will also be run between Columbia and Republic. This will be the first transportation company in the colony to run a motor-car service.

MR. JOHN HENRY KNIGHT has suggested that as members residing in the country are unable to attend to hear papers read in the evening, there should be in addition to the ordinary monthly evening papers a certain number of afternoon papers. The Committee of the Automobile Club has decided to ask Mr. John Henry Knight to read a paper in the afternoon with a view to ascertaining whether there is a demand for afternoon papers.

MR. WILLIAM LEA, of the "Liver" Motor-Car Works and Show-rooms, has offered to place his large depôt at Park Entrance, Birkenhead, at the disposal, free of cost, of members of the Automobile Club and other visitors on the occasion of the Club's visit to Liverpool in connection with the forthcoming Heavy Motor-Vehicles trials on June 1st. The depôt will accommodate from thirty to forty cars, and, if the space be insufficient, five or six cars can be accommodated at 16, Berry Street, Liverpool.

THE Motor Car Company, Limited, of 168, Shaftesbury Avenue, W.C., ask us to state that they will have pleasure in meeting any of our country readers who contemplate visiting the Show at the Agricultural Hall to-day or during next week at any station in London with a Decauville car, to convey them to the Exhibition. They will also give their driver instructions to hand his passenger an entry ticket, free of charge. Anyone wishing to take advantage of the offer should drop a line to the company notifying station and time of arrival.

MR. F. MITCHELL, of 55, Washway Road, Sale, near Manchester, has sent us a specimen of his "Clipper" Hinge Belt Fastener. The "Clipper" fastener, it is contended, has many advantages over all other ways of fastening ends of belts together. It passes over the pulley as smooth and pliable as an endless belt, and by reason of the hinge joint it does not break the belt while bending over the pulley. The belt can also be taken apart for any change necessary in an instant, and put together again just as readily. Specimen joints may be had on application.

MR. MALCOLM BROOKE, of Egremont, Cheshire, has also forwarded particulars of his new belt fastener. The fastener consists of a special hinge clip with upper and lower jaws, the jaws having four teeth in the lower jaw and three in the upper. The teeth are pressed into the belt, alternately not directly, on top of each other. The fastener is made of malleable iron, so that the jaws can be easily opened and the belt reinserted. The fastener being hinged will grip the smallest pulley possible, and there is not a chance of its coming off the strap, as the under jaw will prevent this.

WE announced some time ago that Messrs Hewetson's, Limited, the agents for the well-known Benz cars, were removing from Dean Street, Soho, to more commodious premises at 251, Tottenham Court Road, W. The new depôt, which is situated

near to Oxford Street, has six immense floors. In the basement a complete repair plant is being put down, all the machine tools being driven by electric motors. There is large and safe storage for petrol, and large stocks of all the parts of the various belt and gear-driven Benz cars handled will always be kept on the premises.

MR. F. J. BELL, of the New Era Laundry, Pokesdown, Bournemouth, in writing to the Motor Manufacturing Co., Ltd., expresses the greatest satisfaction with the two M.M.C. 6 h.p. motor-vans supplied to the laundry company. On one occasion whilst out distributing goods the engine of one of the vans was working for over eight hours, and drawing a load of

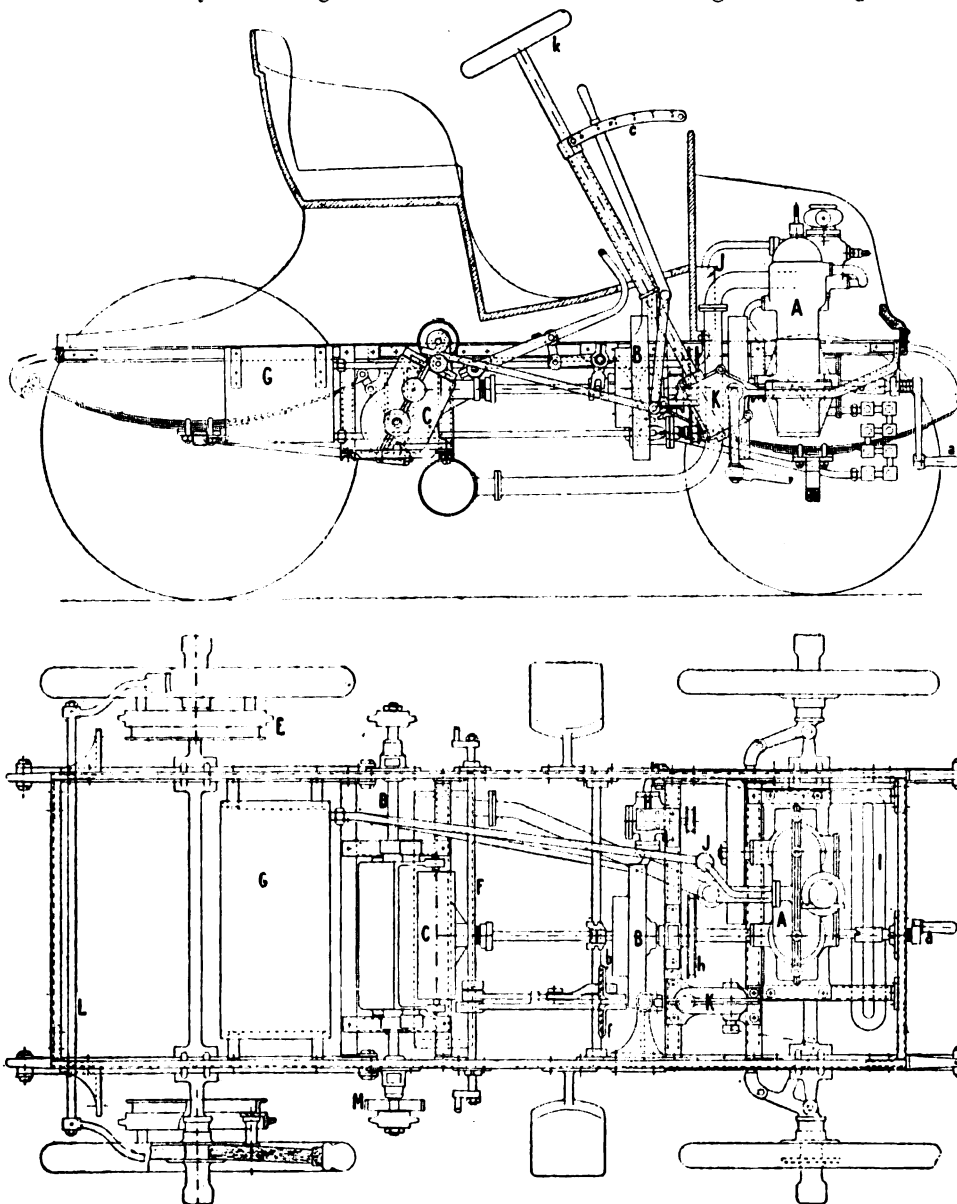
over a ton. The distance travelled was over fifty miles, and the petrol consumed 24 gallons. Considering the hilly nature of the district, and the heavy work the van has to do, the result is regarded as highly satisfactory.

MESSRS. HENRY CRAGG AND SONS have opened new premises in Church Street, Altrincham, on the high road from Manchester to Chester, Warrington, and Liverpool, in addition to their premises in Railway Street, Altrincham, situate on the low road from Manchester and Stockport to Chester, etc. Motor spirit, oils, greases, plugs, etc., can be obtained at both places, and accumulators charged at the Railway Street Depôt. Accommodation is available for half-a-dozen large cars, and the firm is prepared to undertake all kinds of repairs to motors and automobiles.

WE regret to learn from New York of the sudden death of Mr. W. Tousey, who went out to the United States some months ago to take up the position as Acting Sec-

retary of the Automobile Club. Mr. Tousey was well-known in motoring circles in this country, he having taken an active part in the 1,000-mile Trial last year.

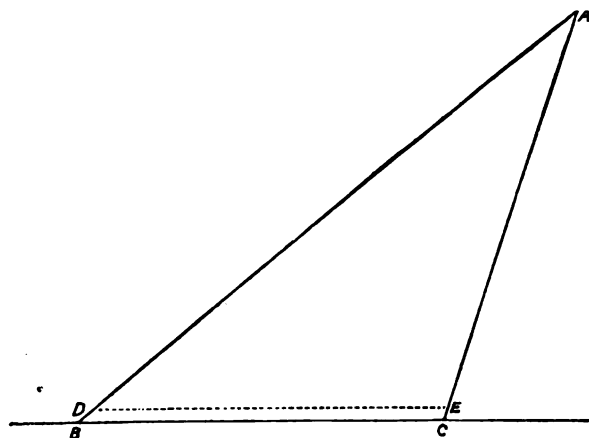
BARON THEODORE LIEBIG, one of the leading Austrian automobilists, is to be married this month. Immediately after the wedding he will take his bride on an extensive motor-car tour through Upper Italy, France, and Switzerland, returning through the Tyrol and Vienna to Reichenberg. The tour will extend over more than two thousand kilometres. The Baron's well-known racing carriage will be fitted up as a luggage waggon, while the bridal pair will ride in a light two-seat 10 h.p. automobile without a *mecanicien*.



ELEVATION AND PLAN OF TOURAND CAR.
(For description see issue of April 27th, 1901).

SPRAGS.

MR. W. R. PIDGEON, of Falmouth, and Mr. Bradley, members of the Automobile Club, write to the *Club Notes* stating that they have between them got round the sprag difficulty in a way that they think may be useful to many motorists who use their cars in hilly districts. Mr. Pidgeon had trouble with his car on the steep Cornish hills until they schemed a double sprag, which has so far never failed, and which goes in so quickly as to prevent any jerks being felt. The car had the ordinary sprag fitted from the first, but this was uncertain in its action, and frequently slid back over the smooth surface of these excellent roads. It could not be made shorter and steeper, or the car would have jumped it, so a second short sprag was hung from the same pivot as the long one and the two chained together low down close to the road. The short sprag hangs at about 60 deg. to the road and goes in instantly the car backs, and in doing so tightens the chain and drags in the long sprag which holds the car. Mr. Pidgeon adds that it is important to



AB = ordinary sprag, 35" long.
AC = short sprag, 23½" long.
DE = strong chain long enough to allow 2½" slack.
BC = ground.
A = pivot of both sprags, 22½" above ground.
Each sprag swings freely and independently on A.

allow about 2½ inches slack in the chain so as to enable the short sprag to get a good hold before it begins to drag in the longer one.

STORAGE OF PETROLEUM.

At Southwark Police Court, last week, before Mr. Paul Taylor, Messrs. D. Napier and Sons, motor-car manufacturers, of Vine-Street, York Road, S.E., were summoned by the London County Council, under the Petroleum Act, 1871, for keeping petroleum without a licence. Mr. Godfrey was for the London County Council; and Mr. Minton-Senhouse, barrister, defended. Mr. Godfrey stated that on April 3 Inspector Ross found a considerable quantity of petroleum on the defendants' premises, which Mr. Napier said was used to test the machines with. Mr. Minton-Senhouse submitted that the case came under the regulations of the Secretary of State made in pursuance of the Locomotives on Highways Act, 1896, and not under the Petroleum Acts. Section 5 of the former Act stated that the use of petroleum for the purposes of light locomotives should be subject to the regulations of the Secretary of State, notwithstanding the Petroleum Act, 1871. Mr. Godfrey contended that these regulations applied only to private individuals who possessed motor-cars, and not to trade premises. Mr. Minton-Senhouse said that they would also apply to this case, as the petroleum was not used in the manufacture of the machines, but only for the purpose of running them. Mr. Godfrey stated that a dozen similar manufacturers of motor-cars had been licensed under the Petroleum Acts. Mr. Minton-Senhouse. —Then I pity them. Mr. Godfrey. —This is the first time this question has been raised in Court. Mr. Paul Taylor said he agreed with Mr. Minton-Senhouse that the Petroleum Acts did not apply to this case. It was quite clear that before the Act of 1896 no legislation had taken place which contemplated the existence of these machines, and these regulations, under section 5 of the Locomotives on Highways Act, 1896, were made in consequence. The summons would be dismissed with £10 10s. costs, and he would be pleased to state a case if required.

Mr. Jesse W. Godfrey, from the solicitors' department of the London County Council, attended at Southwark Police Court on Monday, and asked the magistrate (Mr. Paul Taylor) to state a case for the High Court in regard to the dismissal of the above summons. The defence was that inasmuch as the petroleum was used only for testing motor-cars, it was expressly exempted from the requirements of the Petroleum Acts, and was subject only to regulations by the Home Secretary under the Light Locomotives Act of 1896. Mr. Paul Taylor held that the defence was established, and dismissed the summons. It being the first case of the kind, the County Council now desired to appeal, and the application for a case was granted.

FURIOUS DRIVING CASES.

MR. BUCKNALL, of Wickhurst Manor, near Sevenoaks, while driving his 25 h.p. Canstatt Daimler through Sevenoaks, on Wednesday, April 17th, was charged with driving furiously to the danger of lives and limbs of passengers on the highway. The summons came on for hearing on Friday, April 26th. The evidence given for the prosecution was by two police constables, who swore Mr. Bucknall was travelling over twenty-two miles an hour. They admitted that there was no traffic on the road. They swore, however, there were sixteen or twenty foot passengers who had to scamper out of the way; but further they admitted that no life was in danger or limb injured of any passenger on the highway. Upon this, Mr. Staplee Firth rested his defence, and while arguing the law point, the Chairman asked him if he thought it was worth his while occupying the time of the Court any further, as it was a case which had taken up a considerable time. Mr. Firth replied, and said that if they stopped the case and dismissed the charge on the ground that the evidence was insufficient, he would not object and that he thought they certainly had heard quite enough to justify them in doing this. This raised a scoffing remark by the chairman, which sufficiently shewed that they intended to convict in any case, whereupon Mr. Firth pointed out that it was not the duty of a magistrate to prejudge a case and come into court with the firm intention of convicting, and that it more than surprised him that any magistrate should suggest that a defendant should not go on with his defence but submit to a conviction, and he certainly should not do so on his client's behalf. The Bench retired to consider their decision and they ultimately dismissed the case, but refused to allow any costs to Mr. Bucknall.

THE Silesian Automobile Club is in course of formation at Breslau, Germany.

THE Automobile Tour of Italy commenced at Turin on Saturday last. There were altogether seventy-one entries, but of these only thirty-one started.

EIGHT entries have so far been received for the Paris-Bordeaux race, which is fixed for May 29th. The names include Levegh, Charron, and Girardot.

A MOTOR-CAR has been driven up Mount Vesuvius, the trip having just been made past the Observatory to the Cable Railway station 2,590 feet above the level of the sea, by Count and Countess Schonborn-Buchheim in his new 14 h.p. Benz phaeton.

LA SOCIÉTÉ FRANÇAISE D'AUTOMOBILES, of 20, Quai de Suresnes, Suresnes (Seine), have forwarded us an illustrated booklet on the La Doctoresse car. The booklet is in a very attractive form, the illustrations being exceptionally well produced.

THE staff of our French contemporary, *Le Chauffeur*, last week gave a banquet to Madame Lockert, the proprietress of that paper, to commemorate her election as *Officier d'Académie*. Madame Lockert has this week come over to London to participate in the Exhibition in the interests of her publication and a number of French firms. She is also responsible for the excellent collection of posters which will form one of the features of the Show.

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THE AUTOMOBILE MANUFACTURING Co., Ltd., 48/49, Long Acre, and North St., Manchester Sq., all cars in stock, Garage, Repairs.

THE Motor-Car Journal.

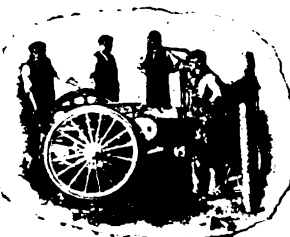
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COMMENTS.



AT the Agricultural Hall this week one great fact is being demonstrated beyond dispute—viz., that the automobile industry has settled down in this country and will soon rank among the recognised British trades. For not only have English makers got to work in real earnest, but the lively interest of the public has never found such an outlet as is provided by the Motor-Car Exhibition. Comparing Saturday last with the opening day of the previous display, one could readily be convinced that the public interest has trebled so far as motor-cars were concerned. Right away from the moment the turnstiles commenced revolving there has been a steady stream of visitors, and the scene inside the hall has been an animated one. Certainly the general concern in the Exhibition has been amply rewarded, for never before, in this country, has there been seen such a varied collection of automobiles as that which will not disperse till 10 o'clock on Saturday, the 11th inst.

Business Brisk.

WHILE the public have been pleased, the exhibitors have been delighted. On Monday reports of good sales were current throughout the Show, and it was evident that hundreds of people had postponed purchases till the Exhibition. The aristocracy have been well represented all the week, and from every part of the British Isles gentlemen have come not only to see the latest types of vehicles, but to buy the best they could afford. This is a tendency which non-exhibiting firms overlooked—to their own disadvantage and to the advantage of the exhibitors, who have made the most of such a favourable occasion.

King Edward and his Driver.

IN the course of an interesting article in the current number of *Cassell's Magazine* entitled "The King at Play," Mr. M. Randal Roberts remarks that His Majesty seated in his motor-car is a well-known figure on the roads about Sandringham. His Majesty does not drive himself, but he thoroughly understands the mechanism of a motor-car, and takes great pride in the prowess of Mr. Letzer, his driver. The author also tells the following story, which, if we remember rightly, has not been given before. Some time ago, when the King was driving with a couple of friends from Sandringham to Wolverton Station, a distance of about three miles, the King told his driver to show his guests just what a motor-car could do. The distance was covered in five minutes; and as the car arrived at the station gates the King exclaimed to his friends, "Now watch Letzer just miss the gate-posts and pull up," an order which Mr. Letzer fulfilled to the letter.

The Chinese Ambassador an Automobillist.

THE fact that the Chinese Ambassador rides from Langham Place to the Foreign Office in a motor-car of fine proportions and rather Oriental colour seems to rankle somewhat in the heart of certain individuals, who appear to think there is something undiplomatic about a carriage without horses, even when it is as resplendent as the yellow jacket of Oriental fame. As a matter of fact, his Excellency Sir Chichen Lofengluh has merely vindicated the reputation for unprogressiveness which his country enjoys as far as his capacity goes, and from the motor-car of its British representative China may learn a lesson to follow. No doubt, remarks the *Court Journal*, if this lead is generally followed by other Ambassadors, the courtyard of St. James's Palace will appear somewhat unusual upon the occasion of coming Levées.

The Life of a Motor-Car.

ONE of the questions most often put to the automobilist by the new convert who is about to purchase a car, especially if he contemplates using it for professional or business purposes, is rather apt to puzzle him, as it is difficult to give a direct answer to "How long will it last?" As, however, there is no reason why a piece of mechanism should not "last" for ever, with due replacements of worn parts, though such a reply would hardly satisfy the inquirer, the question should more properly take the form; "What is to be allowed for depreciation and repairs?" The usual figure of 15 per cent. may be taken as a fair estimate for the light car or substantial voiturette in careful hands, if about £1 per 1,000 miles be added as the cost of pneumatics; but the lighter and cheaper forms of vehicle will probably considerably exceed this, as will also really fast cars, the cost of upkeep rising rapidly with speeds over, say, a fifteen to eighteen miles average. The hard and constant use, too, that a doctor's practice involves may necessitate a rather higher figure; but, on the other hand, the more a car is worked the more marked is its economy, and in this latter case the saving over other means of transport would, where two horses are replaced, cover three times the amount mentioned. Where a vehicle is only used for pleasure purposes, however, a rational estimate of the above kind is almost impossible, and it can only be remarked that a car does not deteriorate with age, but only with use, while the fall in value due to "out-of-dateness" varies from accidental causes, and may generally be taken as less in the case of the productions of old-established firms than with newer ones.

Goggles.

WITH the increasing necessity for, and use of, optical protection of some kind when driving, it is worth drawing attention to the necessity for care in the choice of spectacles or goggles for this purpose, and to the fact that cheap glasses may prove very expensive to the eyesight. It is of as much importance that the glasses used in motor goggles should be carefully worked and free from striae and irregularities as in the case of ordinary spectacles, and the use of inferior ones for

THE GENERAL AUTOMOBILE AGENCY, D. Farman, Man., Carage open day and night, all cars in stock, 100-104, Long Acre, W.C.

hours together, more particularly as the eyes are under a more or less constant strain the whole time, cannot but be highly injurious. As, moreover, the glasses are often removed in full sunlight, it is on the whole preferable, unless perhaps in cases of weak eyesight, to have them of as pale a shade as possible, many of those sold being too dark, and more suitable for pathological than for healthy subjects.

Motor Fire Engines for Eccles.

ECCLES has not only followed in the footsteps of the London County Council but gone one step further, albeit with some misgiving. Its Town Council has adopted the report of the Watch Committee, who recommend that a motor-car be obtained for carrying firemen and fire extinguishing appliances, and that horses and manual be sold. Over cautious Councillors urged the advisability of retaining horses till motor traction had been tested.

Motor-Cars in Parliament.

A BILL, known as the Steam Engine and Boilers (Persons in Charge) Bill, and having for its object the granting of certificates to persons in charge of engines and boilers used in mines, but exempting engines or boilers used on railways, steamships, or for domestic and agricultural purposes, steam rollers and traction engines, introduced by Mr. Jacoby, has passed its second reading, been referred to a Select Committee, and will no doubt soon become law. The motorist need not, however, fear further persecution on that score, for, in reply to a question from Mr. Scott-Montagu, Mr. Jacoby stated that the promoters of the Bill were prepared to exclude motor-cars.

"Another Injustice to Ireland."

WHEN the County Surveyor for Meath informed the Council and road contractors of that county, a few days ago, that an "automobile excursion" would shortly traverse the roads under their charge *en route* from Dublin to Enniskillen, and courteously expressed the hope that their roads would be found in good condition, a violent outburst of motorphobia was the result. A member of the enlightened body proposed the imposition of a heavy tax on a "nuisance." Another referred to the proposed tourists as "an English crowd," and suggested that they should stop in their own country. "Not wanted," was the unanimous verdict. All the same, we venture to predict a very cordial welcome in Meath as elsewhere in Ireland. Pat is a warm-hearted fellow, and does not harbour an atom of that ill-feeling towards England, or disloyalty, displayed by the local jack in office, and some others elsewhere, who certainly ought to know better.

Birdlip Hill.

AT the last meeting of the Standing Committee of the Automobile Club the secretary drew attention to the recent motor-car accident on Birdlip Hill, and suggested that the Club should erect at the top of the hill a caution to drivers of motor-vehicles. The Standing Committee were of opinion that caution boards should be erected, one at the top and another half way down, and that they should draw attention to the length of the hill and the steepness of the incline. The settlement of details was referred to the Roads and Traffic Committee.

Alcohol as Motor Fuel.

AT the last meeting of the Alcohol Committee of the Automobile Club, Mr. Blount expressed the view that so far as experiments had yet been carried out there seemed to him to be little to expect from alcohol as a suitable motive power for motor-vehicles. Mr. Pretty related his experiences with regard to the use of alcohol in a recent trial which he had given

it. He drew attention to the advantages in connection with the use of alcohol in respect of its emitting no smell whatever, and of its more expansive explosion and consequently smoother running. It was ultimately, at the suggestion of the Chairman, decided to recommend that the terms of reference should be extended so as to enable the Committee to consider and report on the fundamental question whether the advantages attaching to the employment of alcohol as a substitute for petroleum in internal-combustion engines were such as to render it important in the interests of automobilism that existing impediments in the way of such use in this country should be removed.

Tied Up.

AN extraordinary accident happened to Colonel McGrath recently. He had unshipped a new car at Waterford, and was driving it home to Wexford, when suddenly his progress was stopped in a mysterious way. The steering went out of his control, and before he had time to check his pace the car had dashed into a telegraph pole by the roadside. The vehicle was badly damaged, but the Colonel and the driver fortunately escaped with a shaking. On examining the car he soon solved the mystery. The front wheels were found completely clogged up with telephone wire, some coils of which must have lain across the road. It was a portion of the wire used in laying a new telephone line near by, but how it got out on the highway remains a question which has yet to be solved.

The Motor Union.

AT the Agricultural Hall on Wednesday, the 8th inst., there was held a meeting of the members of the Automobile Club and other members of the Motor Union, to elect representatives for the Executive Committee of the Union. The gentlemen elected were, Professor Boys, Mr. Charles Cordingley, Colonel Crompton, Mr. H. Edmunds, Mr. G. Helmore, Colonel Holden, Mr. Manville, Mr. Phillips, Mr. Lyons Sampson, Mr. F. R. Simms, Mr. S. Spooner, Mr. H. Sturmeay, Mr. Thornycroft, jun., Mr. Critchley, Mr. Northey, and Mr. Milton.

The Width of Indianrubber Tires.

FOLLOWING on the correspondence between the Local Government Board and the Automobile Club with reference to the regulations of the L.G.B. which prescribe, for instance, that a vehicle weighing unladen over a ton and having indiarubber tires, shall be fitted with tires of not less than three inches in width, the Club Secretary suggested that the Inspectors of the Board should make a journey on a car weighing over a ton and having indiarubber tires of a width which, under present regulations, are illegal, being less than three inches in width, with a view to noting what was the effect of the tires on the road surface. The Motor Manufacturing Company, Ltd., kindly placed at the disposal of the Club a wagonette, and on Thursday last week Colonel Phipps Carey, Chief Engineering Inspector of the L.G.B., and Mr. G. W. Willcocks, Engineering Inspector of the L.G.B., three members of the War Office Committee on Mechanical Transport, the driver and ballast representing the weight of two persons, were driven in this car from the Club to Dashwood Hill and back again. The weight of the car unladen was over a ton, and the width of the indiarubber tires was 2½ in. The Club Secretary has ascertained that the weight of a London Road Car Company's omnibus, unladen, varies between 33cwt. and 40cwt., and the width of the tires (iron) at present used by the company is 2 in. The Inspectors of the Local Government Board had a striking illustration on Dashwood Hill of the damage done to the road surface by horse-drawn vehicles and motor-vehicles respectively. The motor-vehicles skinned down hill without doing more than raise the dust on the surface of the road. The Oxford and London coach descended with an enormous shoe on the back wheel which ploughed up the road surface, while its four horses were digging the toes of their iron shoes into the roadway.

Obstruction. An Important Decision.

MR. W. C. BERSEY was summoned at the Marlborough Street Police Court "for that he did by means of a motor-car wilfully cause an obstruction." The evidence for the prosecution was given by a police constable, who stated that at one o'clock on April 15th, he was in Piccadilly; that a motor-car was standing outside certain premises causing considerable obstruction, and that the motor-car was the property of the defendant. Mr. Staplee Firth, who defended, asked the officer if he had any other witness, and upon receiving a reply in the negative, Mr. Firth stated he should not cross-examine him. The magistrate asked Mr. Firth if he intended to call evidence for the defence. Mr. Firth stated that he did not propose to call evidence to defend a case that had never been made out; upon which the magistrate quickly intimated that he considered the case was made out. A long argument followed, and ultimately the magistrate stated that he would adjourn the case for seven days to consider the law and the arguments raised. This deliberation has taken place, and we are glad to say that the magistrate, Mr. Fenwick, has decided to dismiss the summons.



THE RECENT PARIS-ROUBAIX ALCOHOL MOTOR RACE.—THE CARS LEAVING THE A.C.F., PLACE DE LA CONCORDE, PARIS.
(Cliche de) [L'Avenir de l'Automobile.]

Mr. Firth argued that any carriage stopping at any place on the side of a public road when there is traffic must cause some obstruction, and that it was clear the legislation contemplated that motor-cars stopping on the roadside would cause obstruction; they therefore enacted the regulation to the effect that the light locomotive should not be left so as to cause any unnecessary obstruction, and although in the above case Mr. Bersey was accused of wilful obstruction under an old Statute of II. and III. Victoria, there was no evidence to prove wilful obstruction; in fact, there was no evidence at all of obstruction. The police-constable stated that Mr. Bersey was causing obstruction, instead of giving evidence of some act or acts done or omitted to be done, which in themselves were sufficient for the Court to find that obstruction had been caused. The result of this decision and the recent decision obtained by Mr. Firth from the City magistrates, "that a light locomotive need not be left in charge of a competent engineer," are steps in the right direction; the result of the two decisions being that a motor-car may be left at any place of call, and it need not be attended by any person at all; and moreover it is allowed to cause necessary obstruction, and the only cases in which the driver or owner will be held to be responsible will be those where they cause unnecessary or wilful obstruction.

High and Low Speed Petrol Motors.

MANUFACTURERS of voiturettes have long been troubled with their motors because, while one motor did not give sufficient power, it was very difficult to synchronise two so as to get a maximum efficiency. These troubles have now been partially overcome by the single-cylinder high-speed engine made to develop up to 6 h.p., the cylinder being provided with a water jacket. While high-speed engines have thus been increasing in power, however, other makers have been working in an opposite direction, and are producing relatively low-speed motors running at about 800 revolutions a minute. Of course, for a given power, these are heavier than the high-speed engines; but, on the other hand, they have the advantage of being more reliable and of giving less trouble. At present the majority of small motor-car builders in France are using high-speed motors because they can be obtained more easily and more cheaply, but it is quite possible that before very long the advantage of the low-speed engine will bring it into increasing employment on light cars, though, of course, the light and fast running motor will still be used on motor-cycles.



Automobilism in Egypt.

MOTORING has lately become quite a popular pastime in Cairo, where about twenty vehicles are already in use, in addition to several motor-tricycles and quadricycles. The Khedive is often to be seen in his De Dion voiturette, a car of the same make being used by Prince Aziz Bey Hassan. The roads in the district are, however, not very favourable for motor-vehicles, so that the prospect of automobile tours in Egypt is not very great. A motor-vehicle repair establishment and garage has lately been started in Cairo by a French engineer.

Motor-Cars in Australia.

THE suitability and cheapness of motor-cars for travelling over the rough roads of Australia have recently been demonstrated by a run from Warrnambool to Melbourne, a distance of 165 miles, in a day. The vehicle used was a 3½ h.p. De Dion-Bouton voiturette, with seating accommodation for three persons. The average rate of travelling was 17 miles an hour, the fastest riding being 22 miles an hour, and the whole time spent in the journey being just over nine hours and a half. The motor consumed five gallons of petrol and a quart of lubricating oil.

CONSUMPTION AND HILL-CLIMBING.

IMPORTANT TRIALS BY THE AUTOMOBILE CLUB.

DASHWOOD HILL was the scene of an extraordinary display of activity on Thursday, the 2nd inst., when the combined hill-climbing and consumption trials promoted by the Automobile Club were brought to a successful issue. The full scheme of the operations was published in our issue of last week, the only alteration in the programme being the substitution of seven ascents for six.

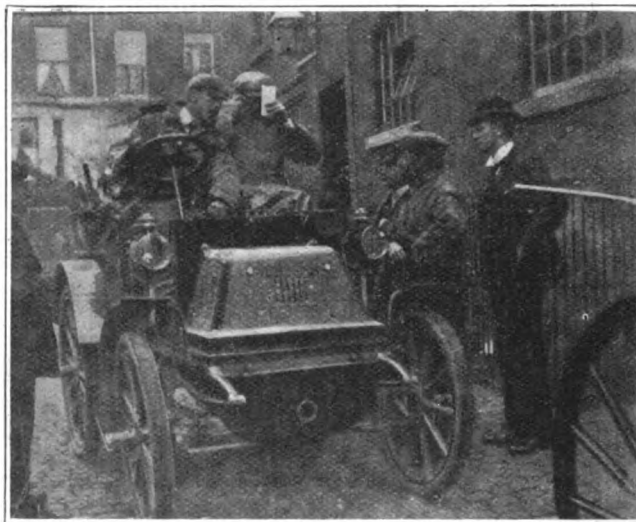
Mr. R. Horner Wyeth, Mr. W. H. Kitto, Mr. Edgar Scamell, Mr. A. Ledger, and Mr. E. de Wilton.

The following were the competing cars which assembled at the start, though Mr. J. R. Hargreave's 19 h.p. Daimler proceeded from Norwich to Dashwood Hill direct, and took part in the hill-climbing trial only:—

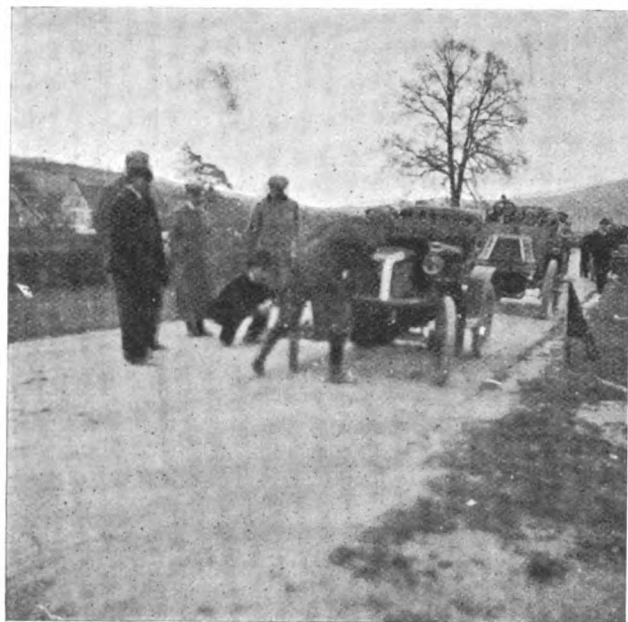
CAR.	OWNER.	CYLINDERS.	IGNITION.	OBSERVER.
24 h.p. Daimler	Hon. J. S. Montagu, M.P.	Four	Tube and electric	Mr. R. B. B. Bruce.
16 h.p. Napier	Mr. J. A. Holder	Four	Electric	Mr. C. L. Freeston.
8½ h.p. Decauville	Motor-Car Co.	Two	Electric	Mr. R. W. Buttemer.
7 h.p. New Orleans	New Orleans Motor Co.	Two	Electric	Mr. R. H. Wyeth.



THE 5 H.P. DECAUVILLE. MEASURING OFF PETROL.
Photo by j

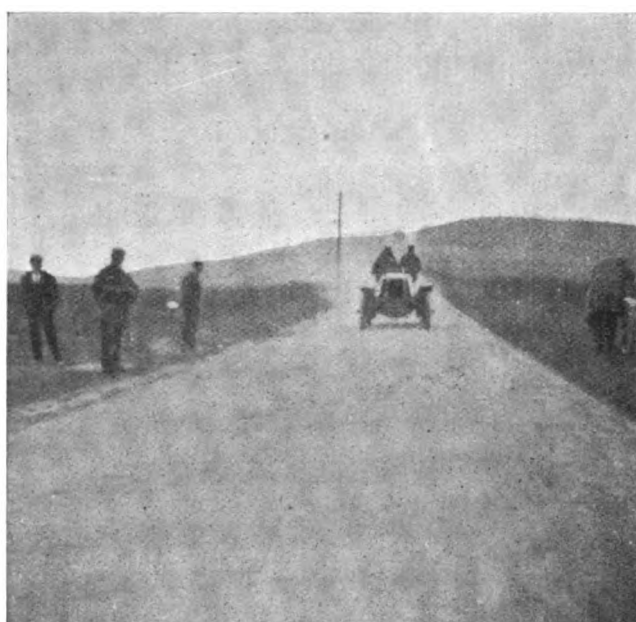


THE 6 H.P. DAIMLER. LORD KINGSBURGH CONSULTING HIS NOTES.
(Mr. R. W. Buttemer)



PREPARING FOR THE HILL CLIMB.
Photos by j

It was inevitable that the day's proceedings should open at a very early hour, and the competing cars and their observers assembled at the Norland Mews, Princes Road, Holland Park Avenue, by half-past eight. On behalf of the Technical and Trials Committee, Mr. T. B. Browne and Mr. Lyons Sampson supervised the arrangements for the emptying of the tanks, and the subsequent replenishing of each with a measured quantity which should suffice to carry the car to Dashwood Hill. There were also present as honorary observers the Lord Justice Clerk, Mr. R. B. B. Bruce, Mr. C. L. Freeston, Mr. R. W. Buttemer,



MR. J. R. HARGREAVE'S 19 H.P. DAIMLER COMING UP THE HILL.
(Mr. Percy Richardson.)

6 h.p. Daimler	Daimler Motor Co.	Two	Tube and electric	The Lord Justice Clerk.
5 h.p. Decauville	Motor-Car Co.	Two	Electric	Mr. W. H. Kitto.
5 h.p. Mayfair	Sports Motor-Car Co.	One	Electric	Mr. E. Scamell.
5 h.p. Wolseley	Wolseley Tool and Motor Co.	One	Electric	Mr. A. Ledger.
3 h.p. Ariel Quadricycle	Ariel Motor Co.	One	Electric	Mr. E. de Wilton.

As quickly as possible the cars were got away in turn, and, after being weighed at a neighbouring coal siding, they set off on the opening stage of the trials without returning to the milestone in Holland Park Avenue, as is usual in the quarterly hundred miles' trials. The fact that the road was up at Ealing,

and that a long détour had to be made from Acton Hill to Ealing Dean accounts for this departure from established practice.

Another innovation in the trials under notice was the promulgation of an insistent rule that very moderate speeds should be observed on the outward and home journey alike, and that, in fact, any car which occupied less than one hour and fifty minutes between the starting place and Dashwood Hill would be disqualified. It did not avail, moreover, to exceed this speed and indulge in stops, voluntary or involuntary; the actual running time was required to be 1h. 50min. or over. Naturally an embargo of this kind was somewhat irksome, particularly to a car of the calibre of Mr. John Scott Montagu's big Daimler, but the conditions were cheerfully endured, and none of the competitors were disqualified.

There was a narrow shave in this respect, it is true, for the New Orleans came in ten minutes too soon on the homeward journey, but on enquiry it was found that the driver had not been aware that he was breaking the regulation, and the disqualification was withdrawn. As will be seen later on, this car made the best performance, and it would have been a pity had its record been nullified by a breach of the regulations. Future competitors would do well to note, however, that the Club restrictions as to pace will be strictly enforced.

Two cars did not get through the initial non-stop run, namely, the 16 h.p. Napier and the Mayfair voiturette. The former did not leave the mews until a considerable time after the others, as Mr. Holder had been unable to affix a special tap to his petrol tank, and could only drain it out by disconnecting the feed pipe from the carburettor, a very lengthy process. When the car actually started, however, it was soon found that the pipe was partially choked, and could not feed the carburettor fast enough. All efforts to clear it there and then being ineffectual, the run was abandoned, and the car worked back by short stages to the starting place. The other car which had bad luck, the Mayfair, stopped for a heated axle at the end of nine miles, then, again, at the twelfth mile, and at the thirteenth abandoned the run owing to the same cause.

On arrival at Dashwood Hill it was found that Lt.-Col. H. C. L. Holden, Mr. R. E. Phillips, and the Club Secretary had driven over on Wednesday evening to High Wycombe in a 10 h.p. Delahaye lent by the Automobile Manufacturing Company. Mr. Worby Beaumont had driven down in Mr. Boulton's 12 h.p. Cannstatt Daimler, fitted with the Hall hydraulic gear, and Mr. H. J. Swindley, the honorary timekeeper, had ridden down per cycle. Mr. Hargreaves had utilised the night for his drive from Norwich, arriving in the small hours, while Mr. F. T. Bidlake, who also acted as an honorary timekeeper, had cycled across from New Barnet.

The consumption measurements having been only noted so far as the outward run was concerned, the tanks were again partially filled and the hill trials commenced. Mr. Phillips was the starter at the bottom and Mr. Swindley timed, while at the summit Mr. Johnson started and Mr. Bidlake timed, Lieut.-Colonel Holden and Mr. Worby Beaumont making themselves responsible for the fuel measurements. It need hardly be said that all the honorary officials concerned had a very lively time, and Messrs. Bidlake and Swindley had no less than fifty-six separate records each to make.

As for the public, they were afforded a free show of three hours' duration, and can hardly have felt cause to complain on the score of tediousness. To see Mr. Montagu's and Mr. Hargreave's cars romp up the hill and glide down again by gravity was a sight such as is rarely enjoyed, while the way in which the smaller cars breasted the hill was also something to remember. It may be pointed out that the hill is practically much steeper than the mere statement that it averages 1 in 14.3 would imply, as for a stretch of no less than 1,100 feet the average is 1 in 10.3, while there are bits that are steeper still.

An instructive incident while the trials were in progress was the arrival of the Oxford and London coach, which perforce descended with an enormous shoe on the back wheel, ploughing up the surface, while the sharp edges of twenty horse-shoes were further "improving" the roadway. All the cars, on the con-

trary, simply skimmed over the top on pneumatic tires. No doubt the object-lesson was not unnoticed by Colonel Phipps Carey and Mr. G. W. Willcocks, who attended on behalf of the Local Government Board. Three members of the War Office Committee on Mechanical Transport, it may be added, were also present.

Six of the seven vehicles which eventually left the scene of these interesting operations made a non-stop run back to the Norland Mews, where Messrs. Browne and Sampson were again in attendance and the final measurements were noted. The results have since been worked out by the Technical Committee, and are published in great detail in the *Automobile Club Notes and Notices*; but the salient particulars are included in the tabulation which we append herewith:—

TRIAL A (Outward Journey).												
Car.	Weight without passengers			Weight with passengers			Stops	Average Speed.	Consumption.	Passengers	Average weight.	
	T. C. Q. L.	T. C. Q. L.	T. C. Q. L.	T. C. Q. L.	T. C. Q. L.	T. C. Q. L.	1 of	Upto legal limit				
24 h.p. Daimler	13	2	0	17	2	0	28 m.		2.125 gall.	3	10st. 7lb.	
8½ h.p. Decauville	12	1	20	15	0	0	None	"	1.5 "	2	10st.	
7 h.p. New Orleans	10	3	7	15	1	21	None	"	1.03 "	3	12st. 3lb.	
6 h.p. Daimler	1	1	3	0	1	7	0	None	"	1.76 "	4	10st. 7lb.
5 h.p. Decauville	7	3	0	10	1	14	2½ m.	"	1.37 "	2	10st. 7lb.	
5 h.p. Wolsley	14	1	0	18	1	0	None	"	1.046 "	3	10st. 7lb.	
3 h.p. Ariel Quadricycle	4	3	0	7	2	0	None	"	.58 "	2	11st.	

TRIAL B (Homeward Journey).										
Car.	Stops.			Average Speed.			Consumption	Passengers	Av. wght.	
				Upto legal limit						
24 h.p. Daimler	None			Upto legal limit			1.77 gall.	3	10st. 7lb.	
8½ h.p. Decauville	None			"			1.52 "	2	10st.	
7 h.p. New Orleans	None			"			.875 "	3	12st. 3lb.	
6 h.p. Daimler	None			"			1.187 "	4	10st. 7lb.	
5 h.p. Decauville	19½ m. (puncture)			"			1.45 "	2	10st. 7lb.	
5 h.p. Wolsley	None			"			.97 "	3	10st. 7lb.	
3 h.p. Ariel Quad	None			"			.43 "	2	11st.	

TRIAL C. (Hill).										
Car.	Stops.			Average Speed.			Consumption	Passengers	Av. wght.	
				Upto legal limit						
24 h.p. Daimler	None			Upto legal limit			1 gal.	2	Not stated	
19 h.p. Daimler	None			do.			.875 "	2	do.	
8½ h.p. Decauville	One			8.36 m.p.h.			.55 "	2	10st.	
7 h.p. New Orleans	None			10.36 m.p.h.			.33 "	3	12st.	3lb.
6 h.p. Daimler	None			7.40 m.p.h.			.48 "	4	10st.	7lb.
5 h.p. Decauville	None			8.68 m.p.h.			.31 "	2	10st.	7lb.
5 h.p. Wolsley	Three			3.76 m.p.h.			.337 "	3	10st.	7lb.
3 h.p. Ariel Quad	None			10.88 m.p.h.			.173 "	2	11st.	

It should be added that the stop of the 8½ h.p. Decauville in trial C was due to the driver missing his gear when changing, and that the Wolsley stopped twice on the ascent owing to a choked fuel pipe. This ascent occupied 31 min. 51 sec. in all. The car also stopped on the third ascent, occupying 7 min. 28 sec. The five other ascents were made at an average speed of 9.84 miles per hour. The Ariel quadricycle received pedalling assistance over a total of about one-third of a mile.

THE latest fad in California is the hunting of wild cats by motor-cars. The sport is said to be a great success, the hounds keeping pace through bush and timber and "treecing" cat after cat, which the motorists brought down.

MR. CHARLES T. YERKES, a well-known American motorist, has entirely given up the use of horses and has now equipped his stable throughout with electric carriages. His garage contains an electric theatre bus, a hansom cab, brougham, stanhope and brake.

THERE is a splendid opening in Shanghai for a motor-car company to build, repair, and let out for hire motor-vehicles of all kinds, says the *North China Herald*. Shanghai possesses a great advantage over many other towns in that it is an absolutely flat city.

THE Minister for Commerce of Austria has promised the Austrian Automobile Club an exhibition prize, in the name of the Government, for the motor-car show to be held at Vienna next month. The recognition of the motor industry by the State should be a valuable help to the movement in that country.

A TEIGNMOUTH resident, and enthusiastic motorist, deplors the neglect which his part of the country has hitherto received at the wheels of the touring motor-car, and sends a well-illustrated local guide as evidence of the charming scenery to be met with in Devonshire. We agree with the enthusiast. Devonshire is a perfect paradise of rural scenery, has good roads, good hotel accommodation, a bracing atmosphere, and ought not to be neglected any longer.

FLOTSAM AND JETSAM.

BY "FLANEUR."

VERY far from impeccable are certain of the notices of the Show in the daily press. The *Standard*, for example, has informed its readers that "a great space has been kept clear in the centre of the floor, so that any car can be tried at once to the utmost of its capacity." The italics are mine. We are all prone to rhetorical flourishes at times, but rarely was a sentence ever rounded off with so amusing a disregard of fact. "Any car!" Fancy a racing Panhard getting on its "fourth" in that circumscribed arena; the hypothesis is indeed refreshing. Still, the *Standard* meant well, and may be forgiven.

HARDLY can the same be said of the portentous homily which the *Daily News* hurled at its readers' heads on Monday. One or two mistakes, more or less, in a purely surface Show report are immaterial, but when an opinionated writer, blankly ignorant of the whole subject, presumes to put himself upon a pedestal, from which he lectures those who have been engaged in the automobile industry from the start, the spectacle is more ludicrous than edifying. At the outset he comments sharply on the conditions of unreadiness at the opening, and contrasts this with the state of things which characterised the inauguration of the Salon du Cycle et de l'Automobile, at which, he informs us, he was present. I, too, "assisted" at that ceremony, and may readily endorse his description of the *mise en scène*. But I can also bring forth some further facts for his consideration, which will materially enlighten his appreciation of the matter.

THE Salon was ready—but why? At the last minute the opening was postponed for four days, simply because the exhibitors were hopelessly behindhand at the appointed time. I myself left home on the eve of the long-standing date, and should have crossed to Paris and wasted the best part of the week, but for a chance call at the Automobile Club, where the *Auto-Velo* just to hand contained the intimation of the postponement. And yet the exhibitors had had the use of the Grand Palais for a fortnight or more before the opening. But what was the case at the Agricultural Hall? The exhibitors had only two days in which to run up their stands and collect their vehicles from the railway termini, for Show follows Show with such rapidity that a full measure of preparation is seldom possible.

IN his review of the exhibits at the Show the *Daily News* critic heaps blunder upon blunder. "The most striking feature," he tells us, "is the growth of the voiturette, or small car for two people." This is the opposite of the truth. The most striking feature of the last six months is the introduction of the *voiture légère*, with *tonneau* body. Two-seated voiturettes have been at a discount for long enough, and the addition of a small spider seat has become all but general. To quote again:—"The point which must strike the visitor is the greater compactness of the French voiturettes, the unobtrusiveness of the engine, and the generally greater grace of construction." These are "points" rather than a point, but singly or trebly they are entirely inaccurate. Where is the English voiturette which is inferior to the French in the attributes referred to? Further on the question of cost is dealt with as "another direction in which the French have beaten us." Automobilists may well smile at this crowning absurdity. At every degree of engine-power the English car is cheaper than the French. The familiar 6 h.p. single-cylinder *tonneau* light cars, such as the Darracq, Gladiator, and others, all range from £250 upward; the M.M.C. "Miniature Panhard" is £235. The Parisian *chauffeur* was astounded at the introduction of the new light Panhard at the last Salon, as being vastly cheaper than any two-cylinder car on the market. Had the *Daily News* man asked as to its price on Saturday he would have been told "£420"; the Motor Manufacturing Company offer a similar type of car at £350; while the New Orleans 7 h.p. car, with two-cylinder motor, is only £242 with *tonneau* body, and, as results have shown, a marvellously efficient car at that.

On the subject of *tonneaux* the reporter once more goes astray.

Though he has told us that two-seated cars are the feature of the Show, he now observes that, "A growing tendency amongst the makers is to fit their light cars with a *tonneau* body (a *tonneau* body, be it explained, consists of the addition of two seats behind the driver)." A spider seat may hold two, or the rear seat of a double phaeton, but they are neither of them a *tonneau*, and probably a French dictionary would assist the *Daily News* man to a better understanding of the subject. Then he informs us that "the motor-cycle is now a very popular institution," which is precisely what it is not. Possibly the motor-bicycle may attain popularity in time, but that of the motor-tricycle has long been on the wane. Amid many further and amazing indiscretions the scribe flounders into a comparison of the motor-buses, erstwhile of Regent Street, with the 12 h.p. and 26 h.p. cars of to-day, and marks this as the progress of a year. My good sir, there were 12 h.p. cars in the 1,000 mile Trial, British built, and very different articles from the buses so infelicitously adduced as a comparison. "Is there a market for these huge cars?" he asks, referring to 12 h.p. and 26 h.p. carriages? The Daimler and Napier people could inform him speedily enough that these vehicles sell as fast as they can be built. But it is useless to pursue this topic further; but one may at least advise the *Daily News* to set its house in order before again dictating to the automobilist.

A CHOKED fuel pipe interfered with the success of two of the cars competing in the Automobile Club's consumption trial, putting one wholly out of the running and materially affecting the hill-climbing record of the other. A plausible explanation of the mishap is that the draining of the tanks until absolutely empty, before the start, might have brought out some sediment that had previously lain quiescent at the bottom. At the same time, this is not the only thing that might have happened. An automobilist of considerable experience has since described to me the way in which, for a period of no less three months, he was troubled more or less with a choked pipe, and sought in vain for the cause. Blowing a forced draught up the pipe with a pump would clear the obstruction for a time, but soon the annoyance would recur. At last he located the cause. The interior of the tube had scaled—through the action of the petrol, he surmises—and detached a tongue of metal, with one end free and the other fast. The flow of the petrol got behind the loose end and converted it into a sort of valve, with most inconvenient results. He only discovered the solution of the mystery by removing the pipe and cutting it up in sections.

So long as the flow of petrol is not absolutely stopped, by the way, there are humorous aspects in the situation, however inconvenient it be. The car comes to a dead stop, with that curious and unmistakable dying down of power that implies a failure in the supply of fuel. "Short of pressure!" someone ejaculates, and the contents of a two-gallon tin of petrol are poured into the tank. Then the engine is restarted, in goes the clutch, and off you go once more. Another two hundred yards, and then the same subsidence of power. In goes another tinful of petrol, and the process is renewed. Perhaps more petrol is tried, if the car is a big one, before the conclusion is arrived at that the feed is insufficient; then you open up the carburettor and find it nearly empty, the petrol trickling slowly in, instead of welling up rapidly. It may happen that you try unseating the joint between the pipe and the carburettor, wriggling your way beneath the car to do so, and when no fault is found in this direction the fact that the pipe is choked higher up is certain. If it does not occur to you that to remove the nozzle of a foot-pump, and place the rubber tube over the pipe would be useful, you try to move along on the homœopathic doses that the obstructed pipe condescends to play into the carburettor. It becomes a case of scientific traffic dodging, for the moment the car gives signs of stopping you have to steer it adroitly to the gutter, to keep clear of other vehicles. This may not always be easy, and then the ribaldry of bus-drivers, cabmen, and costers breaks loose with torrential force. It is interesting while it lasts, an experience of this kind, but it is not one of such pleasure unalloyed that you hanker for its recurrence.

CONTINENTAL NOTES.

BY "AUTOMAN."

A SERIOUS epidemic has suddenly attacked the police authorities of Brussels, and, to the amazement of the automobile world, they have proposed to the Council of the Commune to establish a special force, mounted on cycles, in order to "better repress the numerous breaches of the law committed daily by conductors of motor-cars, motor-cycles, and velocipedes which compromise more and more of the traffic on the public roads." It is notorious that horse accidents are very frequent, but then that has been going on for a century, and has become one of the customs of the country. It is also notorious that there are rarely any serious motor-car accidents, but when there is one every paper in the country writes about it until it is magnified and reflected into many accidents. The new step the police are about to take, however, proves conclusively that the numbering of motor-cars is quite useless and ineffective. Here is a country where every car carries by law a large number back and front, and yet the police want cycles to chase an offender; numbering, therefore, is of no value, and is discredited in the very country where it springs from.

On the 2nd, 3rd, and 4th of June there will be an automobile fête at Namur, commencing on the Sunday with a race from Namur to Bastogne and back, 111½ miles, in which four different classes of cars will take part, viz.: (1) Carriages from 6 to 10 h.p. with at least two passengers up; the first prize will be £16 and a gold medal, the second prize £8 and a silver medal, the third prize £4 and a silver medal, and the fourth prize £2 and a silver medal; (2) carriages of more than 10 h.p., for which there will be four similar money prizes and medals; (3) voiturettes, for which the first prize will be £12 and a gold medal, the second £6 and a silver medal, the third £4 and a silver medal, the fourth £2 and a silver medal; (4) motor-cycles, for which the first prize will be £8 and a gold medal, the second £4 and a silver medal, the third £3 and a silver medal, and the fourth and fifth £2 and a silver medal each. In the evening an Exhibition will be opened and a banquet and concert will be held. On the Monday there will be a hill-climbing trial and a driving competition, and on Tuesday the distribution of prizes. The entries close on May 15th, and should be sent to the President of the Namur Vélo, 21, Rue Saint Jacques, at Namur. The membership of one of the affiliated clubs is an essential condition in all the races except that for motor-cycles.

The A.C.F. have finally decided on the route for the Paris-Berlin touring competition which is to be run in connection with the great international race from Paris to Berlin. The following is the itinerary:—

June 22	From Paris to Reims...	99 miles.
" 23	" Reims to Luxembourg	130 "
" 24	" Luxembourg to Coblenz	115 "
" 25	" Coblenz to Frankfurt...	81 "
" 26	" Frankfurt to Eisenach	112 "
" 27	" Eisenach to Leipzig	108 "
" 28	" Leipzig to Potsdam	86 "
" 29	" Potsdam to Berlin	19 "

The participators will be divided into two classes, viz., those who wish to be controlled and those who do not wish to be controlled. The entrance fee, which should be forwarded to the A.C.F., amounts to £8 for the first category and £2 for the second category if paid on or before June 1st, £16 and £3 if paid after June 1st. The entries close on June 15th. Each carriage must be entered by a member of the affiliated clubs and run at his risk. The distances are very similar to those chosen last year for the English 1,000-Mile Trial, but there is no day's rest or day's exhibition between the runs.

The separation into two classes has been made to meet the objections raised by many private owners that they don't want to be hampered by conditions and compulsory stops, but wish to jog along easily and stop and start as they please, whilst on the

other hand the makers want records of the performances of their touring vehicles for trade purposes, so that the A.C.F. has tried to please everybody, and it is to be hoped that the result will not be like the miller and his ass of Lafontaine.

The Gordon-Bennett international race is fast approaching, and all sorts of rumours are afloat. I hear of one English firm who expect to be ready this week with a four-cylinder 30 to 35 h.p. car weighing 9½ cwt. Comparing the weight and horsepower and speed of the Mercedes with these figures, this little car, if well driven, should stand a good chance; but then the great problem is to find a driver whose experienced nerves can stand the strain of such high speeds, and yet who complies with the requirements of the competition as to membership of the Automobile Club. Rumour has it that Mr. Henri Farman may be the chosen driver of this car. The Napier 70 h.p. car has been making its strides, and I understand that the second speed is judged to give as much as the fourth speed of the 16 h.p. car of the same make. There are, however, clutch troubles to be got over yet, and weight will tell very much against its chances. A persistent rumour is going round automobile circles that the German Daimler will withdraw from the race, and leave Benz as the sole Teutonic representative. Panhard and Levassor are secretly preparing for the struggle, and judging from the fact that they passed the Mercedes in the Nice races, and would have won but for a breakdown, it appears to me that they stand the best chance of securing the International Cup.

For the Italian tour, thirty-one competitors started from Turin on April 27th, at 7 o'clock in the morning. The weather could not have been worse, and the torrents of rain damped the ardour of a great many of the seventy odd who had entered their names for the tour. Amongst the starters were five foreigners and two ladies, one from Venice and the other from Padua. The roads were in a very bad condition, and the rain still continued on the 28th, when the tour left Genoa for Spezzia.

Michelin's "Monday" in the *Auto-Velo* this week is short and sweet, and tells you how to inflate your inner tube, warning you that you must first free the little rubber valve, which is apt to stick to its seat, and must be loosened by pressing on the protruding stem. If you pump without first loosening your valve you will be likely to spoil your manometer, which is only constructed to measure 150 lbs. to the square inch, whereas a man can pump 225 lbs. to the square inch.

THE Antwerp Motor-Car Exhibition was opened by the Burgomaster of that city, on Saturday, April 20th, in the Zoological Gardens, and I had a turn round it before going off to the kilometre competition. It was not much of a show, and the only new thing that struck my attention was a car in course of construction by the Société Belgica, in which there is an attempt to solve three difficult problems, namely (1) Self-starting; (2) Efficient brake power; (3) Efficient cooling of the water surrounding the cylinder head. The Société Belgica are trying to achieve these results by calling in the aid of compressed air. The compressed air is produced whenever the brake is applied, that is to say, the friction of the brake is turned into useful work and made to produce compressed air, which is duly stored in a receptacle fitted for this purpose, and having a safety and escape valve, which lets the air out when the pressure reaches a certain point. Across the car is fitted a starting cylinder, connected with the fly-wheel of the crank-shaft by a wire rope and clutch. Whenever it is desired to start the car the compressed air is allowed to pass into this cylinder, and gives the required preliminary motion to the motor. In order to cool the water the escape of compressed air is allowed to pass through a coiled tube, which is placed in the water-tank. It is well known that the re-expansion of compressed air produces cold, so that the water-tank is being continually cooled by this means, and only a little water need be carried.

FRENCH motorists and Parisian gendarmes are waging bitter war against one another. The gendarmes are on the alert to catch the motorist scorching down the streets, and have resorted to all sorts of ingenious tricks to catch the offender. Under the name of "agent chronometreur," special policemen have been provided with first-class chronometers. These "specials" take up their position on the Bois de Boulogne at a "given spot," the distance from which to another point in view has been accurately measured by him. When a motorist speeds past the first point, the policeman times him to a second spot, and invariably nabs him for furious driving. In nine cases out of ten, it is stated, the motorist can only plead guilty when confronted by the unimpeachable evidence of his time taken on a first-class chronometer.

AN Automobile Club has been organised in connection with the Princeton University, Princeton, U.S.A.

THE Hawaiian Automobile Company, Limited, Honolulu, H.I., has inaugurated a public electric vehicle service, consisting of twenty-seven vehicles of various types.

THE municipal authorities of Hanover, Germany, have just appropriated £4,000 for three automobiles for the use of the city's fire department, provided that they prove satisfactory during a certain trial period.

THE *Sketch* considers that the problem of the streets will never be solved until motor-traction is introduced. "The horse is as much an anachronism as the elephant in a huge modern city such as London is."

A MOTOR omnibus service on the Lombard-Gerin system is about to be started between the railway station and town of Eberswalde, Germany. In this system the electric vehicles run on the road, but take the current, the same as trolley trams, from an overhead conductor.

THE arrangements for the Namur-Bastogne race, in which 4,000fr. in prizes will be distributed, are well in hand. It will take place June 2, and the itinerary will be: Jambes, Assens, Emptinne, Sinsin, Hogue, Marche, Champlon, Bastogne, a distance of 180 kilometres for the round trip.

THE Automobile Club of St. Petersburg was obliged by the intense cold and snow to put off the races which were to be held on February 25th. The start was to take place at Alexandrovskaya, between St. Petersburg and Warsaw, but the snow-drifts were so deep and the thermometer so much below zero that it was considered advisable to abandon the race until a later date.

AN automobile station has been established in Philadelphia by John Wanamaker. This station will be conducted in connection with the automobile department in Wanamaker's store. The feature of this station is an automobile driving school, where persons can receive instruction in the operation of motor-vehicles. Experienced operators have been engaged, and it will be one of the most complete places of its kind in the United States.

THE Automobile Club de Var held a race meeting at Draguignan, France, a few days ago. On the first day a series of kilometre races was run off with the following results:—Motor-cycles: 1, Marius, 1 min. 4 sec. Cars: 1, De Fabrègues, 1 min. 9 sec. Voiturettes: 1, Latil. The second day's event was a race from Draguignan to Cogolin and back, a distance of 127 miles. The winner was M. Chouchard on his Panhard racer, who, starting at 9.30, arrived back at 11.26 a.m.

AT a recent meeting of the Rhode Island Automobile Club Mr. Joseph P. Manton entertained the members with a description of a steam carriage which he built in 1866. This was the first horseless carriage seen in Providence, U.S.A., which, it is claimed, had a speed of fifteen miles an hour. It was not very practical, as sufficient fuel could not be carried to run it any great distance. The coal was carried under the seat. A large boiler was used and required considerable coal and water. The carriage was used for some months by Mr. Manton, but the great difficulty was the unsurmountable fuel arrangements which rendered the carriage unfit for everyday use.

CORRESPONDENCE.

SUGGESTIONS TO BEGINNERS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Having had considerable experience with machinery of various sorts, both in business and pleasure, and having bought a motor-car a year or so ago, I have lately added much to what had gone before. As I notice some of your readers frequently give their experience and views on motor-cars, perhaps you will be able to find space for mine. Motor-car builders, to make their vehicles a success, have to produce machines that can go both in rain and sunshine, winter and summer, over rough country roads, up hill and down, through mud and dust—and keep going. The machinery must be easy of access, so that it can be thoroughly cleaned when necessary, and examined to see if in perfect order; in case of breakage, broken parts must be easily replaced by any ordinary machinist. They must not be lightly built, but have sufficient weight to stand all kinds of rough usage they are sure to encounter in use. As, in my opinion, weight *versus* power cuts no figure, too much avoirdupois is better than too little. The machinery should be covered everywhere where grease or oil is used, or friction occurs, to exclude the dust and dirt; otherwise serious cutting cannot be avoided. All nuts and bolts should be locked to prevent losing them. All machines vibrate, in spite of manufacturers' statements to the contrary, and, in time, cause these movable parts to get out of place. Simplicity and directness of action of mechanical parts should be the object sought by all manufacturers, with a view to increased utility and durability. Builders should first test their vehicles under the most adverse conditions before putting them on the market. Those using electricity in the operation of their motors should be sure that the wiring will stand all kinds of weather without grounding, that it is protected from grease and petrol, and that as much as possible all tendency to break from vibration is provided against. A competent electrical authority's advice should be procured when planning this part of the machine, and not the cheapest wire and the easiest way be selected, as is so frequently the case now.

The would-be automobilist, before he makes the plunge and invests, should first realise that he knows nothing about a motor-car, and, before buying, should thoroughly investigate all the systems offered for sale; get all the experience he can from his friends who have already tried; learn of the defects and advantages of the vehicles that various individual manufacturers may produce, and then endeavour to find a car that combines the greatest number of good and the least number of objectionable points.

The would-be motorist must start carefully and thoroughly learn all parts of his machine before venturing too far away from "home and mother." He should know when he hears some new sound or squeak, and at once locate it, and be so thoroughly familiar with the outside and inside of his motor that he knows when it is not working right, and what is necessary to make it do so. This experience and knowledge cannot be acquired in a minute, and can only be gained by patience and study. Don't let any one touch the engine or other machinery in your car unless you know his knowledge is greater than your own. A motor-car will not run itself, and while it does not require to be fed, like a horse, it demands as careful grooming, and either the owner or experienced employes must do this.—Yours truly,

JAMES WILKINSON.

THE NESSELSDORF STEERING GEAR.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR.—In your issue of April 20th there appears a letter from the Nesselsdorfer Wagenbau-Fabriks-Gesellschaft, in which I am asked to give proof that my steering gear is identical with theirs. The different cases I have to adapt my gear to require, it may be, a slight difference in the design, and that represented as being the invention of our Austrian friends is one among a number of designs of mine. The proof, however, is to be definitely ascertained by a reference to my patent specifications. The

THE AUTOMOBILE MANUFACTURING Co., Ltd., 48/49, Long Acre, and North St., Manchester Sq., all cars in stock, Garage, Repairs.

British patent is dated May 11th, 1892, and the official number is 8,905; the German patent is dated April 15th, 1893, and the official number is 71,381.

The particular application of my invention is something that I have a right to control, I take it, and it is novel to me to have my statement doubted when it was backed up with proof that this gear had been fitted by me for steamships for eight years past. If your correspondents will be good enough to procure a copy of my specification from the Patent Office, and study the illustration set forth there, and also read the claim, they will soon see that my claim is too sound for any shadow of dispute. I offered my explanation to your readers previously in no hostile spirit, but merely to point out that the said invention was not new or novel, as I had held the patent rights since the date given above.

I trust this explanation will be satisfactory, as any other explanation would require the assistance of a British jury.—

Yours truly,

J. J. KERMODE.

THE MOTOR RACE AT BRIGHTON.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I see in your issue of April 27th Mr. R. Dennis writes to say that he won the five miles motor race at Brighton by 2½ laps. I beg to inform you that this is not the case, for, as a matter of fact, I won the first prize on a 1½ h.p. Werner bicycle, Mr. Dennis being disqualified. I may add that the objection was not lodged against him by me. He finished half a lap in front, not 2½ as Mr. Dennis states.—Yours truly,

T. H. TESSIER.

THE LOMBARD MOTOR-COOLING DEVICE.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—With reference to the motor-cooling device which was described in your issue of 20th April I am of the opinion from experiments which I made some three years ago that such a method of reducing the temperature of the cylinder is not very successful. The introduction of water into the cylinder of an internal combustion engine weakens the explosion of the charge, and in most cases prevents the charge taking fire at all. The presence of water vapour in the cylinder even in very small quantities is very detrimental to the economical working of the engine and is to be avoided as much as possible. The drier the cylinder the more rapid and perfect is the combustion with a corresponding increase in the power developed by the engine. I have no doubt that many of your readers have obtained similar results and I should be very pleased to hear from any on this interesting subject.—Yours truly,

RAYMOND WHITELEY.

TRICYCLE AND TRAILERS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—A correspondent signing himself "Indignant" has, like myself, been charged £2 2s. by the Inland Revenue for a tricycle and trailer. The Hampshire magistrates have decided that they are two carriages, and the tax is 15s. each. I have asked to be refunded for the two years overcharge that I have paid.—Yours truly,

HAMPSHIRE.

A SUGGESTED MOTOR-CAR SERVICE.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—“A Frequent Visitor” suggests an opening for a motor public service; and, without wishing to offer any opinion as to the route he mentions, I cannot help thinking that he would have done a greater service if he could have pointed out a really suitable car for public service. As one who has for two years been connected with the motor-car hiring business, I have been looking for such a car, but without success. The only type so far available commercially is the 6 h.p. Daimler. Now these vehicles at the most do not carry more than ten persons beyond the driver, and even at that are very heavily loaded on a hilly route; against this the ordinary two-horse omnibus carries twenty-four persons. These little vehicles are expected to earn wages for

driver and conductor and make up the very heavy charges for interest and depreciation on first cost, and at the same time show a profit over the horse-drawn vehicle; and when they fail to do so the blame is laid upon the makers of the cars, drivers, anyone and anything, the promoters owning ignorance of the question they try to solve. Those automobilists who have an open or latent objection to electric tramways should restrain their animosity until some practicable form of public service motor-car is upon the market, and in the meantime welcome any form of mechanical traction on the roads.—Yours faithfully,

FRANK SHEPPARD.

RACING CARS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Referring to the letter in your last issue from “Steam,” his letter loses a great deal of its interest from the fact that he assumes that the motor of a racing Panhard weighs 25½ cwt. It is the complete motor and motor-carriage that weighs this, according to Mr. Mayhew’s notes, although on this point the printers do not seem to have made it quite clear. The weight of the latest 70 h.p. Napier oil engine is 700lb., and I think no steam boiler and engine can come anywhere near this.—Yours truly,

S. F. EDGE.

THE GERMAN AUTOMOBILE INDUSTRY.

THE annual report of the Union of Berlin Merchants and Industrials states that the German automobile industry has gained in extent and importance during the past year, although the sales in the home market have not kept pace with the technical improvements. The public in Germany, while taking a constantly increasing interest in the substitution of mechanical for animal power in the transportation of goods and passengers, remains at the moment reticent as a buyer, and is confirmed in its position by the inferiority of the many ephemeral products with which the market is flooded. The result of this reticence is that a number of concerns which, on account of insufficient financial backing, were dependent upon an immediate disposal of their products were forced to suspend operations during the year. The larger automobile manufacturers, on the other hand, made a successful bid for business in foreign countries, especially in England and France. Orders from these countries are so important that the greater part of the production of the coming year is covered by them.

The extended trials which the German military authorities made with automobiles as dispatch vehicles during the last manoeuvres have proved very satisfactory. The experience thus far gained justifies the expectation that the crying need of the army of a substitution for horses by mechanical power, especially for the propulsion of the ever-growing “trains,” can be satisfied through the placing in commission of a large number of motor-vehicles. Nevertheless the change will probably only be made when another propulsive medium than petrol or steam can be made use of. The objection to petrol is that the raw material is not a domestic product in Germany and its regular supply is therefore not to be relied upon; against the application of steam it may be urged that too much of the carrying capacity of the vehicles would be required by the large quantities of fuel that would have to be carried and that the replenishing of the water supply would cause considerable delays. Everything seems to point to the conclusion that as long as no fundamental changes occur in the application of electricity to automobile purposes, alcohol is destined to gain the most in favour among the common sources of motive power. The practical difficulties which have so far been in the way of the application of ordinary denaturated alcohol may be regarded as practically overcome. Stationary and portable alcohol motors are already doing good service in industrial and trade establishments and have also been introduced with success in agricultural work. An increased use of alcohol would give an important agricultural industry a long desired market and at the same time a great impetus to the automobile industry itself.

THE GENERAL AUTOMOBILE AGENCY, D. Farman, Man., Garage open day and night, all cars in stock, 100-104, Long Acre, W.C.

JOTTINGS BY A WORLDLING.



IN reading Taine's splendid study of Shakespeare the other day I came across the following quotation from Esquirol, the great alienist:—"L'homme est une *machine* nerveuse, gouvernée par un tempérament, disposée aux hallucinations, emportée par des *passions* sans *frein*, déraisonnable par *essence*, mélange de l'animal et du poète, ayant le verve pour esprit, la sensibilité pour vertu, l'imagination pour *ressort* et guide, et conduite au hasard par les circonstances les plus déterminées et les plus complexes à la douleur, au crime, à la démence et à la mort." The italics are mine, and mark the words we use currently to-day in our automobile talk. It is curious to find so many of them in one sentence that is over a hundred years old.

I DROVE down on Sunday to lunch at the White Lion, Cobham, the proprietor of which most excellent inn is an ardent automobilist and the owner of an Ariel tricycle. On the way I saw a large Décauville going splendidly, several tricycles, three or four De Dion voituresses, a big Daimler with about sixteen very lively passengers, a Stanley steamer, a Darracq and a Benz in difficulties, and last, but not least, a racing Panhard, doing, *dure et auspice* Mark Mayhew, its twelve miles an hour without difficulty.

I STRONGLY advise people who want to see the finish of the Gordon-Bennett Cup to go out to Bordeaux by the General Steam Navigation Company's boat that leaves London at three o'clock on Saturday, the 25th inst. I am going that way myself because I know it to be most comfortable and very cheap. The best place to see the race from is on the road out from Angoulême towards Barbézieux.

OF course it is very nice to have a "real, live lord" in the motor-car industry, particularly when he is premier earl of England and Ireland and a thoroughly good sportsman to boot. But this is no excuse for a contemporary's talking of "His Grace of Shrewsbury and Talbot, whose ducal coronet graces (no pun intended) most of the London hansom cabs." Furthermore, I do not think there are many hansoms about to-day with the S. and T. monogram and the "eight pearls mounted on high golden rays."

IT is a perfectly shameful thing that we should have weather like this in May. I had arranged a short tour to start on Wednesday, but I woke up to see a yellowish fog and read in my paper terrible tales of snowstorms in Devonshire, the warmest part in England. It would not surprise me a bit if the Gordon-Bennett Cup race were run, like an historical Derby, in a snowstorm, and if the Bay were to be horribly rough.

SOMEBODY ought to suggest to Sir Thomas Lipton to have a land "Shamrock" built to challenge for the Cup next year. It ought to be built by Georges Richard, but, of course, that cannot be. I suppose the day will come when people will be as keen about our races as they are about any other sporting event; but it is not with us yet.

I WENT up to the Exhibition at the Agricultural Hall the other day and it seemed to me to be a success in every sense of the word. The trade must have benefited by it greatly if one may judge by the numbers of the right sort of visitors there, the majority of whom were on business intent. Most of the men I met seemed thoroughly pleased with the Show. Among those who told me that they intended to get cars immediately were Mr. Panmure Gordon, the Stock Exchange magnate; Mr. W. C. Taylor, of lawn-tennis fame; Mr. Charles Bois, who was there with his sister and Miss Saunders, Mr. Ernest Hill, Mr. Chadwick, Mr. Anderson, Captain Ernest de la Pature, who is still very lame, Mr. Eustace Williams, and Baron von Ruhl. Mr. C. N. Williamson and Captain Simpson are changing their Benzs for bigger cars.

I WAS very disappointed at not seeing any of the Gordon-Bennett cars at the Show, because, as my readers will have found out by now, I take an inordinate interest in racing. The questions I asked about them were not received with any enthusiasm by the representatives of the Motor Manufacturing and Motor Power Companies, who only gave me *non possumus* answers. In a round-about way I was "credibly informed" that the Motor Manufacturing Company car is a *voiture légère* of about 8 cwt., with four 5 h.p. English-made De Dion motors coupled. This certainly sounds like speed, but I should think the engine would be difficult to drive.

DRIVING into Windsor from Bagshot, the other day, nearly had a bad accident, owing to the fact that the Park gates were shut without any light to show that they barred the road. The way in which I had to slam on my brakes did my tires no good. This should be seen to at once; a lamp in the middle would cost very little money and practically no trouble.

MONSIEUR DE BREYNE, who happily got over his attack of scarlet fever very quickly, drove me down from the Exhibition to Walsingham House on his new *tonneau* double-cylinder Pieper. The little car went extremely well and, I should say, is fairly fast. At a reasonable price it should become very popular.

AN EARLY CANADIAN STEAM VEHICLE.

M R. CHARLES BAILLAIRGE, of Quebec, writes to the *Canadian Electrical News* describing a steam wagon he built in 1844. "While Trevethick's motor was a single engined one without a fly-wheel to get it over the "dead points" when it happened at an impediment in the roadway, my machine was a double cylindered one, whereby the cranks on the axle being at 90 degrees apart, the dead points were got over by one of the pistons being only half way on its travel, while the other was at the turning point and thus capable of exerting a force necessary to overcome any inequality in the paving or macadam. The twin engines were of the ordinary "working beam" type, with parallel bars at one end engaging the cross-head of the piston rod working in guides as usual, while as connecting rod at the opposite end of the oscillating or working beam engaged the crank on the axle or shaft of the vehicle on which the wheels of the automotor were mounted, a third wheel of less diameter, and capable of running in under the carriage to which it was attached by a bar turning on a swivel, was used to steer the wagon and turn it when required end for end in a radius of a few feet. This vehicle, as stated, I built in 1844, working at it after hours and on holidays, as I was then a pupil in the Quebec Seminary. I was helped at it by another boy, one Frederick Holt who lost his life at the fire of an old Quebec theatre. It may be foolish now to say so, but I was ever so much pleased when on letting steam into the cylinders for the first time, I found I had placed the eccentrics so exactly as not to require their position to be altered in the least to admit and cut off steam at the absolute moment of time necessary to prevent any loss of power whatever by back pressure. The two engines were built entirely by ourselves, including the drilling of every hole and the making of every screw, bolt and nut in the whole concern; while all we got done by outsiders were the boiler, a horizontal one, some two feet in diameter and three feet long, with a 15-inch fire flue within it, and the three wheels, which we had made by a regular wheelwright. The cylinders were, I believe, about three inches inside diameter or less, and some 8 or 9 inches long, the pair developing under steam at 30 lbs. pressure about 1 h.p. or more, which drove us along the road at from eight to nine miles per hour, the weight upon the driving or bearing wheels being hardly more than 1,200 to 1,500 lbs. all told, and with from two to four persons in the vehicle. The vehicle was nothing but a rectangular box-like construction of some four feet wide and six feet in length: the boiler being at the centre and the twin-beam engines on either side of it. The boiler was so raised that the crank-shaft and axle of the wagon rode beneath it from wheel to wheel. A standard with cross-head rose from the front wheel for steering."

THE Motor-Car Exhibition at the Agricultural Hall.



Photo by]

A GROUP OF CARS IN THE ARENA.

[Argent Archer.

DESPITE the counter attractions of Saturday last, the opening day of the annual exhibition of the Automobile Club at the Agricultural Hall, Islington, N., was a great success. There was no formal ceremony, but in a quiet, unostentatious way, to the accompaniment of the blowing of horns and the tinkling of bells, the turnstiles were set going, and during the whole of the week they have been revolving in a very pleasing way. Not only have the public attended; but that section of it which contemplates purchase as well as evinces curiosity has been present—a fact to gladden the hearts of exhibitors and give confidence to those firms that had not previously occupied space in the great Hall.

Entering from the Upper Street, Islington, the well-filled arcade prepares the visitor for a busy scene on entering the main building, on the ground floor of which hundreds of motor-cars stand stationary, while others career round the arena with all the vigour of the chariots of old. This year the Minor Hall to the right of the principal entrance is occupied, and there the Queen's Victrollette, a biograph reproduction of the 1,000 miles non-stop run at the Crystal Palace, and Madame Lockert's display of posters—a portion of which is in the Gallery—attract attention. For the first time, too, the exhibits have overflowed to the Gallery, and the several stands located there should be visited by all who go to the Hall during the remaining hours that the Exhibition will be open. It closes at 10 p.m. on Saturday, the 11th, and great crowds are expected all day.

As in previous years, the arena seems to present a scene of never-failing interest. Passengers are numerous, and there is none of that diffidence on the part of the public which was

observable on the first occasion that Mr. C. Cordingley afforded motorists such a fine chance of displaying their skill in driving and the power of control they possess over their cars. These exhibitions are overcoming prejudice and begetting confidence; and from confidence to custom is a step that the persuasive eloquence of exhibitors can overcome in the case of most people whose pockets have the necessary length.

Last week we suggested a few novelties, etc., that would be present, and the forecast has been amply fulfilled. In fact, the excellent efforts put forth by exhibitors to have their stands ready by noon on Saturday led to a completeness on the opening day which is not usually associated with such displays. Only a few firms were laggard in this respect, the great majority having exerted themselves to present a good appearance to the buyers who put in an early appearance. The representatives of the newspaper press were quickly astir on Saturday, and just as the early bird is said to catch the worm, so the exhibitors who were ready got the newspaper paragraph that is not without value in these days when advertising is necessary—even for such an innovation on our common roads as the motor-car.

Below we commence the publication of a complete record of the Exhibition in which are noted the new features and the prominent exhibits. There are no startling deviations from the practice of recent months, and probably the universal favour attained by the *tonneau* body is the most characteristic impression of the whole display. In a very few years the Exhibition will certainly attain international dimensions; it has already gained much of that character, as the representative exhibits from America, France, Germany, and Belgium testify.

Stand No. 1, which is one of the largest in the show, is that of the Motor Manufacturing Company, Limited, of Coventry, a range of cars and motors of exceptional interest being staged. To deal first with the cars, we find a Granville wagonette with detachable omnibus top of the type which is now being used for public service purposes in various parts of the country. The

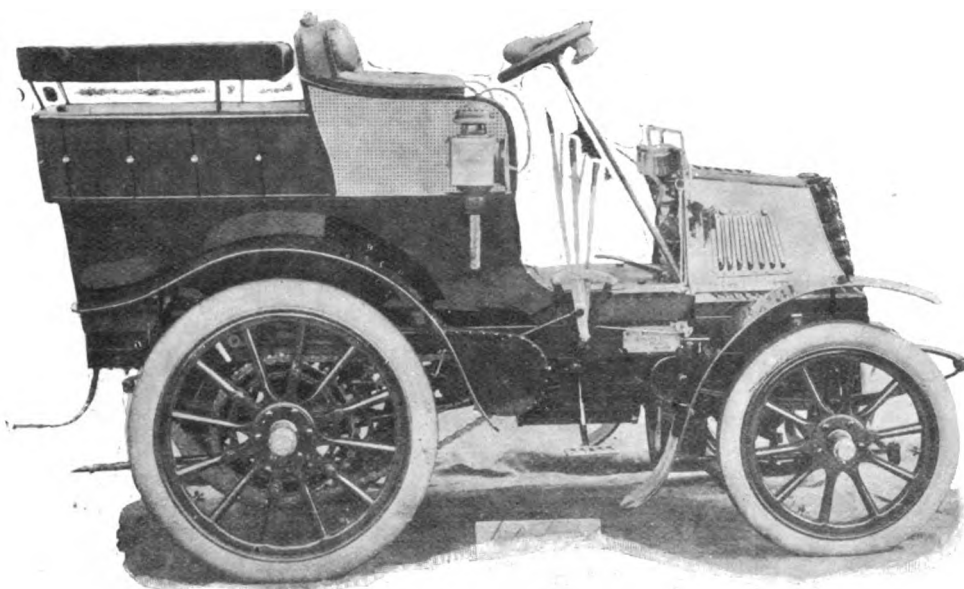


FIG. 1.—THE M.M.C. 7 H.P. TONNEAU.

general arrangement is similar to that in the well-known type of Panhard and Daimler cars, it being driven by a two-cylinder engine of 6 h.p., and having four speeds forward and reverse. Next we come to a 10 h.p. *tonneau* car, painted in heliotrope, dark red and black lines, it is adapted to seat five persons, an ingenious arrangement of combined rear door and seat being adopted. The artillery road wheels of this vehicle are shod with solid rubber tires. The engine, by the way, is of the gravity feed type, and is fitted with both tube and electric ignition. A very neat 7 h.p. *tonneau* next attracts attention, the body being comfortably upholstered and painted in dark green with light green lines. The frame of this vehicle is fitted with what is termed a "fitch plate," which is claimed to add to the elasticity and strength. The engine is of the pressure feed type, the change speed gear giving four speeds ahead and reverse. The 10 h.p. Marlborough phaeton to seat six is a car which is attracting considerable attention. Finished in yellow and black, the driver is protected by a glass screen in front. We now come to a neat *tonneau* having a body finished in red and black, and imitation basket work. This car, which is fitted with a 7 h.p. gravity feed engine, is adapted to seat six persons. It is fitted with a new style of motor bonnet, which lifts entirely away, and in the front of which the radiating coil is located. We give an illustration of this car in Fig. 1. A 10 h.p. phaeton, built for Mr. G. D. Newton, of St. Neots, a 6 h.p. nine-seated omnibus, and a 7 h.p. four-seated "Chariotee" are also to be seen; while there are also two 12 h.p. phaetons, one finished in dark green and gold, and one in heliotrope. The latter has several times been taken round the arena, where its quiet and smooth running has been very noticeable. The engine, which develops 15 h.p. on the brake, is fitted with both tube and electric ignition, foot pedal accelerator; Brampton roller chains transmit the power

to the rear road wheels, to which Clipper pneumatic tires are fitted. These cars can, it is claimed, attain a speed of forty miles per hour. The M.M.C. Miniature Panhard on exhibit has already been fully described in the *Journal*, so that it need only be said that it is driven by a $5\frac{1}{2}$ h.p. M.M.C. De Dion motor, and that it has three speeds forward and reverse (the gear wheels, by the way, being always in mesh). It may also be mentioned that the artillery road wheels are shod with Collier pneumatic tires. Perhaps the most interesting novelty on the stand is the light car (Fig. 2) fitted with a slow-speed vertical two-cylinder motor of 7 h.p. Outwardly the car resembles the Miniature Panhard; it has three speeds forward and reverse, controlled by two levers. The change speed gear wheels are always in mesh, the change of gear being obtained by means of a sliding feather. The body of the car takes the form of a comfortable *tonneau*, and either solid or pneumatic tires can be fitted to the road wheels, which are of the artillery type. The regulation inclined wheel steering is fitted, while ample brake power is provided. The car complete weighs about 12 cwt., and should meet with a large adoption. Reference must not be omitted to the Werner $1\frac{1}{4}$ h.p. motor-bicycle, which when not on the stand has been ridden round the arena by Mr. Leonard. To conclude our description of this stand, we may call attention to the big display of M.M.C.

petrol motors, ranging from a $2\frac{3}{4}$ h.p. air-cooled one of the De Dion type up to a 24 h.p. four-cylinder one of the Daimler type, which can develop up to 30 h.p.

"Anti-Rustine" is, as its name implies, a compound which defies the action of that arch enemy to all machinery—rust. Messrs. M. McCoy, of the Phoenix Works, Phoenix Place, London, W.C., make this their sole exhibit. It is also useful as a cleanser, leaving a bright polish when removed. Sold in tins at sixpence and a shilling it is certainly worth a trial, which will probably lead to its finding a permanent place on every well-turned out motor-car.

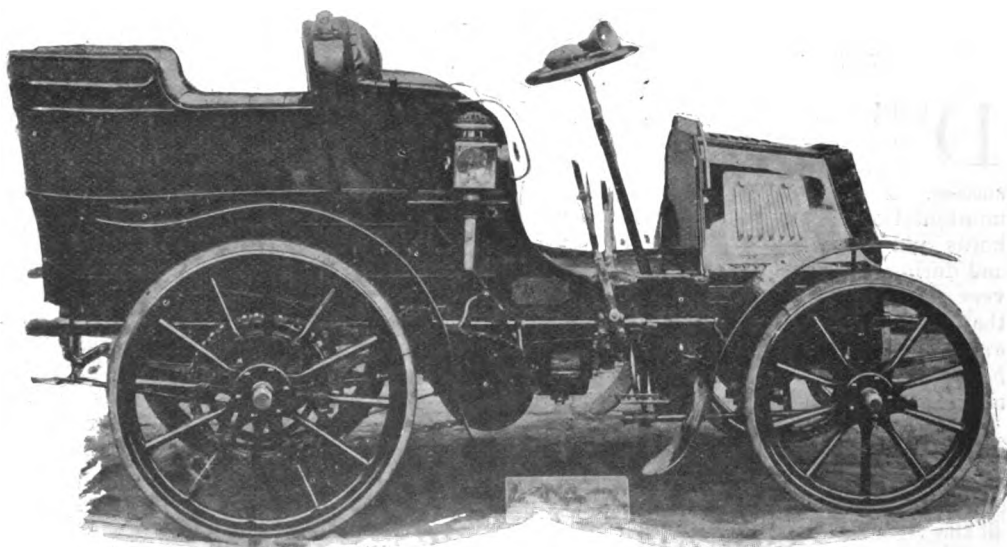


FIG. 2.—THE M.M.C. 7 H.P. LIGHT CAR.

Writing of cleansing reminds us of another preparation exhibited by the Zamol Syndicate, Limited, Palace Chambers, Westminster, S.W. "Zamol" is its name, and its chief use to the motorist will be the removal of stains from hands or clothing after cleaning his machine. It may also be used for many domestic purposes, and unlike many preparations for similar purposes, is free from offensive odour, a slight and refreshing

scent of ammonia being all the most delicate nose can detect. "Clenveet" is a duster exhibited by the same syndicate, which has the peculiar property of really removing dust, which adheres to, it in preference to depositing itself in some other and equally undesirable place.

An interesting stand is that of the Daimler Motor Company, Limited, of Coventry. An inspection of it, under

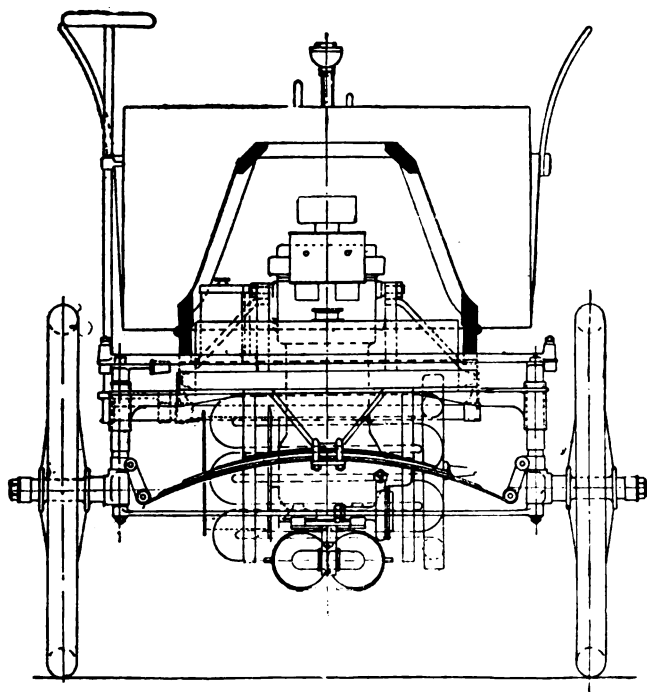


FIG. 3.—FRONT ELEVATION DAIMLER "KIMBERLEY" CAR.

the able guidance of Mr. P. Richardson, shows that considerable progress has been made by this company during the past year. At the last Show, if we remember rightly, the highest-powered car was a 12 h.p.; while this year the first vehicle to meet one's gaze is the Hon. J. Scott-Montagu's 25 b.h.p. four-cylinder car, with racing body, the owner having kindly lent it to the Daimler Company for the exhibition. This vehicle, which has covered a distance of one mile in but fifty-eight seconds, embodies all the latest improvements, including roller bearings and ball thrusts, and pressure lubrication to all parts except the road wheels. The engine is of the gravity feed type, and is fitted with both tube and electric ignition. The question of brake power has been well attended to, while Clipper pneumatic tires, of large diameter, render the vehicle exceedingly easy riding. Passing along we come to a couple of 18 h.p. Daimler *tonneau* and *tonneau phaeton* cars, one of which belongs to Mr. J. D. Siddeley, the managing director of the Clipper Tire Company, Limited. The Daimler *tonneau* has the rear seats arranged each in semicircular form, with arm-rests for the passengers, practically forming two comfortable arm-chairs. Both cars are driven by four-cylinder 18 h.p. Daimler motors, with the latest form of valves, and are fitted with both tube and electric ignition, capable of united or separate employment. In connection with the electric ignition, a double switch and spare accumulator are provided, so that should one battery give out the other can be switched on instantly. The Daimler forced lubrication, with sight feeds on dashboards, and roller bearings with ball thrust bearings, are other features of the cars. Inclined steering pillars with worm and wheel steering of the irreversible character are furnished. The cars have two brakes each—a double band brake on the countershaft, pedal applied, having a water-cooled drum, and powerful compensating band brakes on the sprocket rings, lever applied. Both vehicles run on artillery wheels shod with large section pneumatic tires. A feature of one of the 18 h.p. cars is the adjustable driving seat, the back of the seat being arranged so that it can be fixed at any position

within, of course, a certain range. The next vehicle is a 9 h.p. Marseilles *tonneau phaeton*, with front hood, and with ample and comfortable accommodation for four persons. This car is driven by a two-cylinder engine of 9 h.p., having both tube and electrical ignition. The radiator for cooling is carried in the front of the vehicle, while a new departure in the engine is the fitting of the inlet and exhaust valves on opposite sides of the cylinder heads. Foot and hand accelerators are fitted, as also the Daimler pressure lubrication, to all parts, except the road wheels. Clincher pneumatic tires are provided, while the carriage body, which was built in the Daimler Company's works, is comfortably upholstered. We next encounter a Coventry wagonette, capable of seating six comfortably, the vehicle being driven by a 6½ h.p. two-cylinder motor, having tube ignition, with fittings for electric if desired. The Daimler pressure lubrication is employed, the sight feed lubricators being placed on the dashboard. The gear, which is of the usual type, gives four forward and reverse speeds, of four, eight, twelve, and sixteen miles per hour. Hand and foot accelerators are fitted, and three brakes—one a band brake on the countershaft, pedal applied, and the others compensating band brakes acting on drums, forming part of the sprocket wheels, applied by side lever. The car is carried on artillery wood wheels shod with 2½ in. solid rubber tires. A new 6½ h.p. Daimler *tonneau phaeton*, to carry four, with its body by Messrs. Mulliner, in aluminium, has attracted considerable attention, and is driven by the latest pattern two-cylinder engine, having tube ignition and provision for fitting electric. The gear affords four speeds forward and reverse. Every detail has been taken care of in the fitting up of the body, little useful pockets being contrived in several places in the *tonneau*. The last car to call for notice is the 4½ h.p. Kimberley (Figs. 3 and 4), which has already been described in the *Journal*. It has a Ralli dogcart body, with seating capacity for two, and space beneath seats and at rear for baggage. The two-cylinder engine is located in front, as usual, and drives the rear axle by a single belt and spur gearing, three speeds up to eighteen miles per hour, and one reverse, being available. Steering is controlled by a hand wheel at the right of the driver. The car complete weighs about 12 cwt., and with cycle-type wheels and pneumatic tires makes a comfortable riding vehicle. Three brakes are available, while an arrangement is provided whereby the driving belt can be tightened when necessary without the driver having to descend from the car. Finally we may refer to a 6 h.p. Daimler launch engine, fitted with forward and reverse gear, suitable for a 36 ft. boat, and the now well-known full-size section of the Daimler engine and transmission gear, which latter, by the way, has seen 10,000 miles use.

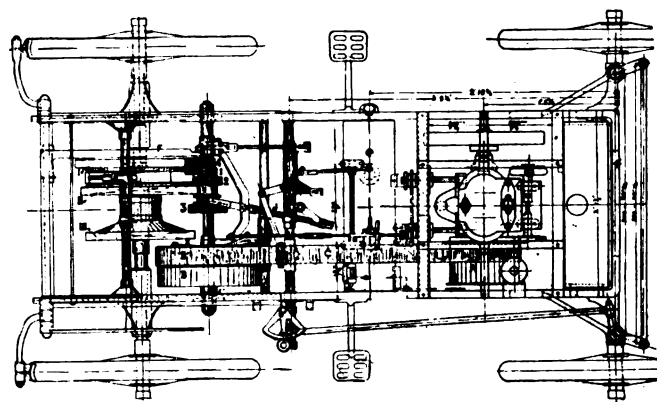


FIG. 4.—PLAN OF DAIMLER "KIMBERLEY" CAR.

Messrs. Friswell, Limited, of 48, Holborn Viaduct, London E.C., have a large exhibit. First we notice a Mors Petit Duc fitted with a 5 h.p. motor and *tonneau* body; a 4½ h.p. De Dion *tonneau*, with water tank under a bonnet in front; an ordinary 4½ h.p. De Dion voiturette, a light American two-seated steam-car known as the "Milwaukee," and a 7 h.p. two-cylinder

Peugeot car, the engine of which has both tube and electrical ignition. The Peugeot vehicles are now too well known in motoring circles to need a long description, but reference may be made to the huge 20 h.p. racing car of this type which Mr. Friswell has driven round the arena several times, and which, we are informed, has attained a speed, on French roads, of fifty-eight miles per hour. A new French light car to the English market

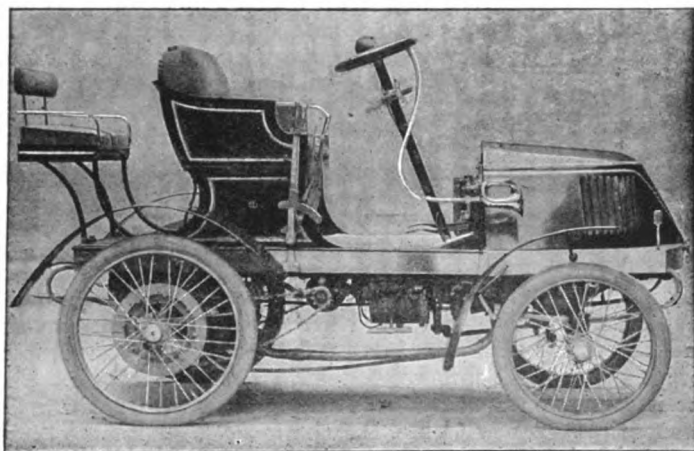


FIG. 5.—THE "TORPEDO" CAR.

is the Vehel, which is being introduced into this country under the name "Torpedo." The car (Fig. 5) is fitted with a *tonneau* body, but a three-seated spider or phaeton body can be fitted if necessary. The motor is of the vertical single-cylinder type with water-jacket and electrical ignition, capable of developing 6 h.p. Located under a bonnet in the fore part of the frame it drives the rear axle through a train of gears and duplicate sets of chains and chain wheels in a way very similar to that adopted in the Panhard cars. Three speeds forward and one reverse are provided, the change of speed being controlled by a hand lever at the side. The crankshaft and the variable gear run in oil-containing cases; the engine is provided with a governor, in conjunction with which is an "accelerator" operated by a pedal. Steering is controlled by an inclined hand wheel, while both hand and foot brakes are provided. The water circulation is maintained by a pump and radiator, a feature being the provision in front of the dashboard of a gauge glass, by means of which the driver can tell at a glance whether the pump is working; while another noticeable point is the neat way in which the "taps" controlling the electric ignition and the carburettor are grouped around the steering column. The weight complete is given as below 9 cwt. One of the "Vehel" cars with four persons up is said to have made the journey between Paris and Orleans in four hours.

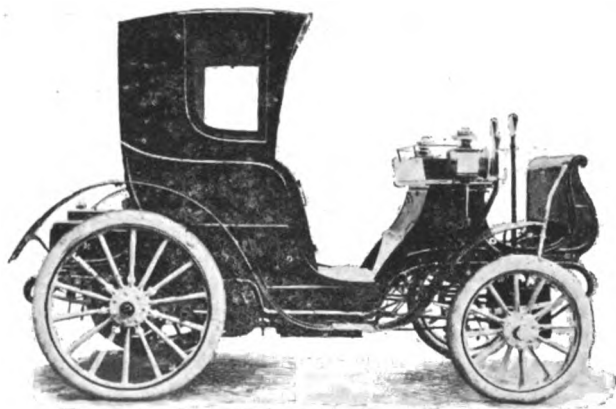


FIG. 6.—THE PEUGEOT 8 H.P. HANSOM CAB.

Well located along one side of the Minor Hall is the stand of the British Automobile Commercial Syndicate, Limited, 97-98, Long Acre, W.C. Here no attempt has been made to introduce new cars, but the company has restricted its exhibit to some of the best-known vehicles in which it deals; the central

carriage being a 12 h.p. Panhard et Levassor phaeton, fitted with tube and electric ignition, the whole surmounted with a canopy. This has been sold to the Earl of Shrewsbury and Talbot, who during the fortnight preceding the exhibition travelled more than 900 miles on the vehicle without any break-



FIG. 7.—THE BROWN MOTOR-COUPÉ.

downs whatsoever. A Peugeot hansom cab of striking appearance is another attractive exhibit. The motor is of 8 h.p., and the illustration (Fig. 6) will enable readers to readily identify the vehicle when it is seen on the streets. A 16 h.p. Panhard with *tonneau* body, a 5 h.p. De Dion-Bouton voiturette of the *vis-a-vis* type, a 5 h.p. De Dion voiturette with a "Mylord" body, and a 4½ h.p. De Dion car complete an exhibit which represents some of the best French workmanship. The British Automobile Commercial Syndicate, Limited, has a complete repair shop to deal with automobiles, and at its *garage* is able to stable and store cars with every convenience.

The leading exhibit on the stands of Messrs. Brown Bros., Limited, Great Eastern Street, London, E.C., is the Brown petrol light cars. The motor and mechanism are mounted on independent frames, so that any type of carriage body can be fitted—*tonneau*, spider, phaeton, two-seated, etc. An attractive little vehicle is the one fitted with closed coupé body (Fig. 7), with spider seat at the rear. The inclined steering wheel and control levers are all inside the coupé, the driver, although covered, having an uninterrupted view. In fine weather the door and cover can be removed, converting the car into an open spider. The motive power in the cars on view is supplied by a 6½ h.p. Aster water-cooled motor, but a 4½ h.p. De Dion can be had if desired. Electrical ignition is provided, while there are three speeds forward and a reverse motion, the transmission being much on

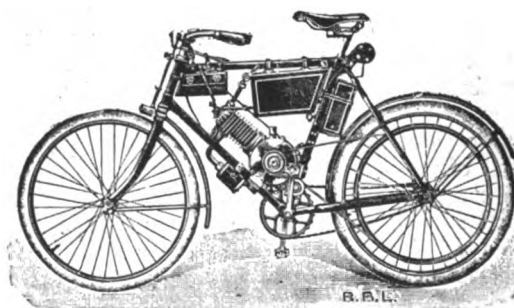


FIG. 8.—THE BROWN MOTOR-BICYCLE.

the lines of that adopted in the Renault and Darracq light cars, that is to say, the power is transmitted direct to the rear live axle from the variable speed gear box through a universal-jointed longitudinal shaft and bevel gearing. Three brakes are provided, while the wooden road wheels

are shod with Clipper-Michelin pneumatic tires. Messrs. Brown Bros. have lately taken up the agency for the Locomobile, and a couple of these well-known steam vehicles are to be seen on their stand. We now come to another novelty, the Brown motor-bicycle. The machine itself is built up of B.S.A. parts and has a specially strengthened head and duplex



FIG. 9.—THE NEW ORLEANS LIGHT CARRIAGE (GEAR-DRIVEN).

front forks—not shown in Fig. 8. The engine, a small air-cooled petrol motor developing $1\frac{1}{2}$ h.p., is, as will be seen, supported on the top of the lower cross tube of the frame, the crank chamber being at the bottom bracket. Messrs. Brown claim that by placing the engine in this position the frame is really strengthened than otherwise, the whole being exceedingly rigid. A combined petrol tank and surface carburettor is employed, this having a capacity sufficient for a run of eighty miles. The ignition is electrical, by coil and accumulators, a switch in one of the grips of the handle bar breaking the circuit at will. The power of the engine is conveyed to the rear wheel by a strap working on light pulleys, a small adjustable pulley being provided by means of which the tension of the driving belt can be regulated. The engine is started by pedalling the machine, a free-wheel clutch in the rear hub permitting the rider to cease pedalling as soon as the motor is in operation. The machine was examined and was fitted with a Bowden rim-brake to the rear wheel, but we understand that a brake acting on the front wheel will also be provided. The machine, which weighs complete 75 lbs., can attain a speed of thirty miles per hour on good roads. Messrs. Brown Bros. inform us that in addition to supplying motor-bicycles complete they are arranging to supply the motor and its fittings to cycle makers, so that the latter may furnish motor-bicycles to order. In addition to the foregoing Messrs. Brown Bros. made a display of motor-tricycles and quadricycles, trailing cars, De Dion motors, motor-car chains and chain wheels, horns, bells, lamps, and accessories of every kind for automobilists and motor-vehicle builders. Among the latter we may specially mention a new three-speed gear and the BB induction coil, which has a brass case instead of one of vulcanite, the change being claimed to overcome the danger of breakage and of short circuiting.

We have been greatly impressed during the week with the quiet running of the New Orleans voiturette exhibited by the New Orleans Motor Co., Ltd., of Twickenham. This is another car which has been illustrated and described in these columns, so that but a brief description will suffice at the present time. The motor is a single-cylinder one of $3\frac{1}{2}$ h.p., with electric ignition, and cooled by means of a fan driven from the periphery of the flywheel. The power is transmitted from the motor-shaft to the countershaft by a crossed belt. On the countershaft are three wood pulleys, that on the left hand side being the fast speed, the centre the loose, and that on the right hand the slow-speed pulley. The last named is carried on the countershaft and the fast-speed pulley on a sleeve, upon which the loose pulley runs. The two speeds are obtained by spur and pinion gear wheels, which are always in mesh. The car, which is fitted with two brakes, is provided with a simple and ingenious method of taking up the slack of the belt by means of a lever placed conveniently in front of the driver. A very useful improvement is to be found in a new form of striking gear, which enables the driver to stop the car by using a pedal the same as on the Panhard and Daimler.

Of the belt-driven cars, three are shown—a two-seated one, a two-seated vehicle with lengthened wheel base, and a three-seated car. Considerable interest is being shown in the New Orleans gear-driven light car, which made its appearance at Easter, and which has been alluded to in these columns. The vehicle, of which we give an illustration in Fig. 9, is driven by a 7 h.p. two-cylinder water-cooled engine, located in the fore part of the frame. The whole of the moving parts are

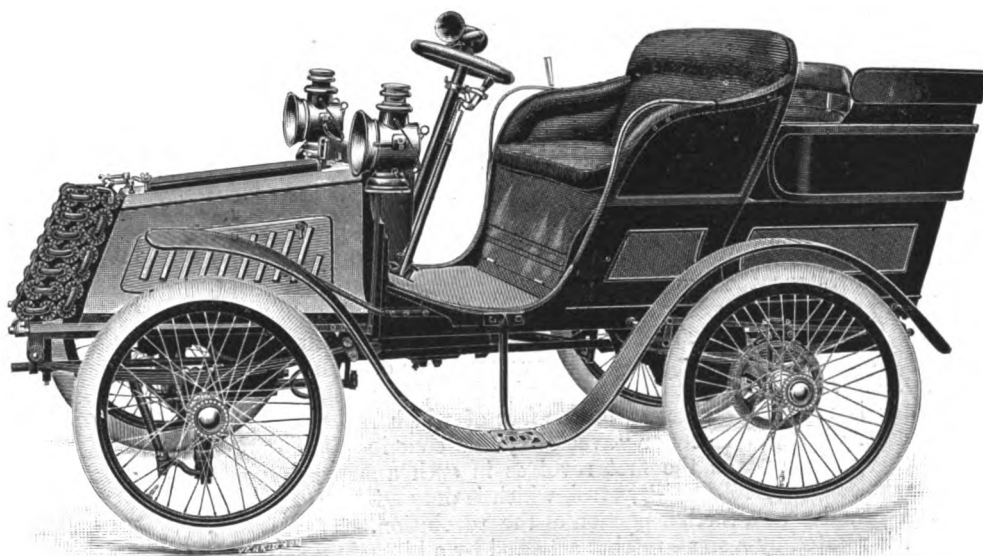


FIG. 10.—THE HUMBER CAR (see page 169).

entirely cased in and run in oil. The transmission from the motor is by means of a live shaft through a special clutch and change speed gear, giving three speeds forward and one reverse, direct longitudinal shaft and bevel gearing to the rear axle. Two brakes are fitted, one acting on main shaft and a band brake acting in both directions on wheels.

A good deal has been heard during the past few months of the Gobron-Brillié motor-cars by reason of the fact that the engines with which they are fitted are claimed to be not only able to work without alteration with either petroleum spirit or alcohol, but also that they are practically free from vibration. It is not, therefore, surprising that the stand of Messrs. Botwoods, of Woodbridge Road, Ipswich, who are introducing these cars into this country under the name "Teras," should be receiving great attention at the hands of visitors to the show. There are a number of special features in the Gobron-Brillié cars, but as these have been illustrated and described in detail in the *Motor-Car Journal* a brief résumé is only necessary at the present time. Of the large type of cars Messrs. Botwood have brought two to the Show—a 12 h.p. char-a-banc and a six-seated 12 h.p. wagonette. To enable visitors to inspect the details they have wisely included in their exhibits a complete *chassis* without body (Fig. 12), in which the motor and mechanism can be readily inspected, and as the difference between the two cars above referred to is only one of carriage-builders' work—which, by the way, appears to be well carried out—

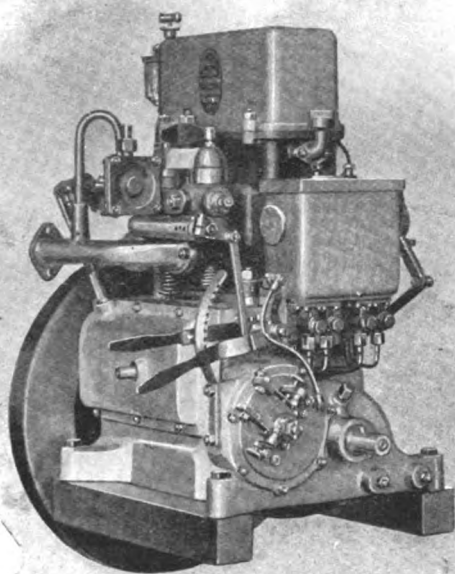


FIG. 11. THE "TERAS" MOTOR.

the following particulars may be taken as applying to both vehicles. The engine (Fig. 11), which is located at the rear of the frame, is of the vertical type; while there are only two cylinders there are four pistons, the explosions taking place between them. The piston rods of the upper pair are attached to a cross-head, which in turn are connected by side levers to the crankshaft below, the arrangement being claimed to overcome the difficulty of vibration. Electrical ignition is adopted, while the ordinary carburettor is replaced by a cone, on the face of which are cut out a number of small buckets or "aveoles"; this cone is seated into another cone in which the first revolves in such a manner that the buckets are filled with petrol, which is drawn into the explosion chamber at a further portion of the revolution. This measurer is rotated by a small ratchet actuated by a hit-and-miss lever on the governor shaft, in such a manner that absolutely no more petrol is consumed than the exact quantity required. A governor, operated by a small handle, is also provided, regulating not only the air supply and advance of electric spark, but also controlling the supply of the petrol through the positive feed. All the working parts of the motor are securely inclosed in an aluminium dust-proof box. The speed of the motor may be regulated by the aforementioned handle on the steering pillar to any speed between 250 and 1,300 revolutions per minute.

The cylinders are water-cooled, a pump and radiator being fitted. The inlet and exhaust valves are situated one above the other, and by removing a single bolt the two pairs of valves can be quickly taken out. Three speeds and a reverse motion are provided. A large spur-wheel on the engine shaft gears with a pinion on a countershaft, which carries, in an oil-containing box, a train of

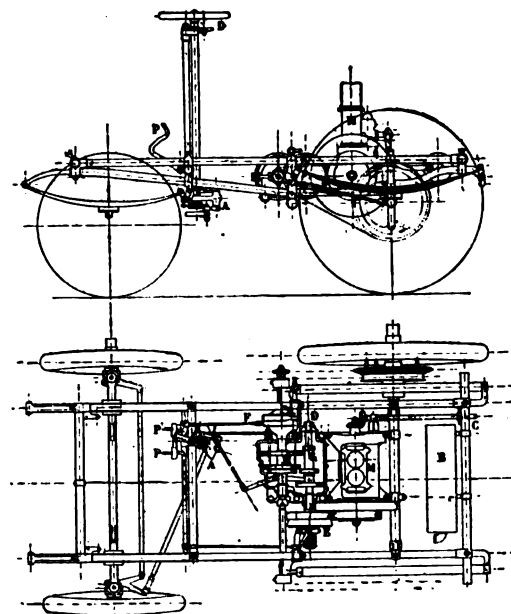


FIG. 12. ELEVATION AND PLAN OF "TERAS" 12 H.P. FRAME.

spur wheels, any one of which can be brought into gear with corresponding wheels on the parallel differential shaft, from which two chains transmit the power to the rear road wheels. The reverse motion is obtained by means of a small pinion which can be interposed between the two gears giving the low speed. The gears are generally calculated for speeds of thirty, eighteen, or eight miles per hour, with the motor making one thousand revolutions, but, owing to the control that the driver has over the governor, any intermediate speed can be obtained. There is a powerful brake on the differential shaft operated by a pedal. There are also two powerful double-acting band brakes on the hubs of the rear road wheels actuated by a lever at the right-hand side of the driver. These, however, are seldom used except in case of emergency or when the car is left standing on a hill. The usual sprag for use when ascending very steep inclines is also provided. Steering is controlled by a horizontal hand wheel; the car is practically self-steering, for the hands may—although, in our opinion, this is not desirable—be removed from the steering wheel while the car is running and it will steer straight ahead, while in turning corners the front wheels will automatically

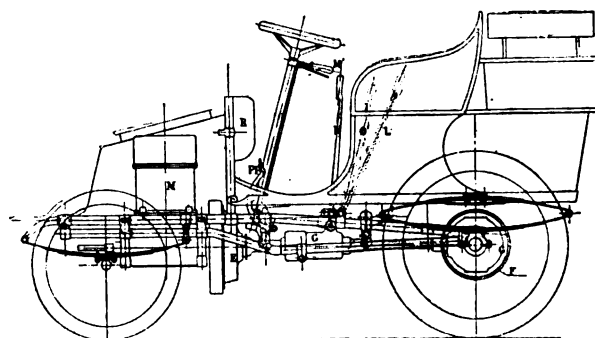


FIG. 13. THE "TERAS" 8 H.P. DUC-TONNEAU.

come back to the straight. The steering, moreover, is geared down on a new principle, which does away with any fatigue which might be experienced when driving on a rough road. The driver has either under his hand or foot all the levers to regulate the driving and control of the carriage. Immediately under the steering wheel are situated three little handles, one for

changing the gear, one for reverse movement, the other controlling the electric ignition, air and petrol supply; while on the right hand side of the car is the lever of the emergency brakes. Under the left foot is the pedal working the clutch, under the right foot the pedal working the brake. The body is fastened to the frame by six bolts, which can be undone in a few minutes, and the body of the carriage changed if desired. The frame is constructed entirely of steel tubes on a triangulated principle,

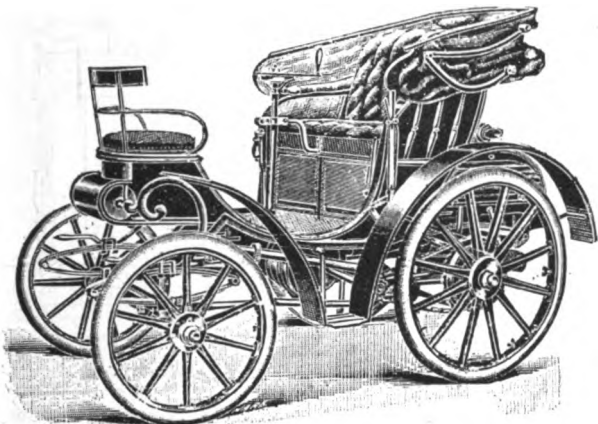


FIG. 14.—THE "DIANA" CAR.

giving great strength and rigidity. The road wheels are of the artillery type, shod with pneumatic or solid rubber tires, at the desire of the purchaser. The petrol tank is located under the seat and has a capacity sufficient for 100 miles; the water tank, which holds seven gallons, is placed in the front of the frame. Very little water is, however, used, Messrs. Botwood informing us that after a run of 500 miles it was found that only four pints of water had been used. To meet the demand for a low-built light car the firm have also introduced a 8 h.p. *Duc tonneau* (Fig. 13). This car, which in general arrangement follows the line adopted in the Darracq and Renault vehicles, was illustrated and described in our report of the recent Automobile Exhibition in Paris. We may mention, however, that it is fitted with a Gobron-Brillié two-cylinder four-piston balanced motor, giving 8 h.p., located under a bonnet in the fore part of a tubular frame. Like the 12 h.p. engine it has electrical ignition, special petrol feed in place of carburettor, water-circulating pump and radiator. The power of the motor is transmitted to the change-speed gear, which gives three speeds forward and a reverse, a universally jointed shaft and bevel gearing conveying the motion from the gear box to the rear live axle. Inclined wheel steering is fitted; one lever controls the ignition, the petrol feed and the governor; there are three levers at the right side of the driver, one for the brakes, one for the change speed gear, and one for the reverse motion. The four-seated *tonneau* body is finished in natural wood and is comfortably upholstered, the artillery road wheels being shod with pneumatic tires, the whole forming an attractive vehicle which is likely to become very popular in this country.

Two cars are shown by Messrs. Lewis and Lewis, of Townmead Road, Fulham. The car (Fig. 14) which is being introduced into this country under the name "Diana," follows, generally speaking, the lines adopted in the Benz cars. The engine, a horizontal one of 4 h.p. in one case and 6 h.p. in the other, is located in the rear of the frame. The cylinder is water-jacketed, the circulation being on the thermo-syphon system; a radiating coil is provided. Three speeds forward, ranging from four to twenty miles per hour, are available. The power of the engine is transmitted by two belts, working on fast and loose pulleys, to a countershaft, from which it is conveyed to the rear axle by a duplicate set of sprocket wheels and Brampton chains; the low speed is obtained by means of a Crypto gear. The car is fitted with special band-brakes to the hubs of the rear wheels, they acting equally well whether the car is running in a forward or backward direction. The crank chamber of the engine is closed in, and the crank pin is lubricated from a sight-feed lubricator by means of a hollow ring outside the crank and an oil hole through the centre of the crank pin; a half compression cam and a starting handle are used for starting the engine.

The belts are shifted from fast to loose pulley, and from medium to top speed, by a special arrangement, using one handle only. The countershaft runs in swinging brackets, which can be drawn forward by tension screws to tighten the belts and chains. A sight-feed lubricator with four outlets is fixed at the back of the cars. The starting handle, water-filling plug, and petrol-filling plug are all accessible on the outside without opening the back cover. The coach work is of strong construction and upholstered in leather. The cars, which are fitted with wood wheels and pneumatic tyres, weigh about 11 cwt., and can attain a speed of twenty miles an hour.

The Sports Motor Car Company, of 103, Fulham Road, London, S.W., have this year a most varied and interesting exhibition. First we have a couple of the well-known Mayfair voituresses fitted with 3½ h.p. De Dion water-cooled engines, electric ignition, pump and radiator, inclined wheel steering, two independent brakes. This car will, it is claimed, climb any hill of 1 in 10 with a full load at ten miles an hour. Close by are a couple of similar cars, except that they are fitted with De Dion engines of 4½ h.p. and specially strong frames. Two speeds are available by means of a single belt and spur gearing. One of these vehicles is specially adapted for doctor's use, being fitted with a hood. A new car of interest is the Sports 4½ h.p. *tonneau* to carry four persons. Three speeds ahead and one reverse are obtained by a single belt, gear wheels and one chain to the live axle. The vehicle is fitted up on up-to-date lines, with inclined wheel steering and radiator; while a useful feature is that the engine can be set in motion from the driver's seat. The car complete weighs about 7 cwt., and can attain a speed of twenty-eight miles per hour. An American phaeton with 8 h.p. motor is also shown. The engine is of the two-cylinder horizontal type, the piston rods working on to a central crank shaft. The speed gear is arranged to give four speeds forward and one reverse, the transmission being direct to the rear axle by bevel gearing. Quite a new car is the "Sports" 9 h.p. car, the frame carrying the whole of the transmission gear so that any form of carriage body can be fitted; the illustration (Fig. 15) showing a *tonneau*. It is driven by a 9 h.p. two-cylinder water-cooled vertical motor, in which both the induction valves and the exhaust valves are well surrounded with water jackets, and are readily accessible by the removal of a single nut. The circulation is maintained by a pump and radiator. A Sthenos carburettor is employed, and the normal speed of the engine is 1,200 revolutions per minute. The car is gear driven by means of longitudinally-set Panhard type of gearing, and a universally-jointed shaft and bevel gearing on to the rear axle. It has four speeds forward and one reverse, all controlled by one lever. It is provided with three brakes—one pedal applied on the countershaft, and one

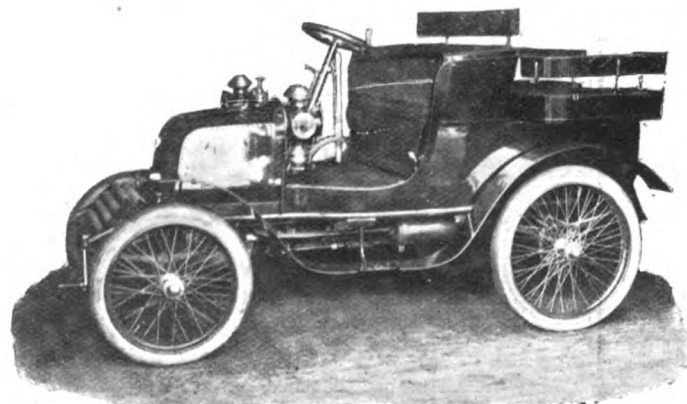


FIG. 15.—THE "SPORTS" 9 H.P. TONNEAU.

on each of the rear wheel hubs applied by hand lever in the usual way. Wheel steering with inclined steering pillar is fitted. The water tank which is situated beneath the front seat has a capacity sufficient for a run of 120 miles. The *tonneau* body is very commodious, and the car is altogether nicely finished; its weight complete is about 9 cwt. Those on the look out for a good light car at a relatively low price should not overlook the Sports Company's stand.

An entirely new car to the English market is the "Ader," made by the Société Industrielle des Telephones, of Paris, and introduced into this country by Messrs. G.A. Nussbaum and Company, 29, Ludgate Hill, London, E.C. Two cars on are view—one a spider (Fig. 16) and one a *tonneau*, the only difference being in the body. Working upon the "Otto" cycle, the 6 h.p. motor (Fig. 18) has two cylinders set at an angle of 90 degs. The diameter of the cylinders is $3\frac{1}{2}$ in. by $3\frac{1}{2}$ in. stroke, the normal speed being from 1,200 to 1,500 revolutions per minute. The piston-rods are attached to the same point of the crank shaft, which carries a couple of flywheels, the whole encased in an aluminium gear-box. The explosions are produced by the ordinary system of electric ignition. The system of water-cooling adopted presents some novel features. The water which is contained in the cylinder jackets is, under the action of the heat, changed into steam, and as such passes into a condenser, which is a copper tank cooled by flanges fixed to the motor shaft. In the form of water it falls then into a small reservoir, then passes into another similar receptacle, and finally mounts again by means of pulso-meters into the cylinder water-jackets. The pulso-meters are india-rubber membranes, to which the differences of pressure in the motor base-chamber give an oscillating movement, and thereby cause the water to ascend. The frame of the car is built up of two parts, the one rectangular, the other triangular. The

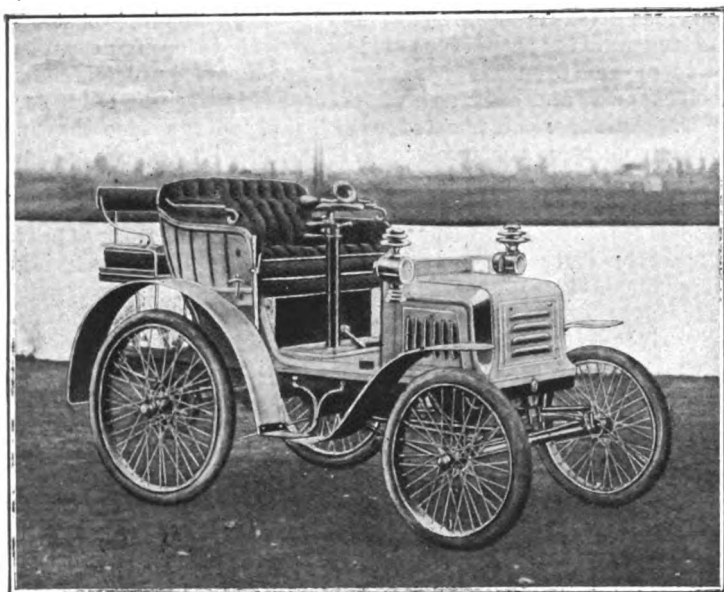


FIG. 16.—THE ADER LIGHT CAR.

front axle forms the base of the triangle, of which the apex rests on the rear side of the rectangular portion of the frame. This latter is sustained by the back axles. Under normal conditions the planes of these two parts blend, but they can incline, the one upon the other, so giving to the car great suppleness, and assuring easy travelling over the most irregular of roads. The motor itself is carried in the fore-part of the frame, while the carburettor, petrol tank, accumulators, and induction coils are all stowed away beneath the driver's seat. An induction coil for each cylinder is used. The motor drives a shaft which carries at its extremity a friction clutch and also a small pulley, the latter being fitted on its rim with a series of springs, by the intermediary of which the propulsive effort is transmitted to the wheels. With such an arrangement any sudden shock which the car may receive while travelling is only communicated to the cylinders after the springs have deadened the greater part of the blow. It is on this kind of little pulley that the flanges for cooling the condenser are fitted. There are three forward speeds and a separate reverse motion. The transmission of the propulsive effort is finally completed by means of a differential and ordinary duplicate pair of chains. The pipe connecting the motor to the exhaust box passes through another and larger tube, so heating the air which is drawn in through the latter to the carburettor. The car is fitted with

two brakes. The first, which is a hand-brake, acts upon the rear wheels, while the second, operated by a pedal, is connected to the differential. The application of either produces exactly the same effects: (1) To disconnect the friction clutch; (2) to cut off all but sufficient explosive mixture to keep the motor running, thus minimising vibration and economising petrol; (3) to apply one or other of the brakes. Cycle type road wheels and pneumatic tires are fitted, while the steering is con-

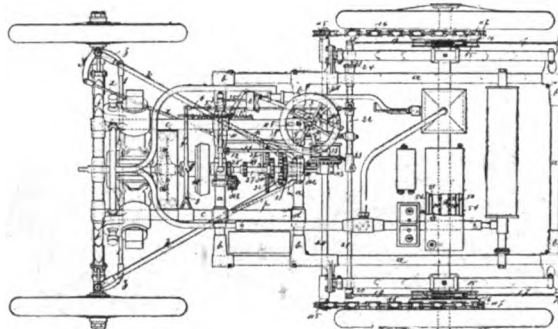


FIG. 17.—PLAN OF ADER LIGHT CAR.

trolled by a horizontal hand wheel. The car complete weighs about 7 cwt., and can attain a speed of from thirty to thirty-five miles per hour.

The Automobile Manufacturing Company, Limited, of Long Acre, W.C., have a fine array of cars of the latest pattern, including an 8 h.p. Panhard with four-cylinder motor and latest type of transmission gear, also a 6 h.p. Mors Petit Duc. A car which is attracting much attention is the identical Darracq racer which won the race at Pau in February last. It is fitted with a two-cylinder engine of 12 h.p., capable of doing thirty-eight miles an hour on a give-and-take road, the maximum speed being fifty-five miles per hour. Another interesting item is the chassis, or complete frame, of the new 8 h.p. Darracq car, which, in addition to being of greater power than the well-known type, is longer in wheel base and of correspondingly increased strength to the wearing parts. A car which should appeal to doctors is the "Richard," fitted with a hansom cab top and glass front, the latter being removable. This vehicle is driven by a 5 h.p. water-cooled vertical engine located in the front part of the vehicle. The transmission is by means of a single belt and spur gearing direct on to the rear axle, three speeds ahead and one reverse being available. The road wheels are of the cycle type and fitted with pneumatic tires. There are two brakes under the control of the driver, the little vehicle being well worthy of inspection. Those on the look out for a little vehicle at a relatively low price, should inspect the Delin car (Fig. 19)

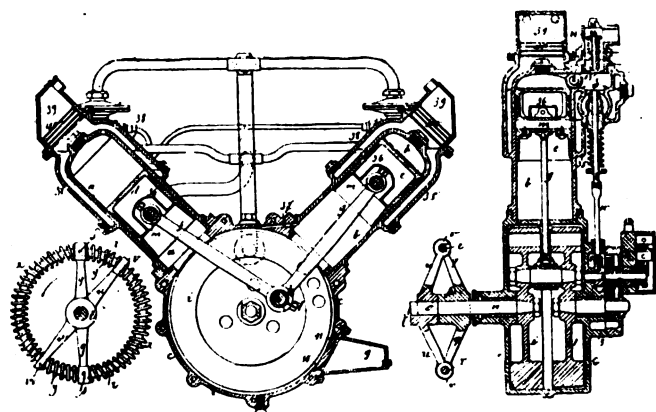


FIG. 18.—SECTIONAL ELEVATION OF ADER MOTOR.

on this stand. The car is made by La Société des Usines Delin, of Louvain, Belgium. The frame is of tubular construction, in the fore-part of which, under a bonnet, is fixed a $3\frac{1}{2}$ h.p. motor. This is fitted with radial ribs to the cylinder and a water-cooled head, the circulation being on the thermo-siphon system. The power is transmitted by a chain to the counter-

shaft, which is fitted with a variable-speed gear giving two speeds forward and reverse; from the countershaft a centrally-located chain transmits the power to the rear differential axle. On the level the car can attain a speed of twenty miles an hour.

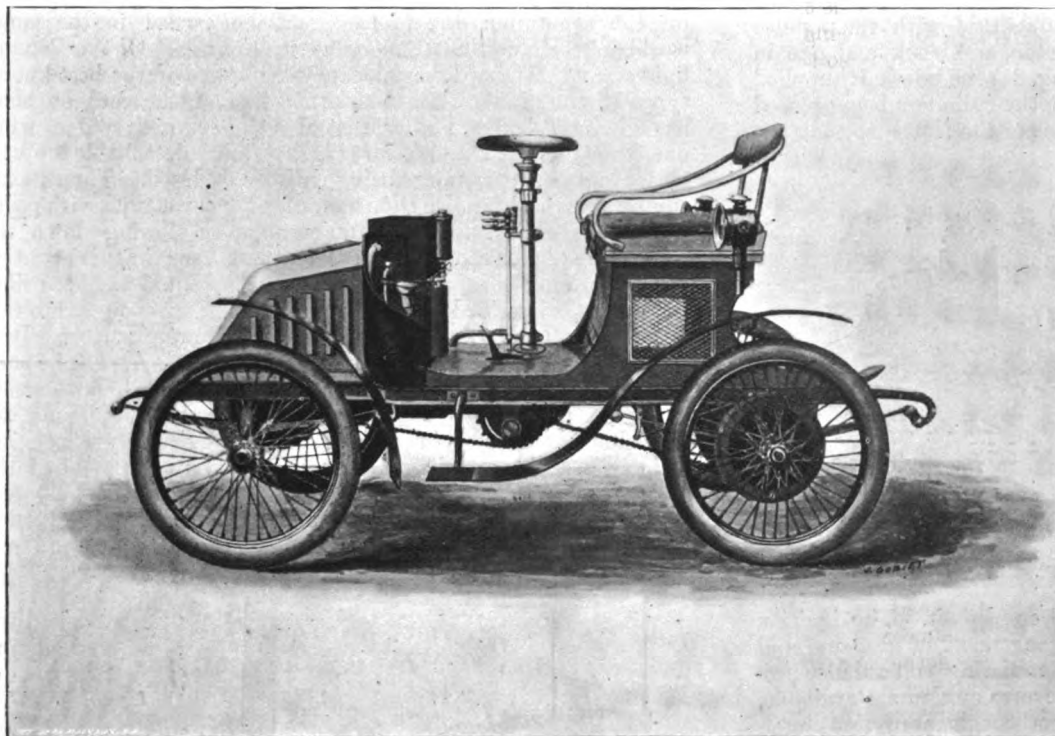


FIG. 19.—THE DELIN VOITURETTE.

while on the low gear it will, it is claimed, mount any hill, it having been successfully tested on the steep thoroughfare in Brussels known as the Montagne de la Cour. A pedal-operated clutch is interposed between the engine and the transmission gear, so that the former can be thrown out of gear at will. Wheel steering, cycle type wheels, and pneumatic tires go to complete an attractive little car weighing between five and six cwt. Passing by a Minerva motor-bicycle, we come to a handsome Serpollet steam car of 8 h.p., fitted with a four-seated phaeton body similar to that being built for the King. Of accessories and motor parts a wide selection is offered, among which were many spare parts for Panhard and Peugeot cars, a lifting jack which, while weighing only 20 ozs., will lift 5 cwt., and a new foot-operated signal bell.

A very fine display is made by Messrs. De Dion Bouton, Limited, of 14, Regent Street, London, S.W., no less than five of the well-known De Dion voiturettes being staged. Prominent among these is a car with a well-finished Mylord body, built for Mr. T. H. Weguelin, an elegant phaeton with detachable canopy, leather wind-shield, and plate-glass screen in the front, which is detachable independently, and a *tonneau* in dark blue with imitation motor bonnet in front. All these vehicles are fitted with a water-cooled engine, with electric ignition, developing $4\frac{1}{2}$ h.p. This makes the car suitable for carrying four persons and enables it to be driven up any hill on an ordinary main road

Under favourable conditions a speed of twenty-six miles an hour can be maintained, and ordinary hills can be taken on top speed. In addition to a larger engine, the cars are now fitted with a reversing gear. The frames of the cars are formed of weldless steel tubing; on these frames bodies of various designs are fitted to suit the tastes or requirements of purchasers. The carriage is hung on easy springs. Band brakes are fitted—one acting on the balance gear, and one on drums on each of the driving wheels. The length of the carriage over all is 8 ft., and the width 4 ft. 4 in. The weight is about 800 lbs. A new exhaust regulator enables the driver to make the engine run more quietly when in traffic or stationary. It is also claimed to effect an economy in the amount of petrol consumed. The engine is cooled by water carried in a tank in the front of the car, and circulated by means of a pump, driven by the engine through radiators suspended between the front wheels. It is almost impossible to make a mistake with the change speed gear. By pulling the lever back the low gear is brought into action; by pushing it forward the high gear is engaged; whilst in

the middle position the engine is out of gear with the driving wheels. Up-river motorists will be interested in the De Dion $4\frac{1}{2}$ in. water engine, mounted, together with a gear giving two speeds ahead and one astern, an aluminium base plate ready to be fitted into a boat. The De Dion Company are having one of these combinations fitted

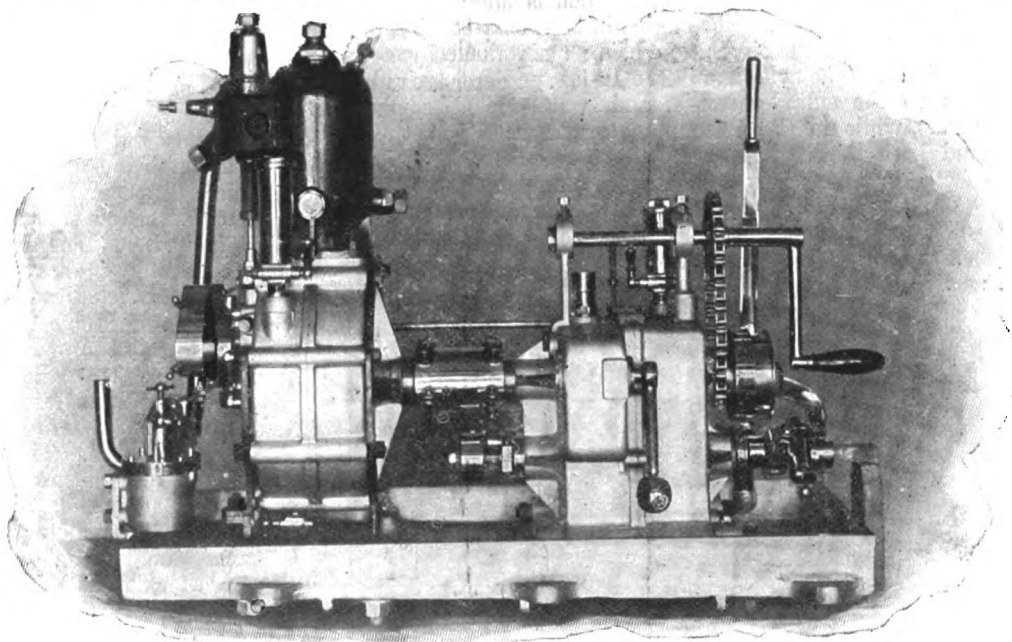


FIG. 20.—THE DE DION LAUNCH MOTOR.

to a boat and hope to have it at work shortly. An illustration of the launch engine complete with speed gear is given in Fig. 20.

THE GENERAL AUTOMOBILE AGENCY, D. Farman, Man., Carage open day and night, all cars in stock, 100-104, Long Acre, W.C.

The Roadway Autocar Company, Ltd., of 44, Berners Street, London, W., have, in addition to an array of accessories, four different makes of cars on view—the Mors, the Renault, and the Bardon petrol vehicles, and a new electrical automobile. Dealing first with the Mors type, the trend of the times is to be seen in a couple of 6 h.p. light cars fitted with the popular *tonneau* body, one being finished in green and black and one in white and black. In these vehicles (Fig. 21) the power is supplied by a two-cylinder water-cooled engine, the cylinders being placed opposite to one another across the front of the frame, so that the

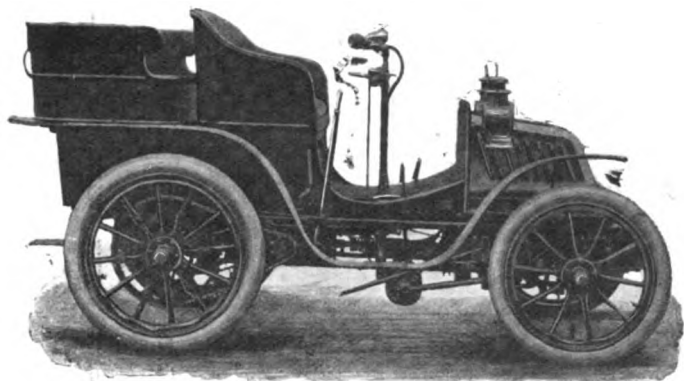


FIG. 21.—THE MORS 6 H.P. PETIT DUC.

two piston rods work on to the central crankshaft. The ignition spark is furnished by the Mors arrangement of dynamo and accumulators, while a governor and radiating coil are also provided. Three speeds forward and a reverse motion are available, the engine transmitting its power through a friction-clutch to the variable gear box, located towards the rear of the frame (Fig. 22). From the differential countershaft duplicate sets of chains and chain wheels convey the power to the rear road wheels. Steering is controlled by a bar, somewhat on the lines of those used on cycles; the road wheels are of the artillery wood type and shod with pneumatic tires. Ample brake power is provided, there being altogether three brakes. Two cars shown on this stand which are attracting attention are the 10 h.p. and 16 h.p. Mors cars (Fig. 23), both fitted with *tonneaux*. As the general arrangement in the two vehicles is identical one description will suffice. The engine in both cars consists of four vertical cylinders, the circulation being maintained by a pump and radiator. The cylinders in the 10 h.p. engine have radiating flanges to the cylinder walls and water-cooled combustion chambers, while in the 16 h.p. motor the water-jacket extends around both the head and walls of the cylinders. The ignition is effected by means of a dynamo and accumulators, while a pedal-operated accelerator acting on the governor and a small handle on the steering column regulating the gas admission are available. From the engine the power is transmitted through a clutch to the variable-speed gear box, which is adapted to give four

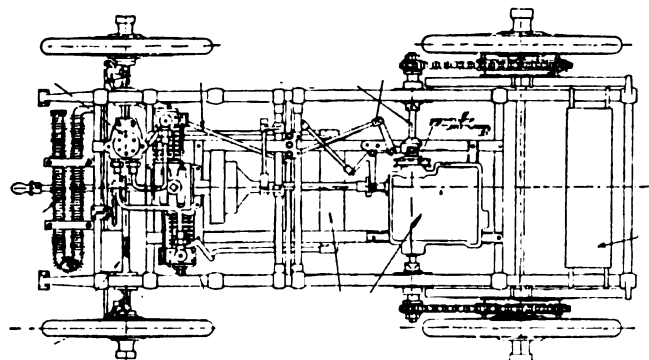


FIG. 22.—PLAN OF MORS 6 H.P. PETIT DUC.

speeds forward and reverse, the forward motion being controlled by one lever and the reverse by another. Bevel gearing connects the change-speed gear countershaft with the differential shaft, which in turn is connected to the rear road wheels by the usual duplicate set of chains and chain wheels. Ample brake power, inclined wheel steering,

artillery wooden wheels, and pneumatic tires are all part and parcel of the Mors 10 h.p. and 16 h.p. cars, to which, being built with standard frames, any type of carriage body can be fitted. It will be remembered that the Hon. C. S. Rolls has now a 24 h.p. car of this firm's make, and his selection speaks volumes for the reputation the Mors cars have earned in the motor world, as well in this country as in France. Of the Renault light cars little need be said, they being one of the best-known types of the kind on the market. One of the cars on show has a *tonneau* body, another that of a three-seated spider, while one, known as the Doctor's car (Fig. 24), has a detachable top with glass front, the rear riders being entirely enclosed. The cars are equipped with $4\frac{1}{2}$ h.p. De Dion motors of the latest type, with pedal-controlled exhaust lifter for quietening or slowing down the engine. Another car, shown for the first time in this country, is the Bardon; this is of French construction, and has been illustrated and described in the *Journal*. The car on exhibition is a *tonneau*, neatly finished in blue with primrose wheels. It is fitted with a special 5 h.p. horizontal engine. As will be seen from the plan view (Fig. 25), the engine is placed transversely on the frame, and has only one cylinder but two pistons, the explosion chamber being in the centre. Four fly-wheels are employed. The peculiar construction and arrangement of the engine and working parts render the car almost entirely free from vibration. The transmission is effected by a combination

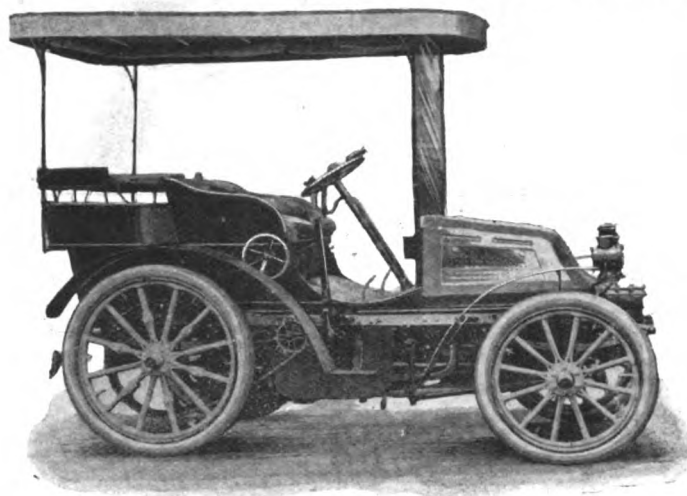


FIG. 23.—THE MORS 16 H.P. CAR.

of gear and chain driving, three speeds forward and a reverse motion being available. Three brakes are provided, and with inclined wheel steering, wood wheels, and pneumatic tires the car is at once both comfortable and speedy, as well as a good hill climber. The Roadway Company are also introducing a new electrical car, one of which they have on view. This is a five-seated cabriolet, capable, it is claimed, of travelling fifty miles on one charge of the battery, which consists of forty four accumulators. The car is equipped with two electric motors, geared direct, one each to the rear road wheels. The controller is adapted to give three speeds forward (three, six, and twelve miles on hour) and the same number in a reverse direction, the latter being controlled by a heel pedal. The wooden road wheels are shod with Diamond single tube pneumatic tires, while both hand and foot operated brakes are fitted. Complete, the car weighs about a ton. Out of the many motor accessories shown we may refer to a new acetylene headlight known as the Phare Ducellier. This will burn for five hours on one charge and throws a powerful light in the front of the car. Samples are also shown of the R.A.C. sparking plug, of which we hear very good accounts. The plug is of short and stout construction, which is claimed to prevent fracture of the porcelains. Should, however, the porcelains become cracked, they can be quickly replaced. The two porcelains and the whole internal parts are mechanically held without cement of any kind, and by unloosening the lock-nut the whole of the parts collapse. No sealing matter or cement is employed, so that the frequent troubles arising from short circuiting are overcome, the joints being made by mica and asbestos washers. The spark passes between two conically shaped platinum points, so that the

insulators may be turned round without affecting the spark. The two points are of best platinum, while the sparking end of the insulator is rounded and easily cleaned, the return electrode being brazed in.

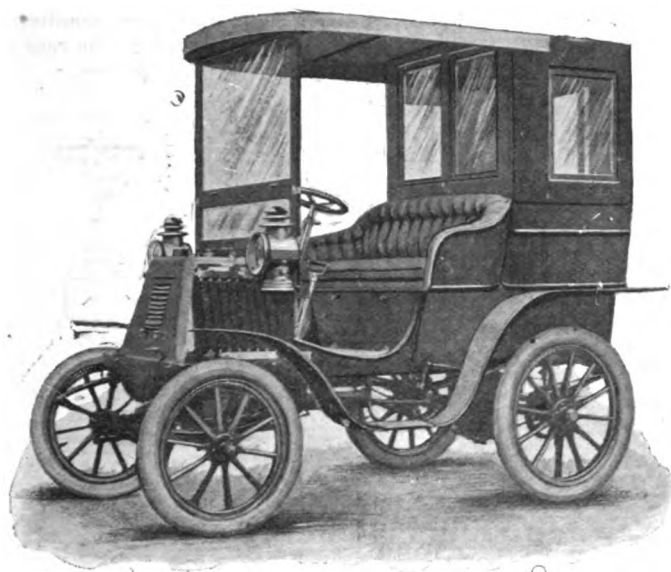


FIG. 24.—THE RENAULT DOCTOR'S CAR.

Considerable attention is being centred on the new light car of Messrs. Humber, Limited, Coventry, of which four are exhibited—three *tonneaux* (Fig. 10, page 163) and one a three-seated body. As in each the motor and general arrangement of the transmission gear are identical, one description will suffice. To deal first with the frame, on which the whole structure is built, this is of tubular construction, a feature being that the longitudinal tubes extend the whole length of the frame, being braced together by cross tubes which are not split, but which are connected to the longitudinal tubes by lugs on the latter. The motor, which is located under a bonnet in the fore part of the frame, is a genuine French De Dion $4\frac{1}{2}$ h.p. of the latest pattern. It is fitted with the exhaust valve closer, by which the speed of the engine can be regulated to the greatest nicety. The ignition is electrical, and it is worthy of remark that, the batteries and coil being close to the engine, long lengths of wiring are avoided, thus minimising the possibility of short circuiting. The carburettor is De Dion's latest development of the well-known float feed type; the air supply being heated from the exhaust pipe. The engine is, of course, water-cooled, the water circulation arrangements comprising a gear driven pump and a radiator. The water tank is located under the bonnet in front of the dash board, while the petrol and lubricating oil tank is carried behind the dash. Before leaving this part of the car, reference may well be made to the ease with which the motor and its various accessories may be inspected. By simply undoing two screws the radiator, which is hinged, can be let down in front, and the bonnet, also hinged, can be turned upwards, thus laying open to view the whole of the engine, carburettor, batteries, water tank, sparking plug and trembler, and all the electric wiring and connections. This does not necessitate the stopping of the engine, as the cooling water can freely circulate through the radiator even when it is swung down. Coming now to the transmission gear, two forward and two reverse speeds are provided by means of a change-speed gear of the De Dion type; both are operated by one hand-lever, the movement being the same in both cases, with the addition of a foot-pedal to change the gear from forward to backward direction. The speeds attainable are up to twenty-five miles per hour on the level, and from six to eight miles per hour on stiff hills. These can also be regulated by varying the mixture, by advancing or retarding the sparking, or by the exhaust valve closer, previously referred to. The power is transmitted from the variable speed gear box to the rear driving axle by means of a longitudinal

shaft with universal joints and bevel gearing. The brake system consists of, first, a pedal manipulated from the driver's seat, actuating a hand brake on the longitudinal shaft, and secondly, a lever moving along a notched plate to the right of the driver, and operating two powerful hand brakes on the hubs of the rear road wheels. The steering is of the irreversible type, the same as used on racing cars. The steering wheel is a special feature, it consists of a ring of steel tubing covered with leather, placed centrally over the steering column, to which it is attached by only one arm. In this way the driver has free access through the top of the wheel to the levers regulating the petrol and ignition, these levers being brought close up to the top of the wheel. The arrangement is certainly an ingenious and convenient one. The road wheels are 28 in. dia., with 3 in. pneumatic tires, all four wheels being the same diameter, and fitted with the same size of tires; the latter are thus interchangeable, a single spare tube and cover being all that it is necessary to take on a tour. The carriage work of the vehicles is handsomely and comfortably finished, while the *tonneau* has plenty of leg room for two passengers. The *tonneau* or spider seat can be quickly detached and the space utilised for luggage, thus affording an excellent touring car for two persons. Complete, the vehicle weighs about 9 cwt. Mr. Craig, of the Humber Company, informs us that the car has been subjected to extensive trials, which have resulted so satisfactorily that arrangements are now in hand for the construction of the Humber car in series.

There are only four cars on the stand of the Motor Power Company, Limited, 14, Regent Street, London, S.W., but as each one represents a different type of automobile, it is one worthy of close inspection. First, we have a replica of the car in which the writer made a trip to Brighton in the early part of the year—a 16 h.p. Napier car, kindly lent by Mr. Roger Fuller. The details of these vehicles are now so well known that it is not necessary to go into them at length on the present occasion. Suffice it to say that the motive power is supplied by a petroleum-spirit engine, comprising four water-jacketed cylinders, which develop 24 h.p. on the brake. Two independent sets of powerful hand brakes are fitted. One set is operated by hand by means of a lever on the right side of the driver, the other set being operated by the driver's foot; in the latter case the drum is cooled by water, so that there is no chance of it heating and destroying the fibre of the brake strap. Either of these brakes, when applied, is more than sufficiently powerful to prevent the car moving backwards on the steepest hill, should it be necessary to stop on a declivity. Roller bearings are fitted to the working

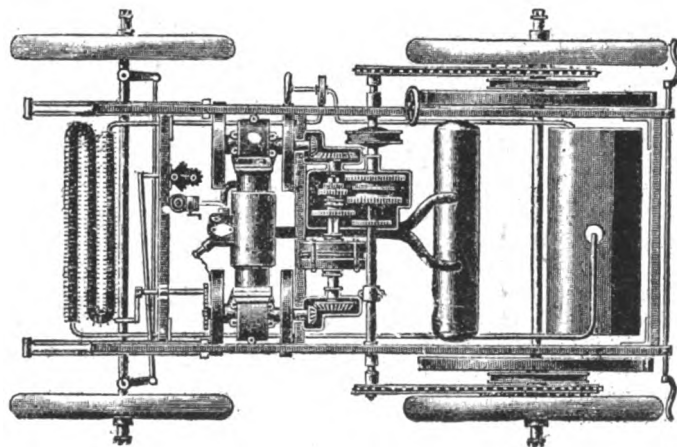


FIG. 25.—PLAN OF BARDON CAR.

parts, while to reduce weight aluminium is used wherever possible. The carriage work of the car is of the highest class; the body is of the *tonneau* type, the back portion being built up to the same height as the front seat. Strong road wheels of the artillery type are fitted, and these are shod with 90 mm. and 120 mm. Clipper-Michelin pneumatic tires. The 9 h.p. Napier car to be seen is practically identical with the higher-powered one, except that it is fitted with a two-cylinder engine developing

10½ to 12 h.p. on the brake. Electrical ignition by means of accumulators and coil is employed. It will be remembered that the first car of this type was the "Sir Charles" of Mr. E. Kennard, J.P., which competed in the 1,000 miles Trial last year. Passing from the Napier cars, which are now well known in the automobile world, we come to the Gladiator light car, a vehicle of French construction, and for which the Motor Power Company are the agents in this country. This is a powerful little car (Fig. 26), and is fitted with a single-cylinder vertical petrol motor of the Aster type developing 6½ h.p.; the cylinder is water-cooled, having a jacket over the whole of the cylinder, the water circulation being ensured by a rotary pump driven off the fly wheel. The water tank holds about three gallons of water, and with the radiators provided the water is kept cool for a great length of time. The ignition is electrical, being generated by accumulators and an induction coil placed in a box under the driver's seat. The speed of the engine is, as usual, controlled by advancing or retarding the electrical ignition. The carburettor is of the float-feed constant level type. The petrol reservoir, which holds about three gallons of spirit, is placed under the seat. A small reservoir for lubricating oil is set on the dashboard so that the engine can be lubricated at will, when running, from the driver's seat, thus obviating any necessity for stopping for this purpose. The engine is set in the front of the car under a bonnet, the same as in all the best known big carriages. From the engine the power is transmitted through a pedal-operated friction clutch

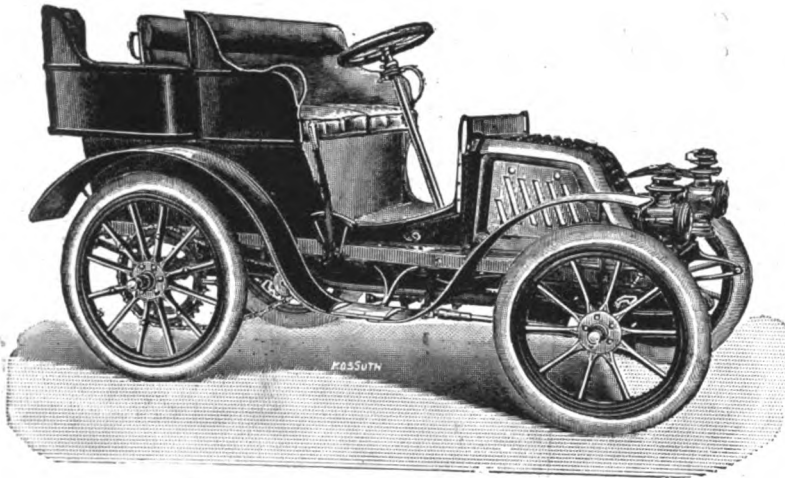


FIG. 26.—THE GLADIATOR LIGHT CAR.

to a variable gear of the Panhard type, giving three distinct changes of speed and a reversing gear, thus combining a good speed on the level with ample hill-climbing powers on the lower gears. The change of gear is effected by means of a small hand lever placed beside the driver, and under his immediate control. From the variable speed gear box the power is conveyed by a longitudinal shaft, through bevel gearing, to a differential countershaft, on the ends of which are sprocket wheels, these being connected with chain wheels on the rear wheel hubs by two chains. Irreversible inclined wheel steering is fitted, the wheel being on the right hand under the control of the driver, within whose reach are also placed the driving and braking mechanism. The road wheels are of the wooden artillery type, and are shod with pneumatic tires. The body, which is of the now well-known *tonneau* shape, has seating capacity for four people, the frame being hung both at the back and the front on laminated C springs, so that comfortable riding is ensured. There are two distinct sets of brakes, one being actuated by the right foot and acting on drums on the hubs of the driving wheels, the other being actuated by a hand lever and acting on a large drum on the countershaft. The weight of the car when in going order, with water and petrol tanks filled, etc., is 10½ cwt., while the overall measurements are, length, 7ft. 6 ins.; width, 4ft. 6 ins.; height, 4 ft. 3 ins. Finally we come to the 3½ h.p. Gladiator voiturette, a small car adapted for two persons. The frame of the car is built up of steel tubes, and is suspended on the axle by plate springs. The motive power is supplied by an Aster 3½ h.p. water-cooled engine located in the front part of

the frame. The ignition is electrical, the carburettor is of the Longuemare type, while the water circulation is maintained by a small pump, a radiating coil also being provided. The power of the motor is transmitted to a countershaft by a chain, a friction clutch and a two-speed gear (giving 22 and 8½ miles per hour) being provided. From the variable-speed countershaft a centrally-located chain transmits the power to the rear axle.

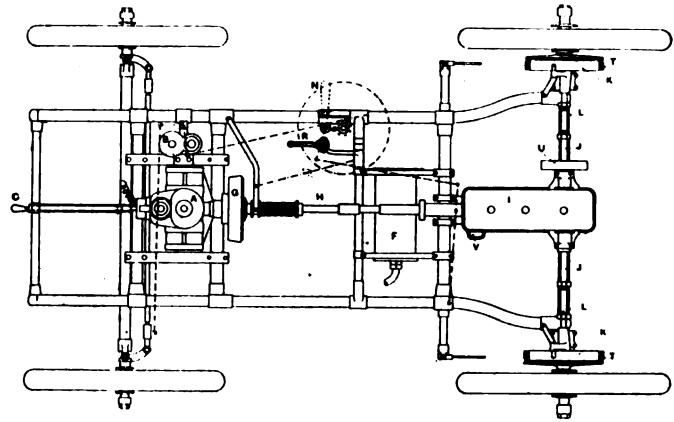


FIG. 27.—PLAN OF "EMPRESS" CAR.

Steering is controlled by an inclined hand-wheel, on which is fitted the electrical switch, while the remaining control levers are fixed on the steering standard. Three brakes are provided, while the petrol tank has a capacity sufficient for a run of 125 miles. Complete this little car weighs about 4½ cwt.

The United Motor Industries, Limited, 64, Holborn Viaduct, E.C., have a comprehensive display of parts and accessories, amid which the "Empress" light car fitted with a *tonneau* body has a conspicuous place. This car, of which we give a plan view in Fig. 27, is fitted with a 4½ h.p. De Dion-Bouton motor, three speeds forward and a reverse, and a special direct transmission. The range of lamps, reservoirs, horns, driving aprons, baskets, etc., is most complete, and among other exhibits of interest we notice the "Reclus" sparking plugs, the "D" lubricating oil for De Dion motors, the "P" lubricating oil for Panhard cars, the "Mercié" gear, the "Brissard" water-cooled combustion chamber, the "U.M.I." speed changing gear, and a folding toolbag of good design and great convenience. On this stand there is also a collection of worm steering gears, differential gears for cars up to 25 h.p., and of gears from the Paris Show. The "Dupont" two-speed gear with free clutch is also shown (Fig. 28). In this the pinions are always in gear, and are hermetically inclosed in a case filled with grease, thus keeping them free from dust and dirt while securing con-

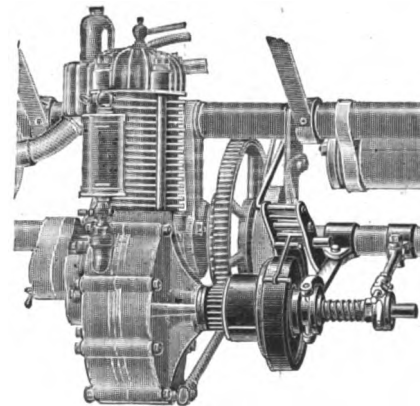


FIG. 28.—THE "DUPONT" GEAR WITH FRICTION CLUTCH.

tinuous lubrication. A "U.M.I." frame with three speeds and a reverse, differential gear and steering complete, clutch, axles, springs and hubs, complete, one of the most comprehensive displays in the Exhibition. On this stand there is something of interest to every visitor.

High-speed petrol motors, which have been given the name "Kelecom," are a speciality of Messrs. Antoine, Fils and Company, of Liege, Belgium. They are of both the air and water-cooled vertical type. The air-cooled engine is of $2\frac{1}{2}$ h.p., and runs at a normal speed of 1,800 revolutions per minute, the weight

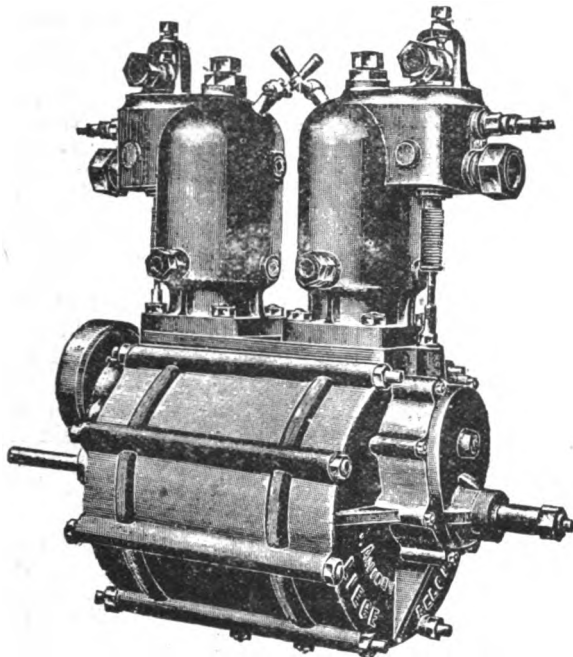


FIG. 29.—THE ANTOINE 8-H.P. MOTOR.

coming out at 60 lbs. Of the water-cooled motors two sizes are to be seen—a single cylinder engine giving 4 h.p., and a two-cylinder one of 8 h.p. (Fig. 29). The former runs at 1,600 revolutions and weighs 105 lbs.; while the normal speed of the double-cylinder engine is 1,400. The inlet and exhaust valves are located one above the other in such a way that they can be readily removed. In the larger engines, the suction valve is so arranged that the inlet pipe can be set at any angle. All the engines have electrical ignition, with special contact breaker, while a centrifugal governor acting on the inlet valve and driven off the crank shaft, is fitted. Messrs. Antoine are also making a special centrifugal water-circulating pump (Fig. 30), suitable for engines up to 8 h.p., the weight of the pump being only $4\frac{1}{2}$ lbs.

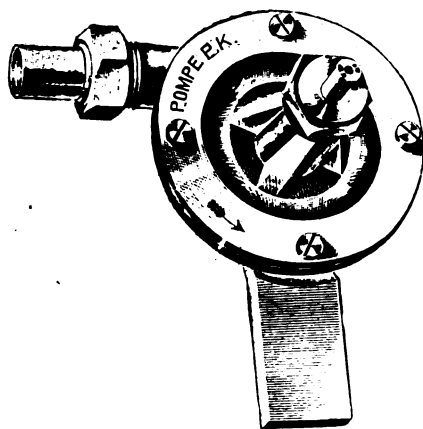


FIG. 30.—THE "KELECOM" PUMP.

The Collier twin tire (Fig. 31) for motor-vehicles is being shown by the Collier Tire Company, Limited, Camp Road, St. Albans. In this tire the canvas walls of the tire parts are carried underneath and vulcanised in the usual way. Part is used to form an arm on each side, or tread to hold the rubber in its place. These arms are then laced together by ligatures passing

right through the rubber tread. Consequently, the rubber tread is helped by a triple force, viz., the vulcanisation to the canvas, the arms, which terminate in a beading, and the ligatures, which pass through the rubber tread from one arm to the other. This latter is the special point, and one upon which the makers rightly lay great stress. It is claimed that in this combination of a pneumatic and solid tire the narrow tread makes the tire a fast one, and results in very little dust being made, while skidding is greatly minimised. The special form of fastening adopted prevents creeping, thus removing the chief cause of the bursting of the inner tube.

The largely-used Benz motor-cars are kept well to the front by Messrs. Hewetson, Limited, of 251, Tottenham Court Road, London, W., who have nearly a dozen cars of different types on view. It is difficult to say much that is not already known of these cars. The various details have, however, been modified and strengthened as experience has shown to be necessary, the result being a neat carriage, which is well intended to maintain the already great popularity of this firm. Glancing at the cars on the stand, we first notice a vehicle intended for doctors' use. It is intended to seat two persons and is fitted with a detachable hansom cab top, so that the riders may be protected in bad weather. The car is fitted with a $3\frac{1}{2}$ h.p. horizontal engine with electrical ignition. Three speeds, obtained by means of belts working on fast and loose pulleys, are available, the vehicle being capable of maintaining an average speed of sixteen miles per

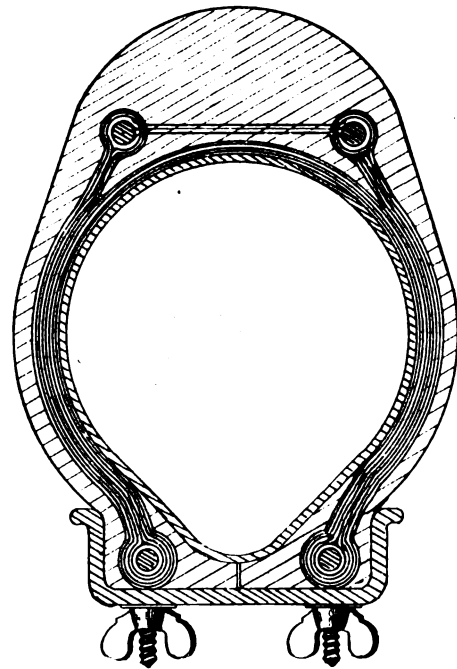


FIG. 31.—SECTION OF COLLIER TIRE.

hour. A $3\frac{1}{2}$ h.p. belt-driven Benz dog cart, with seating accommodation for three persons, is next seen, close by which is a three-seated car fitted with a $3\frac{1}{2}$ h.p. engine, the feature being that gear transmission is adopted in place of belts. Three speeds are provided as also a reverse motion. A useful car is that with seating accommodation for three persons, and with a $4\frac{1}{2}$ h.p. engine fitted with electrical ignition, water circulating pump and radiator. This is a gear-driven vehicle, there being four different speeds available as well as a reverse motion. The car on exhibition is fitted with wooden wheels and a useful hood for use in bad weather. Another style of Benz car is to be seen in the one fitted with a twin-cylinder engine giving 6 h.p. This is of the gear-driven type, and can attain a speed, on good roads, of thirty-five miles per hour. Coming to the higher powered cars, we notice a four-seated belt-driven dog-cart, fitted with a double-cylinder engine. This vehicle has three speeds forward and reverse motion; it weighs about 19 cwt., and can attain a speed of twenty-four miles per hour. At the time we visited the stand, Messrs. Hewetson

were expecting a 10 h.p. four-seated "Emperor" car. This has already been illustrated in the *Journal*, but we may mention that it is of the gear-driven type, the engine having two cylinders set opposite to one another and working on to the same crank shaft. Finally, we may refer to the Benz $3\frac{1}{2}$ h.p. light delivery van to be seen at the back of the stand. This little vehicle has, we are informed, been in use for the last three and a-half years, and, like "Charley's Aunt," is "still running."

Accumulators or secondary batteries for spark ignition on motor-tricycles and cars form the leading speciality of Messrs. Peto and Radford, Limited, 57B, Hatton Garden, E.C. The batteries give a flaming spark of great capacity; they are made in several sizes, ranging from 4 ampère-hour capacity up to 50 ampère-hours. The tricycle size has, it is stated, a capacity sufficient for a run of 500 miles, after which they can be re-charged at a small cost. The accumulator consists of an ebonite box divided into two compartments. Each compartment is fitted with positive and negative plates, separated by ebonite rods. Conspicuous on their stand is a primary battery for re-charging accumulators at home, sal ammoniac being the only addition necessary, the use of other agents being obviated. The "Dinin" accumulator, with which the name of the firm has long been associated in this country, is also shown; while a

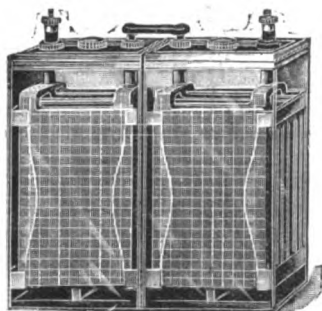


FIG. 32.—THE CELLULOID ACCUMULATOR.

distinct novelty is to be seen in storage batteries for motor-tricycles in celluloid cases (Fig. 32). Being transparent they secure a great advantage for the rider.

The novelty on the stand of the Star Motor Company, Wolverhampton, is a new Star light car with comfortable *tonneau* body. It was only with difficulty that this vehicle was got ready for the Show, and it is well worthy of inspection. The general arrangement is similar to that adopted in the Darracq and Renault cars, the engine being carried in the fore part of the frame under a bonnet. A two-cylinder vertical motor is used to drive the car, this being of 6 h.p., and fitted with electrical ignition and water jackets, the water circulation being maintained by a pump and radiator. Three speeds and a reverse motion are available, the engine transmitting its power through a clutch to a variable speed gear of the Panhard type, and thence by a universally-jointed longitudinal shaft and bevel gearing to the rear live axle. The changespeed gear is operated by a single hand lever, while steering is of the inclined wheel type. The road wheels are of the artillery wood type shod with Dunlop pneumatic tires. A foot pedal actuates a band brake on the driving shaft, while there are emergency band brakes on the hubs of the rear wheels operated by a hand lever. Complete, the car weighs about 11 cwt., and it can attain a speed of thirty miles per hour. The body is well finished, the back of the *tonneau* being brought well up, adding to the comfort of the passengers. In addition, the Star Company stage a couple of their well-known $4\frac{1}{2}$ h.p. belt-driven cars, and one $3\frac{1}{2}$ h.p. of the same type. These have been fully described in the *Journal*, but a modification we may refer to is the fitting of a kind of chimney to the crank chamber of the motor, by means of which the pressure in the chamber is reduced, not only keeping it cool, but also preventing the splashing of the oil.

A good lamp is a necessity in connection with motor-cars, and visitors to the Exhibition find several attractions on the stand of

Messrs Salsbury and Son, of Green Street, Blackfriars, S.E., who make a special feature of light-giving articles. The firm are the British agents for the Dietz paraffin lamps, and are showing samples of the latest improved patterns. For those who prefer an acetylene lamp they are introducing a novelty in an acetylene candle which will fit into an ordinary carriage lamp. Among other exhibits are the new model motor-car lamp, the Salsbury motor-cycle lamp, the Invincible motor-cycle lamp, and an acetylene generator attachment for motor lamps. The firm have introduced a new system of acetylene gas lighting for omnibuses and public vehicles. Two lamps are employed, each giving a 30-candle power light, a total of 60-candle power as against ten obtained with the present methods of lighting public vehicles. The lamps are arranged so as to secure equal diffusion of light in every part of the vehicle. The front lamp throws an exceptionally brilliant light ahead, but at the same time not of such a dazzling nature as to cause any inconvenience to traffic coming in the reverse direction. The rear lamp throws a light which fully illuminates the stairway of the omnibus, the conductor's stand, the step of the omnibus, etc., so that it is impossible for accidents to happen to passengers for lack of light. A new lamp for small cars, the "Essaness voiturette," is being made much of at this stand. The back and front are easily opened to gain access for cleaning, the lamp being held in the socket by screw barrels. The firm have just issued a new list, which is as bright and attractive as the lamps with which it is concerned.

Clincher tires for motor-vehicles are the most interesting of the many exhibits of the North British Rubber Company, Limited, Castle Mills, Edinburgh. Pneumatic Clinchers for motor-cycles and light cars are, we were informed, in ever increasing demand, and those which we inspected were neatly turned out, and suggestive of speed, comfort, and durability. The proof of the pudding is, however, in the eating, but judging from the past there is every reason to believe that the North British Rubber Company will with the tires on view more than hold the position which it has made for itself as the pioneer of rubber tires. The big traction engine wheel which occupies the centre of the company's stand does not claim to be the biggest wheel in existence, but the tire which covers its eighteen feet of circumference is probably the largest yet turned out. Its weight is 640 lbs., and its value £160; it is solid, of course, but so also are many of the tires made by the company even for small cars. Amongst these the "Castle" tire is conspicuous for its solid virtues; being vulcanised to the flat steel surface of the wheel it cannot possibly come off, and will wear to the very rim. Waterproof clothing, rugs, etc., are here also to be found in pleasing variety and good taste.

Naturally the Dunlop Pneumatic Tyre Company, Limited, of Coventry and London, are represented, and in addition to their well-known tires have a motor tire repair outfit which is one of the most compact and useful things of the kind we have seen. Fitted into a remarkably small compass are the necessary tools, etc., to deal with troubles by the way. The patching rubber is packed in neat tin cylindrical boxes, and neatly wrapped with canvas. This new box will be found on many cars during the coming season. The wired-on principle, which has been applied so successfully to motor-cycles and voiturettes, is now being introduced in connection with heavy cars, and these tires will shortly be ready for delivery. Hitherto the company has supplied a thickened edge vulcanised tire of foreign manufacture for large cars; but they are now well equipped to supply British-made wired-on tires, and so do for makers of heavy cars what they have long done with success for those interested in lighter vehicles.

A Locomobile and a New Orleans voiturette find places on a stand occupied by Mr. J. Van Toll, 15A, Netherwood Road, Shepherd's Bush, W. Mr. Van Toll intends to employ his experience in connection with the practical part of motoring in the repair of motor-cars. He will have facilities for storing cars, and in letting cars on hire during the coming season will doubtless find much activity. Such a business should be capable of much development, and Mr. Van Toll may be relied upon to give the necessary qualities that will make for success in that direction.

The Orient Express Car Syndicate, of 1, Princes Road, Holland Park Avenue, London, W., have on view a couple of Orient Express cars, including a *duc* and a three-seated *vis-a-vis*. They are fitted with a 6 h.p. horizontal single cylinder motor. The ignition is magneto-electrical, the cylinders are water-cooled, and the transmission is by means of belts with jockey tighteners. The "Orient Express" cars, which are of German construction, are of elegant design, and by reason of their relatively low cost should become very popular. Three forward speeds and one reverse motion are available, belt transmission being adopted. The speeds are actuated by a jockey pulley, which is pulled down on to the belts by a lever worked by hand. The car is easily driven, the whole of the levers, etc., being close to hand. They are fitted with artillery wood wheels, shod with either pneumatic or solid rubber tires as desired. The belt pulleys are made of aluminium, and, although no pump is usually fitted, provision is made so that one can readily be affixed. The engine is lubricated by a central oiler, actuated from the seat, while a useful feature is that the motor and gearing are protected from dirt and wet by a detachable guard. The cars weigh about 14 cwt., and can attain a speed of from twenty to twenty-five miles per hour. The company have also on view a powerful Canello-Durkopp *tonneau* car having a four-cylinder motor of 16 h.p., fitted with both tube and electric ignition. In addition the "Bergmann" magneto-electric ignition apparatus, which has the advantage over the ordinary magneto that it is rotary. We hope to illustrate and describe this in a later issue.

Messrs. Dennis Brothers, of the Barracks, Guildford, have an array of their "Speed King" motor tricycles, quadricycles, and trailers. The tricycles and quads are fitted with $2\frac{1}{2}$ h.p. De Dion engines, water-cooled, with combination water, oil, and petrol tank and radiator. These machines are fitted with the firm's friction clutch, which is of a wide conical shape, lined with leather, and specially designed to allow a start to be effected without any jar, Mr. Dennis giving us a convincing demonstration of this. A spray carburetter is now supplied on all their machines, and the diamond frame is filled with a tank, the upper part being used for extra petrol, and the lower for accumulators or dry batteries. Three band brakes are fitted, operated by levers beneath the handle-bar. The firm also show a new light car with *tonneau* body on Darracq lines; it is fitted with a 6 h.p. vertical engine in front, Panhard type of gear, and a central transmission shaft engaging by bevel gear with the rear live axle. They have an 8 h.p. car on similar lines, but fitted with a two-cylinder Buchet motor, in hand, which, however, they were not able to finish in time for the Show. Other exhibits include business and pleasure trailing cars for motor-cycles, and a light pony trap of tubular construction.

The Automobile Supply Company, 56, Broad Street, Birmingham, exhibit two vehicles. The first is a Darracq 6 h.p. *tonneau* voiturette of the type which has become very popular in this country. The other is one of the latest Darracq 8 h.p. light cars with long wheel base, the vehicle having been driven up by road from Birmingham.

The Anglo-American Oil Company, Limited., of 22, Billiter Street, London, E.C., exhibit a brand of petrol already famous amongst petroleum-spirit motorists all the world over. In the matter of storage the company meets the most exacting requirements of the Government and motorist. Their two-gallon can, square-shaped, and fitted with a spout applicable to any form of receptacle in such a manner as to practically render spilling of the precious liquor impossible, should find a place on every spirit-propelled car, no matter how valuable space may be. A neat wooden case, holding four of these cans, is, in a larger way, of course, equally convenient. The company's twenty-gallon tank is fitted with pump and sink, any overflow thus finding its way back to the tank, which, like all their vessels, is absolutely airtight.

Messrs. Carless, Capel, and Leonard, of the Hope Chemical Works and Pharos Works, Hackney Wick, N.E., are present with an exhibit of their well-known petrol for petroleum-spirit

motors, also samples of petroleum oils for lighting and heating, etc., and lubricating oils of all kinds. Included among the latter are lubricating oils specially adapted for petrol cars, while the petroleum oils include those of the Lighthouse, Pilot, and Phœbus brands. Among these are special kinds for spirit motors, and a capital "S" oil, which is specially prepared for the lubrication of air-cooled motors or of water-cooled motors running at great speeds. There is also a good collection of petrol storage tanks and receptacles for the conveyance of petrol, oils, etc. One of the attractions at this stand is a patent benzine safety lamp suitable for lighting motor-car houses, or for use in any buildings where inflammable materials are stored. The lamp is constructed on the principle of the Davey safety lamp, which is the interposition of a fine wire gauze between the internal flame and the external atmosphere, the action of the wire gauze being to radiate or dissipate any heat from the flame, and so reducing the temperature much below that necessary for the firing of an explosive mixture of air and petrol vapour. The lamp consists of a double wick raised and lowered from below, and it is ignited by the flame produced by striking a portion of prepared cotton which is carried in a small metal box; the lamp can thus be lit without opening it to the outside air—a very great advantage.

If there has been one stand in the Exhibition that has been sought out more than another it is that of the City and Suburban Electrical Carriage Company, of 6, Denman Street, Piccadilly Circus, London, W. The attraction has been the identical Victoriote which has been supplied to Her Majesty the Queen, and which arrived from Sandringham on Tuesday. This little vehicle has seating accommodation for two persons, and is, naturally, comfortably upholstered, and has silver-plated fittings, electric bell lamps, etc. It is fitted with a single electric motor, located at the rear of a tubular frame, and geared direct to the rear axle. The driving power is obtained from a battery of forty-four accumulators, the capacity of which is equal to run the car at a speed of fifteen miles for three hours. Steering is controlled by a tiller, while the driver has at his left hand a small handle, by the manipulation of which three different speeds forward and two reverse can be obtained. The battery is located in a chest at the rear, and can be recharged *in situ* or taken out. The vehicle is well supported by springs on wooden wheels, shod with 3 in. pneumatic single-tube tires, the result being a quiet, smooth-running car. A couple of brakes give the driver great command over the car, which weighs complete about 12 cwt. An identical car built to the order of Baron Alfred de Rothschild is also staged. Close by is found a car of novel design, a four-wheeled, two-seated grand hansom, with the driver's seat perched up high at the rear. Each of the rear wheels of this car is equipped with an electric motor, energy for which is furnished by a battery of forty-four accumulators. At an average speed of twelve miles per hour, the car can run a distance of thirty-five miles on one charge of the battery. The driver has three speeds ahead and the same astern at his disposal, by means of a small handle, while a tiller controls the front steering wheels. The wooden road vehicles of this car are shod with $2\frac{1}{2}$ in. solid rubber tires. Every attention has been paid to the details, which include electric bells and lamps, even a speaking tube being provided to enable the passengers to communicate with the driver. A landaulette to be seen at this stand is a type of car which is likely to become familiar in the West End, it having seating accommodation for four persons, in addition to the seat for the driver and attendant. This car is driven by a couple of electric motors—one to each of the rear wheels, and with its battery of 44 accumulators can travel a distance of forty miles, on one charge, at an average speed of twelve miles per hour. The vehicle can be quickly converted from a closed to an open carriage, and, being well sprung and fitted with 3 in. pneumatic tires, is a most easy-riding car. The weight complete comes out at about 25 cwt. Another car which has attracted attention, especially when shown in operation in the arena, is a comfortable Victoria, with the driver's seat fixed high up at the rear, leaving

THE GENERAL AUTOMOBILE AGENCY, D. Farman, Man., Carage open day and night, all cars in stock, 100-104, Long Acre, W.C.

an uninterrupted view to the two passengers for which it is tended. This is equipped with two electric motors, and has a capacity of forty miles at a speed of twelve miles per hour on one charge of the battery of forty-four accumulators with which it is provided. While the Victoriette may be termed the "dwarf" of the stand, the fifteen-seated covered omnibus may be regarded as the "giant"; it is intended for hotel or station use. It is arranged to carry eight inside and two out, as well as a quantity of luggage on the roof. On one charge of its battery of forty-four cells, which, by the way, is in this car located in the fore-part, a run of about thirty miles may be made at an average of ten

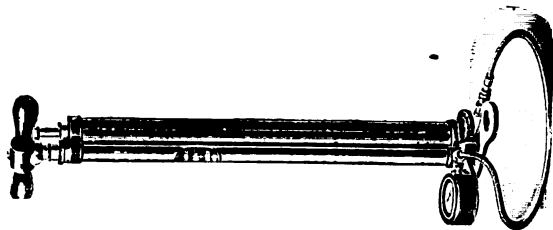


FIG. 33.—THE COMPOUND PUMP.

miles per hour. Equipped with tiller steering, wood wheels, and 3 in. solid rubber tires, the bus complete weighs just under two tons. All the vehicles are handsomely finished, and now that a big effort is to be made to popularise electric vehicles in this country we expect to see them largely adopted.

A "Compound" foot pump (Fig. 33) stands first and foremost amongst the exhibits of Messrs. Hedley S. Hunt and Co., of 199, Upper Thames Street, London, E.C. The main advantage claimed is rapid inflation of pneumatic tires for motor cycles and cars. Two cylinders working in conjunction, the up stroke of the piston compresses the air of the larger into the smaller; the down stroke forces the compressed air into the tire, and at the same time fills the larger cylinder. A pressure of 150 lbs. is obtained with less effort than is required to work an ordinary pump, and three strokes will inflate the tire of a 28 in. wheel. Indeed, so great is the pressure that the tires of a 20 cwt. car can be inflated without the use of a jack. Another point of some importance is the "instantaneous" connection which enables the pump to be applied to all machines.

The Clarkson and Capel Steam Car Syndicate, Limited, of Deverell Street, Great Dover Street, London, S.E., confine their exhibit mainly to their kerosene burners and radiating condensing tubes. The burner is of the true Bunsen type, and the quantity of air allowed to mix with the oil vapour before combustion can be adjusted to a nicety. The burner is stated to be clean and quiet and burns without smoke or smell. It can be adjusted at will to high or low flame, and can also be arranged for automatic adjustment. On the stand is a Bunsen burner for a 200 h.p. boiler on a river raft belonging to the London County Council. Contrasted with this is a small burner for the Locomobile and other light steam cars, thus enabling users of such vehicles to substitute kerosene or ordinary heavy oil for petrol, and so securing some advantages in economy and rendering it impossible for the burner to light back. The Clarkson and Capel radiating, condensing, and cooling tubes are shown made up in several forms of coils for cooling the jacket water on petrol cars or for condensing the exhaust steam on steam vehicles or stationary steam plant. These are made for tricycles, voiturettes, and cars up to the size of the 50 h.p. racing cars. The tubes are constructed of light copper tube corrugated spirally. On the outside of the tube is wrapped a special coil of tinned electrical wire that is subsequently soldered to the tube. The result is a very light yet strong radiating tube, claimed to be 30 per cent. more efficient than filled tubes of same size length for length. The Clarkson Syndicate have also a light steam car running in the arena, using petrol as fuel instead of the spirit.

Messrs. Anderson, Anderson and Anderson, Limited, 37, Queen Victoria Street, E.C., have an attractive showcase in which are shown numerous specialties in waterproof goods.

Their wind and dust-proof garments are well calculated to please both lady and gentlemen motorists, and among their novelties is an "automobile kilt," which affords ample protection for the knees and seat. It opens at the side, a wide lap affording ample protection from wind or rain. Knee rugs and aprons in box-cloth, rubber, leather, and oilskin are also shown, as well as the firm's "anti-vibrate" cushions for motoring. A good selection of indiarubber mats and waterproof covers for motor vehicles completes a very representative display in the arcade.

Messrs. Brampton Bros., Ltd., of Oliver Street Works, Birmingham, have on view specimens of their block and roller chains for motor-cars. These are now so largely used by motor-car builders in this country and on the Continent as to render any lengthy description unnecessary. Mention should, however, be made of a chain which is on their stand, having been made to an unusual specification. It has a 4 in. pitch, the rollers are 2½ in. in diameter, and the rivets 1½ in. Messrs. Brampton are prepared to supply motor chains of this or any other pitch. They have a good display of chain wheels of gunmetal and mild steel, and point with pride to many testimonials they have received from well-known motorists.

The Singer Cycle Company, Ltd., Coventry, make an interesting display of their motor-bicycle and tricycles for both ladies' and gentlemen's use. As these were described in our report of the National Show in December last, it need only be mentioned that the engine, carburettor, gearing, magneto-electric ignition device, and in fact everything additional to an ordinary cycle (except one lever and its connections) are contained in the back wheel of the bicycle or the front wheel of the tricycle. All working parts of the engine are of easy access, and there is a marked absence of complications. Small detail improvements since our last description are to be found in the fitting of an adjustable mud deflector to the rear wheel to prevent mud being thrown up on to the engine and its parts, and an oil catcher below the motor. Another little modification is to be found in the provision of a twisting handle on the handle-bar, this handle controlling the motor through connecting rods, a much more convenient device than the plain lever formerly employed. The identical machine which took part in the Easter Volunteer manoeuvres, and which has covered a distance of 200 miles in one day, is on the stand, and attracts much attention. Three machines—two bicycles and a trike—are kept on hand for demonstration purposes in the arena, the performance of the lady rider—Mrs. Narraway—on the two-wheel machine being particularly noticeable.

Messrs. Joseph Lucas, Limited, of Birmingham, have a bewildering display of accessories, lamps, oilers, sparking plugs, terminals, horns in silver, brass, and bronze, calculated to split the ear of the deafest and most hardened disturber of traffic that ever loitered in the King's highway; in short, everything that break down, wear and tear, or police regulation could possibly demand. A "Two-Stage" motor pump (Fig. 34) exhibited claims the advantage of rapid or easy inflation, as may be required. By using the larger cylinder the former is gained. The piston used in this process may be attached to, and become, in fact, part of the cylinder; a smaller piston, till then inside the larger, coming into play produces the less laborious, if slower, inflation. A

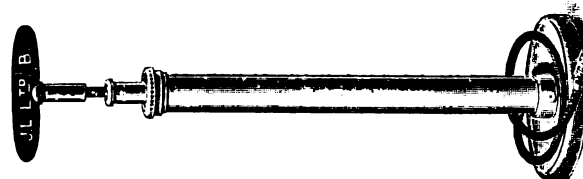


FIG. 34.—THE "TWO-STAGE" PUMP.

lifting jack, 8½ in. when closed, and opening to 15 in., might almost be described as a pocket instrument, though capable of lifting 20 cwt. Its larger brother is 11½ in. when closed, and opens out to 21 in. A tire repairing outfit in a neat wooden case, measuring 5½ in. by 2½ in. by 1½ in., contains all that the most troublesome tire could demand.

(To be continued.)

EXHIBITION ECHOES.

THE Duke of Devonshire and Lord Wilton were among the visitors to the show on Tuesday, the latter going for a spin round the arena in one of the Daimler Company's cars.

THE news that Her Majesty the Queen's electrical car was on view seems to have spread like wildfire. It would be difficult for us to say how many times we have had to answer the question—"Where is the Queen's car?"

WE understand that the huge steam caravan of Messrs. Turgan and Foy, which has been the centre of attraction in the Minor Hall, has been sold to a Scotch gentleman, who intends to use it for shooting parties in the Highlands.

It really is astonishing with what rapidity the average man picks up the ins and outs of anything new. We heard one explaining the other day that the radiator of a motor-car existed for the purpose of preventing little boys taking free rides!

THE *Daily News* reporter was very severe on the firms that were late on the opening day—a fact they will probably note on another occasion; for on Saturday we heard of more than a score of purchases, some of them running into four figures.

THE coming tour in Ireland of the Automobile Club seems to have awakened considerable interest in automobiles in the Sister Isle, more than one exhibitor having remarked to us that the number of inquiries for motor-cars on the part of Irish gentlemen is most noticeable.

AS was to be expected, doctors have been well represented among the visitors to the Show. The number, however, has exceeded expectations, one exhibitor telling us that 33 per cent. of the enquiries he has received for cars were from members of the medical profession.

THE people of Islington and the district evidently appreciate the presence of the motor-vehicles in their midst, and although hundreds of cars have journeyed through the main streets to the Agricultural Hall not a single accident has occurred—nor have we heard of the startling of a single quadruped.

A CASUAL visitor going along the Upper Street on Monday would not have imagined a motor-car exhibition was in progress. In front of the main entrance there were two long lines of fashionable carriages, all splendidly horsed. Their owners were in the exhibition examining and, in many cases, purchasing motor-cars.

A *chauffeur* who has been to every Exhibition and automobile event of any importance in both England and France during the past two years, remarked to us that never had he seen such a sight as the yard at the Exhibition has presented any day during the past week. "Motor enthusiasm is great in France," he remarked, "but this beats all!"

MR. W. J. PEALL, the well-known billiard player, who is now one of the most enthusiastic of motorists, kindly played an exhibition game of billiards before members of the Automobile Club in one of the rooms off the Gallery on Wednesday evening. Mr. Peall's handling of the cue was much enjoyed by the thirty or forty members who assembled. We may add that Mr. Peall will give another exhibition game to-day (Saturday), at 5 p.m.

WHILE speaking of Mr. Peall, we may mention that he is about to receive delivery of a 12 h.p. Daimler, which will make his third car. Mr. Peall has been very well pleased with his well-known light green 6 h.p. Daimler, he having driven it over 7,500 miles and only had one stoppage, that of half-an-hour to change a valve.

A LARGE block of rubber in the raw state, resembling an overgrown football, but weighing 6½ cwt., and valued at £140, which is to be seen amongst the exhibits of the North British Rubber Company, suggests an industry to which the Englishman bent on going abroad might turn his attention with advantage. Rubber grows freely almost anywhere in South America; trees are ready for tapping two or three years after planting, and the demand for the raw material is likely to increase. Indeed, it is even now outstripping the supply.

"FAMILIARITY breeds contempt," and the awe, not to say fear, with which the motor-vehicle has hitherto been regarded in this country by a large section of the public shows signs of breaking down. In the Hall the various motor-cars moving to and from the arena excited no consternation amongst the promenading crowd. If anything, the boot was on the other leg—people were not disposed to budge so much as an inch, once having become convinced that the motor-car is really inoffensive and quite tractable. Let us hope that familiarity with its habits will not reduce the motor-car to the deplorable status of the cycle in the seventies of last century.

WELL-CHOSEN was the venue of a pleasant social function which took place on Wednesday evening at the "Welcome" Club, in the Hall, the scene of the Automobile Club's greatest triumph, and to the distant accompaniment of the musical whirl of the motor-cars in the arena, and the murmur of a multitude of enthusiastic spectators who watched their graceful evolutions, members and friends to the number of a hundred dined under the genial chairmanship of Mr. Robert Wallace, K.C. After the health of the King, proposed and drunk in a manner becoming loyal subjects, the Chairman congratulated the Club on its splendid Show, but more particularly on the interest taken in it by the general public, and concluded by toasting all present. Mr. Staplee Firth gave "Our Chairman," responded to with full honours. The Chairman rose once more to announce that speeches were not the order of the hour, though he ventured on a caution, briefly summed up in a few words, "Don't raise the dust." The dust, he remarked, was made by the hammering of horses' hoofs on the hard high-roads, and there it was left. Still it was accounted a crime to motorists who raised it. He thought it would be better if for the present the drivers of broad tired motor-cars would stop at home on dusty days. Referring to the much belaboured question of frightened horses, the Chairman narrated an experience of his own. Stopped on his motor-car one day by a constable regulating traffic, he noticed the restiveness of a horse beside him, which the unsympathetic and somewhat rough efforts of its driver and the constable could not induce to proceed. Requesting both to stay their efforts, he spoke a few soothing words to the animal, which trotted quietly off, quite reassured. The moral of the anecdote is, of course, that tact and good temper on the part of the motorist will do more than anything else to break down the prejudice which still exists against him and his car in some benighted minds. A letter from Sir Francis Jeune, regretting his unavoidable absence from the dinner, was read by Mr. Johnson, and the party broke up.

A PARISIAN cripple, who formerly lived on charity and went from one place to another in a small truck, which he propelled by hand, using two small sticks, has succeeded in buying a specially built motor-car. Now he flies along the streets and is especially engaged by tradesmen as an express messenger. He is said to be proving a serious competitor to the official telegraph, post and parcel service in the district.

MR. D. W. BLAINE, a farm implement dealer of Pratt, Kansas, is now using a motor-car in his daily business. When the vehicle made its first appearance in the district, farmers from far and near drove in their buggies to see it, and were quite delighted when the owner took them for a free drive. Mr. Blaine who is quite enthusiastic over his experiences, says: "I have found that I can get through with three times as much business with the horseless as I could with a horse-drawn buggy."

AT THE EXHIBITION.

BY "WANDERER."

FIVE minutes after I had presented my brick-red ticket at the turnstile through which I was admitted last Saturday to that singularly hideous building, the Agricultural Hall, I was welcomed with a cheery smile by my friend Cordingley, the excellent *impresario* of the Motor-Car Exhibition. There was a "Will you walk into my parlour? said the spider to the fly" look in his eye as he led me into his office. This materialised into, "I wish you'd do me a column or two about the Show. But leave the technical stuff to us." In my charity I agreed to do so, and started round the Hall to pick up "copy." The first thing of interest I came to was a pretty girl selling programmes. She was so pretty that "bang went sixpence"—a bad start, especially as it was full of the "technical stuff" that was taboo for me. The next thing I came to—I cannot explain this—was the same girl selling the *Motor-Car Journal*. I bought two copies, although I had read every word of the paper the day before. Pulling myself together, I went to the telegraph office and wired to several friends, "Splendid show, come up at once." I then thought I would go round and have a look at it.

I SAW much that was of very great interest to me, but that I may not set down here, for it had all to do with carburettors, transmissions, ignitions and other things that I suppose are technical. I explained this trouble to a friend, who said, "The action of C_2H_5OH on CO_2 in suspension in water is very interesting. Let us consider it carefully by experiment. Then you can write about it, as it isn't exactly technical." The experiment was in every way successful, but as I have not the pen of my friend The Pitcher, I cannot make even a paragraph out of it.

I SAW all sorts of distinguished people, whose presence will doubtless be chronicled in some other part of the *M.-C.J.*, as most of them were members of the Club. I had an interesting chat with M. Canello about his eight-cylinder car, which is to win the 10,000 francs, and I listened to him so sympathetically that he took me down to lunch at the Trocadero, where we discussed technicalities to our hearts' content.

I WENT back to the Show in the afternoon and found an enthusiastic *confrère* dragging a charming but very tired wife from car to car. "Doing it thoroughly, old chap," he said. He was. "But I don't expect to get a tenth of it done to-day." This I believed, as after an hour's hard work he had only done a Locomobile and a Mayfair, and was at about the eighth nut of his first Benz. "But we'll come early on Monday and spend the whole day at it." His wife staggered faintly into the sympathetic arms of a *mannequin* in a wonderful fur coat.

I WENT up again to the exhibition on Monday afternoon, and was conveyed round the arena three times. I then went into the small hall, where I met Mr. Panmure Gordon, the great financier. He told me he intended to get the best kind of motor-car. This I believed, as up to now he has had the best kind of everything else there is. Later I ran into the arms of a lesser light in the financial world, Mr. Edgar Pulbrook, who unfolded to me a tale of woe about his De Dion voiturette and Virginia Water, the moral of which was "two special Scotches and a Polly split." And then to bed, as old Pepys would have said.

ON Tuesday morning, being thoroughly tired of motor-cars, I decided not to go out, but to sit in front of my study fire and read a book about horses. I had hardly settled down when my man brought me in a telegram: "Meet me exhibition 12.30. Hales." Now as Hales is that very brilliant Australian journalist who went to South Africa for the *Daily News*, and as he talks well and is a prince of good fellows, I got into my boots and a hansom cab and went up to the Hall via a *Pernod* at the Café Royal. On my way I made up a little plot, in which the chief

players were that programme girl, we two journalists and a sixpence—his sixpence; but I am sorry to say it did not come off. We foregathered between a mauve-coloured Panhard and a Décauville that were panting for the fray in the arena, and I took him round and put a lot of truth into him. He takes a great interest in motor-cars and has his own theories about their possibilities in war, which are very interesting, but which I am not going to write down here—not because they are too technical, but because he is going to write them himself elsewhere. And more power to him.

My friends evidently expect me to live at the Agricultural Hall for I have just—that is, midday Thursday—received another wire from an old friend, "Coming show this afternoon." And it is a horribly damp, yellow day, and my fire is very bright; but after all—he is sure to buy a programme, and I have still a ticket left.

THE Automobile Club of Florence, Italy, is organising an international meeting for June 2nd, 3rd, and 4th next.

THE National Capital Automobile Club has promised to use its influence to induce all owners of automobiles to keep the speed of their vehicles within the legal limits in Washington, U.S.A.

THE Illinois Electric Vehicle Company have decided to go out of business, being unable to operate their carriages at a profit. This is the second of such concerns to take this course, the New England Electric Vehicle Company having closed several weeks ago.

GREAT interest has been aroused in Calcutta by the announcement that Mr. Jamsetjee Tata, the Parsee millionaire, is about to establish a public service of motor-cars between Boona and the hill station of Mahabbishwar, a distance of seventy-five miles.

AT the request of the French Touring Club, M. Pierre Baudin, French Minister of Public Works, has protested against the decision of the railway companies of France, in refusing to accept as ordinary luggage motor-cars weighing more than 150 kilogrammes.

THE Crest Manufacturing Company, Cambridgeport, Mass., is putting on the market a special petrol motor lubricating oil called Crestoline. The oil is claimed to have a high viscosity and a high burning temperature, qualities which are essential in an oil for explosive engine cylinder lubrication.

THE District of Columbia Commissioners recently proposed to frame a regulation compelling each automobile used in Washington to display in a conspicuous manner a number which would enable it to be identified by the police in case of trouble. The Automobile Club has protested vigorously against any rule requiring private vehicles to bear these numbers.

CAPTAIN LATKA, an officer of the Austrian general staff, in a recent lecture before the Military Club of Vienna, stated that an army composed of four corps and two divisions requires for commissariat and transport purposes for a seven-days' march 13,000 wagons, 26,000 horses and 14,000 men, and that the general use of motor-vehicles would enable 6,000 men to do the same work without horses.

MAJOR MAXFIELD, of the Signal Corps of the U.S. Army, has been ordered to Elizabeth, N.J., and Tarrytown for the purpose of determining the possibilities of securing a type of automobile that could be used for a telegraph repair wagon in the field. The use of automobiles in the U.S. Army in various connections is generally looked upon with favour by Lieut.-Gen. Miles, and the entire subject of the utility of the machines will be carefully gone over in the near future.

IN the course of a paper on "Automobiles in New York City," read before the members of the New York Electrical Society recently by Mr. G. H. Condict, consulting engineer of the Electric Vehicle Transportation Company, the author predicted that in a few years notices will be posted to the effect that no horses will be allowed upon the streets of New York, street cars will disappear, and the sidewalks will be elevated so that pedestrians will not be in the way of the electric, petrol, or steam vehicles that will then be in use.

HERE AND THERE.



Le Mois Scientifique et Industriel, a kind of technical monthly review published in Paris, has opened a London office at 30, Durham Road, Finsbury Park, N.

THE motor-car industry is showing signs of progress in India. A company has been recently formed in Bombay under the name of the Indian Motor-Car Company.

THE Bexhill District Council has granted a licence to the Bexhill Motor Car Company which proposes to run four motor-cars as omnibuses within the district.

THE Automobile Club has given a contribution of £25 to the Roads Improvement Association, and one of two guineas towards the Police Orphanage.

ON Monday next Mr. Shrapnell Smith will give a lecture on motor-cars before the members of the Scottish Automobile Club and the Royal Scottish Society of Arts in Edinburgh.

THE photos used in our last issue of the Control Contests at the Crystal Palace were reproduced from negatives kindly lent by Mr. E. M. C. Instone.

MESSRS. MILLS AND FULFORD, Coventry, have introduced a little trailing car for attachment to motor-cars and motor-cycles. The trailer is made in various sizes to suit either juveniles or adults, and is fitted with pneumatic or cushion tires.

IN forwarding us their new alphabetical pocket list of agencies at which their motor spirit may be obtained, the Anglo-American Oil Company call our attention to the large increase. In November last the agencies numbered 512. The April list to hand shows a total of 880.

YET another royal convert. This time it is the King of Italy who has ordered from a well-known French firm two 12 h.p. motor-cars. The elite of Italy will not be slow to follow an example which cannot fail to have beneficial effect on the motor-vehicle industry of the country.

MR. ERNEST HARTLAND, J.P., of Hardwick Court, Chepstow, whilst returning from Raglan in his motor-car with his wife met with an accident at the Star Pitch caused by brake failure. The motor-car ran into a hedge and was disabled, its occupants escaping with a few bruises and scratches.

Two young men, named Spalding and Page, riding in a motor-car along the Thorpe-road at Peterborough, lost control of the vehicle, which dashed into the wall of Thorpe Park, and was wrecked. Both passengers' injuries necessitated their conveyance to the infirmary.

THE horse appears to have accepted his fate and resigned himself to the inevitable. The Right Hon. Sir J. A. Macdonald counted the number passed whilst returning last week from Dashwood, Hill. Of 1,442 horses only three took any notice of his car, and not one of the three shied or showed any signs of alarm, all being quite amenable to their duties.

A LETTER which appeared in our correspondence column last week, in which the writer complained of being unable to obtain petrol at Brighton on Sunday, has drawn a reply from Mr. James Miles of that town, who is as willing to supply petrol on a Sunday as on any other day. He informs us that he holds a large stock at his dépôt, 1, Trafalgar Court. If not found there on a Sunday he is not far off, 22, Argyle Road, the first turning on the right after passing the railway viaduct on entering the town from London being his private address.

WHEN the motor-car made its first appearance in the Philippine Islands, the natives were quite overcome and regarded the end of the world as near at hand. An old native of an ingenious turn of mind, however, solved the great problem that had so upset his brothers and sisters by stating that the car was built on the plan of the modern hand-car used by the President of the Manila and Dagupan Railway, when on his tours of inspection, and that hidden inside were several big, strong Americans, who were working the lever that gave the propelling power. This solution gave the greatest satisfaction to the listeners.

THE Automobile Club of America is organising a run to New Haven, Conn., for May 25, to occupy two days.

IT is announced that a syndicate is being formed to run a line of motor-omnibuses in Sydney, N.S.W.

THE Automobile Club *garage* in Prince's Street, Westminster, adjoining the Royal Aquarium, is to be opened to-day, the 11th inst.

THE fourth run of the season of the Yorkshire Automobile Club will take place on Sunday, the 12th inst., from Bradford to York. The meet takes place at Manningham Park at 9.15 a.m.

AT a meeting of the Penistone Council it was decided to write to the various firms for catalogues and terms for payment in instalments for a steam motor-car.

A COMPANY has been formed in Lerwick for the purpose of purchasing a motor-car, which it is proposed to run between Lerwick and Scalloway.

THE Mikado of Japan has been presented with an electrical motor victoria by Japanese subjects in America. The Mikado is said to be very proud of his new vehicle, and can be often seen in the streets of Tokio.

MR. A. L. DYKE, who was formerly manager of the St. Louis Automobile and Supply Company of St. Louis, U.S.A., has now embarked in business for himself at Linman Building, St. Louis, and will continue to furnish motors, running gears and carburettors, and will also handle all kinds of automobile supplies.

THE *Daily News* considers that "if those who still cling to the superstition of the horse will compare the behaviour of the motor-cars with that of the equine relics on the Epsom road on Derby Day, they will be moved to change their opinion regarding the relative merits and demerits of horse-drawn and self-propelled vehicles."

IN addition to the two electrical vehicles referred to in our last issue, we learn that Mr. Harrison Benn, of Bradford, one of the vice-presidents of the Yorkshire Automobile Club, has ordered a 12 h.p. Serpollet steam car, delivery of which he expects to be made during the present month.

WESTON MOTORS, of 14, Mortimer Street, London, W., have just furnished us with an abridged list of their motors, and an intimation that their complete catalogue is now in the press. The list contains a summary of the many advantages claimed for the Weston. First amongst these is rapidity in starting; the time required for this, it is urged, is less than is required to harness a horse. "Start it with a match" is the motto of the firm.

THE United States Post Office Department has issued an order for the establishment of an automobile mail service between the city post office in Buffalo and the postal station on the grounds of the Pan-American Exposition. Electrical vehicles will be used, and not more than seven and not less than five round trips a day are to be made.

THE Riker Electric Vehicle Company, Elizabethport, N.J., have just finished a new petrol motor. It is a two-cylinder engine having water jackets cast solid with the cylinders. The cylinders are 4 by 4 inches, and the engine, running at 850 revolutions per minute, gives 9 brake horse power. The motors will be made in two sizes, 8 h.p. and 16 h.p. The carriage on which they will be used will have a *tonneau* body, a type which is gaining much favour in America. The motor will be mounted on the front under a suitable bonnet, while there will be a chain drive on each of the rear wheels.

AT the last meeting of the Committee of the Automobile Club, a letter was submitted from the Anglo-American Oil Company as to the difficulties raised by District Councils to the granting of licences to stock motor spirit. The Committee decided that the Anglo-American Oil Company should be asked whether the district authorities refuse to grant licences, provided that the regulations are complied with, and whether they can inform the Club of any specific cases in which licences had been refused although the applicant was prepared to abide by the regulations.

THE FORTHCOMING LIVERPOOL HEAVY VEHICLE MOTOR-CAR TRIALS.

On Monday last, Mr. E. Shrapnell Smith, Hon. Sec. Liverpool Self-Propelled Traffic Association, gave an address on the above subject to the members of the Incorporated Chamber of Commerce of Liverpool, from which the following is an extract :—

The members of this Chamber were addressed on the subject of "Motor-Vehicles for Heavy Traffic" on September 9, 1896, by Mr. Worby Beaumont, when the concluding piece of advice given was—"Stick to your horses for the present." Since then the Liverpool Self-Propelled Traffic Association has been successful in directing public attention to the important future which lies before modern applications of mechanical power to goods haulage on common roads. It is generally well known how the wheels of the vehicles which competed in the 1898 trials proved structurally defective when subjected to the hammering action of granite sets and cobble-stones, whilst other minor troubles, *e.g.*, with the condensers and in respect of adhesion, justified that "sitting on the fence" which was the policy adopted by our Liverpool teamowners and ship-owners, and by Lancashire manufacturers as a whole. The second trials, which took place in 1899, provided satisfactory evidence that the tire and adhesion difficulties had been overcome, for none of the wheels gave the smallest trouble, and five out of the six competing vehicles successfully climbed, both unladen and laden, Everton Brow, Brow Side, and Rupert Lane, where the inclination varies between 1 in 9 and 1 in 13, the heaviest load taken up and brought down again being six and a-half tons. Yet these trials did not satisfy the judges that the time was ripe for any extensive or general adoption of motor wagons. The limit of tare is the great drawback to the undertaking of really heavy work, and here again has this Chamber done good service to the cause of automobilism by moving, and securing the adoption of, a resolution at the recent spring conference of the Associated Chambers. As a result, the memorial of the Automobile Club to the President of the Local Government Board will be supported by a second powerful memorial praying for the same modification of the 1896 Act, *viz.*, the substitution of a maximum weight per inch width of tire per wheel for the rigid and seriously repressive limit of three tons as the total tare weight of any vehicle.

In order to see whether manufacturers could improve their designs so as to produce an efficient vehicle under the three-ton limit of tare, the Association decided to allow an interval of two years between their second and third trials. The result has been that all vehicles have grown heavier, and there is now another strong argument in favour of the desired increase. We have, however, every reason to hope that the Engineer-Inspector who will represent the President of the Local Government Board at the forthcoming trials will be clearly satisfied that the extra weight involves no risk and possesses many advantages. In fact, we sincerely feel that our disabilities should be removed before the end of the present session, and it cannot be gainsaid that an increase is all important for the future development of road haulage. The average daily mileage of a motor wagon, when upon straightforward work, is from thirty-five to forty miles, and, whilst this distance, measured from many of our ports, brings one into sparsely populated districts, such range of action opens up great possibilities for Liverpool and a few other ports in particular.

We ask, not unnaturally, at what cost can this service be performed. The following tables of working costs have been compiled from actual results, and corroborate the judges' estimates of the previous trials and the curves of costs included in Professor Hele-Shaw's paper on "Road Locomotion" before the Institution of Mechanical Engineers twelve months ago.

ESTIMATES FOR LANCASHIRE OF THE AVERAGE ANNUAL WORKING COST OF MOTOR-WAGONS, ACCORDING TO ROADS AND LOADS.

Class of Work.	Weight Capacity.	
Per week { 70 hours under steam. 5½ days. 50 weeks per annum.	Self-contained Motor-wagon 4 Tons.	Motor-wagon and Trailer 7 Tons.
PRIME COST	£600	£675
Interest at 5 per cent. per annum ...	30.0	33.75
Depreciation at 15 per cent. per annum	90.0	101.25
Fuel—Furnace Coke at 15s. per ton ...	63.0	94.5
Wages—Driver at 35s. per week ...	91.0	91.0
Assistant at 17s. 6d. per week ...	—	45.5
Repairs and Adjustments ...	75.0	90.0
Water, lubricants and sundries ...	20.0	25.0
Insurances	12.0	15.0
Total per annum	£381.0	£496.0

Class of Work.	Weight Capacity.	
Per week { 70 hours under steam. 5½ days. 50 weeks per annum.	Self-contained Motor-wagon 4 Tons.	Motor-wagon and Trailer 7 Tons.
VEHICLE-MILES PER ANNUM (280 DAYS).		
(A) On bumpy and badly paved roads; 30 miles per day	8,400	8,400
(B) On average granite sets, &c., 35.0 miles per day... ..	9,800	9,800
(C) On good macadam; 45 miles per day	12,600	12,600
NET TON-MILES PER ANNUM.		
A..... { with full load... ..	33,600	58,600
" " { " ¾ " " " "	25,200	44,100
" " { " ½ " " " "	16,800	29,400
B..... { ,, full load... ..	39,200	68,600
" " { " ¾ " " " "	29,400	51,450
" " { " ½ " " " "	19,600	34,300
C..... { ,, full load... ..	50,400	88,200
" " { " ¾ " " " "	37,800	66,150
" " { " ½ " " " "	25,200	44,100
COST PER NET TON-MILE.		
A..... { with full load... ..	2·7d.	2·0d.
" " { " ¾ " " " "	3·6d.	2·7d.
" " { " ½ " " " "	5·5d.	4·0d.
B..... { with full load... ..	2·3d.	1·7d.
" " { " ¾ " " " "	3·1d.	2·3d.
" " { " ½ " " " "	4·7d.	3·5d.
C..... { with full load... ..	1·8 ¹ .	1·3d.
" " { " ¾ " " " "	2·4d.	1·8d.
" " { " ½ " " " "	3·6d.	2·7d.

These results are to be obtained from a motor capable of dealing with no larger unit than one of seven tons when fully loaded, i.e., four tons on the motor-wagon and three tons on a trailer, this being the maximum obtainable under the three-ton limit. Shortly, this weight of freight will be increased to not less than ten tons, i.e., six or seven tons on the back of the motor-wagon and three or four tons on the single trailer allowed by law. Increased economy of working will result proportionately, and I might here mention in passing that, although the motor-wagon deals with small units and has high charges per ton for the driver and attendant, it differs in several important respects from the traction engine, which is capable of hauling as much as thirty or forty tons of freight in three trucks. I place the principal features of the two systems of haulage side by side, in order that those who are interested may form their own opinions, but have no intention of abusing the traction engine, which suits many classes of work.

MOTOR-WAGON.

Lorry design.
Smooth tires.
Load, or major portion carried on platform.
Legal speed 5 m. p. hr. throughout.
One man in charge.
No time regulations apply.
Each 4 or 7 tons has its own motive power and driver.
Economy with a load of 4 tons.

TRACTION ENGINE.

Locomotive design.
Ribbed tires.
Load hauled on trailing wagons.
Legal speeds 4 m. p. hr. in the
country, and 2 m. p. hr. in towns.
Three men in charge.
Operations hindered by limits upon
times of working.
Clumsiness of distribution at
termini.
Large trains essential to economy.

Town Haulage.

It is very difficult to give comparative figures for horse-drawn *versus* motor-wagon traffic. For town work a large number of users have found that one motor-wagon will do the work of three two-horse drays. The inclusive cost per annum is that for a service rendered upon average granite sets, and, from the table given earlier in my address, proves to be £381, even if the vehicle travels as much as thirty-five miles per working day. Hence, the cost per horse, inclusive of depreciation, repairs to lorries and gear, wages, fodder, bedding, veterinary attendance, farriery, stabling, and all other charges must not exceed £64 per annum to be as economical.

The Forthcoming Trials in Lancashire.

Passing now to the arrangements for the trials of motor-vehicles for heavy traffic which are to be held from the 3rd to the 7th of June, it is satisfactory to find that there will probably be not less than thirteen vehicles taking part, against six in 1899 and four in 1898. The classification and entries are as follows —

CLASS A.—Load, 1½ tons; maximum tare, 2 tons; minimum level platform area, 45 sq. ft.; minimum width of driving tyres, 3 inches; speed, 8 miles per hour.

Official
No.

A 1.) Geo. F. Milnes and Co., Ltd., (Motor Department), London.

A 2.) CLASS B.—Load, 5 tons; maximum tare, 3 tons; minimum level platform area, 75 sq. ft.; minimum width of driving tires, 5 inches; speed, 5 miles per hour.

Official
No.

B 1.) The Lancashire Steam Motor Company, Leyland.

B 2.) The Mechanical Transport Company, 165, Cromwell-road, S.W.

CLASS C.—Minimum load, 5 tons; no tare limit; minimum level platform area, 95 sq. ft.; minimum width of driving tires, 6 inches; speed, 5 miles per hour.

Official
No.

C 1.) The Thornycroft Steam Wagon Company, Limited, Chiswick.

C 2.) C. and A. Musker, Limited, Liverpool.

C 3.) Simpson and Bibby, Cornbrook, Manchester.

CLASS D.—Minimum load, 4 tons; no tare limit; level platform area not specified; minimum width of driving tires, 4 inches; speed, 5 miles per hour.

Official
No.

D 1.) The Thornycroft Steam Wagon Company, Limited.

D 2.) T. Coulthard and Company, Limited, Preston.

D 3.) Mann's Patent Steam Cart and Wagon Company, Limited, Leeds.

D 4.) Simpson and Bibby.

The trials will be attended by prospective users from all parts of the United Kingdom and abroad. The principal visitors will include representatives of four Government Departments, the High Commissioner for Canada, and five of the Agents-General for the colonies. The Secretary of State for War has appointed the following seven officers:—Col. R. E. Crompton, R.E., Col. C. H. Scott, C.B., R.A., Lt.-Col. F. B. Elmslie, R.A., Lt.-Col. H. C. L. Holden, R.A., F.I.S., Superintendent of the Royal Gun Factory, Capt. E. F. Lindsay Lloyd, R.E., Capt. C. H. H. Nugent, R.E. The Indian Office have appointed Col. Scott, as above, who is Ordnance Consulting Officer for India, and Commander G. T. Wingfield, R.N., Superintendent of the India Store Department. The Postmaster-General has appointed Mr. Francis Salisbury, Postmaster of Liverpool, and the President of the Local Government Board, Mr. G. W. Willcocks, M. Inst. C.E. Lord Strathcona will be represented by the Assistant Canadian Government Agent, Mr. G. H. Mitchell, of Liverpool. The Agents-General who hope to come down are, Lt.-General the Hon. Sir Andrew Clarke, R.E., G.C.M.G., C.B., C.I.E. (Victoria and Tasmania), the Hon. Sir John Alexander Cockburn, M.D., K.C.M.G. (South Australia), the Hon. Sir Edward Horne Wittenoom, K.C.M.G. (Western Australia), and Sir Walter Peace, K.C.M.G. (Natal). A number of municipal corporations have also intimated their intention of sending deputations to watch the competition, whilst the pleasure side of automobilism will be well represented by the leading members of the Automobile Club, who have arranged to tour down to Liverpool direct from the Gordon-Bennett race in France.

Monday, June 3rd, will be devoted to hill-climbing tests at Everton and manoeuvring tests at the docks. The Liverpool depot, where the vehicles will be on exhibition, is the shed and open space at the west side of the George's Dock. The routes and approximate time-tables for the four distance trials will be as under:—

1901.

June 4th. Liverpool (George's Dock) depart 9.15 a.m., Widnes (Town Hall) arrive 11.45 a.m., Warrington (Patten Arms Hotel) arrive 1 p.m. Warrington depart 2 p.m. for Manchester via Hollinfare and Eccles. Manchester (Town Hall) arrive 5.15 p.m., Belle Vue (Longsight entrance), 6 p.m.

June 5th. Albert Square depart 9.15 a.m., Bolton (Town Hall) arrive (Wednesday) 12.15 p.m. Bolton depart 1.30 p.m. for St. Helens via Atherton, Leigh, Pennington, Newton, and Haydock. St. Helens (Town Hall) arrive 4 p.m., Liverpool (George's Dock) arrive 6.15 p.m.

June 6th. Liverpool (George's Dock) depart 9.15 a.m. for Wigan via (Thursday) The Horns, Knowsley, Rainford and Billinge. Wigan (Market Square) arrive 1 p.m. Wigan depart 2 p.m., Chorley (Cattle Market) arrive 3.45 p.m., Blackburn (Artillery Barracks) arrive 6 p.m.

June 7th. Blackburn (Artillery Barracks) depart 9.15 a.m., Preston (Friday) (covered market) arrive 11.30 a.m., Rufford (Hesketh Arms) arrive 1.15 p.m. Rufford depart 2.15 p.m., Ormskirk (Clock Tower) arrive 4 p.m., Liverpool (George's Dock) arrive 6.15 p.m.

Supplies of Pratt's Motor Car Spirit will be provided at the terminal depôts by The Anglo-American Oil Company, Limited.

Influential committees have been formed at the nine important towns embraced by the itineraries. The following gentlemen are acting as local honorary secretaries.

COMMITTEE.

HON. SEC.

Manchester Mr. Alfred J. King, J.P., 20, York Street.
Blackburn Mr. Joseph Watson, Secretary, Chamber of Commerce.
Bolton Mr. Arthur H. Ashworth, Birtenshaw, Bromley Cross.
Chorley Mr. A. Cottam, Assistant Town Clerk.
Preston Mr. W. Lewis Moore, C.A., 32, Ribblesdale Place.
St. Helens Mr. Arthur Robinson, The Brewery.
Warrington Mr. Arthur Bennett, C.A., Market Gate Chambers.
Widnes Mr. Max Muspratt, Gaskell Deacon Works.
Wigan Mr. R. O. Burland, J.P., Poolstock House.

In the "Particulars of Competition" it is stated that, "The Association will arrange with Lancashire manufacturers and Liverpool shipowners for the provision of loads of general merchandise, which will be collected, transported, and delivered free of any charge, as a demonstration that the motor-wagon is a practical and commercial success." The arranging of loads has been the least difficult of the work of organisation, for, contrary to what one might have expected, there appears to be more interest in the matter in East Lancashire even than in Liverpool.

During the discussion which followed the address, Professor Hele-Shaw remarked that the forthcoming trials could not fail to bring out points of the greatest importance to the users of heavy motor-vehicles. These trials did not bring out all the conditions under which motors had to work, for it was not all a question of performing certain tests satisfactorily; there was wear of the machine and other conditions to be taken into consideration. There were not in the whole range of engineering, not even in the case of torpedo boats, cases in which the strain upon the machinery was so great as in motor-vehicles. In these they had to compress into a small space very complicated machinery. It was not intended to hold another series of trials, as it was thought the Association had given the movement a fairly good start, and it now remained for the commercial people to push it on.

The Chairman said he was very glad that Professor Hele-Shaw called attention to the figures given by Mr. Shrapnell Smith. One could easily understand how very economical these motor-wagons would be in bringing coal, say, from the pits of the St. Helens collieries direct to the houses of Liverpool. They had spent a great deal of money in these trials, and this was a movement that Liverpool should be proud of, because this industry was being materially helped on by the aid of the Association.

Mr. A. Holt said that while he would not praise he would not condemn the motor system. He had taken great interest and worked for many years upon the subject of road traction, and they all knew what his ideas were.

Mr. Shrapnell Smith in replying said that with regard to Mr. Alfred Holt's scheme, motor-vehicles could be worked upon a small scale, and their number gradually increased and their scope enlarged if they were found successful.

At the end of the discussion a vote of thanks to Mr. Smith and the Chairman, Mr. Alfred L. Jones, J.P., President of the Liverpool Chamber of Commerce, closed the proceedings.

THE BRITISH MOTOR TRACTION COMPANY (LIMITED) v. SHERRIN.

In the High Court of Justice, Chancery Division, on Wednesday, before Mr. Justice Kekewich, the above action for an injunction to restrain the infringement of certain patents relating to motor-cars was heard. The plaintiffs were the registered legal owners of the following patents:—(a) No. 16,072 of 1893, granted to Wilhelm Maybach for an invention of "improvements in the methods of producing the explosive mixture in hydro-carbon engines"; (b) No. 19,734 of 1895, granted to Count Albert De Dion and Charles Bouton for an invention of "improved means or apparatus for electrically igniting and governing petroleum and other like motors"; and (c) No. 13,671 of 1899, granted to the British Motor Company and Charles Jarrett for an invention of "improvements in or relating to motor-vehicles." The plaintiffs complained that the defendant had imported and sold in this country motor-cars constructed in infringement of the above letters patent. The defendant did not deny the infringement, but disputed the validity of the plaintiffs' patents on all the usual grounds—viz., want of novelty, no good subject-matter, etc. Mr. Justice Kekewich granted an injunction in respect of all three patents, and he also granted a certificate of validity in respect of them.

ACTION BY MOTOR MANUFACTURERS.

In the Chancery Division of the High Court of Justice, last week, the case of De Dion Bouton (British and Colonial Syndicate), Limited, v. C. Manning and Sons, Limited, came before Mr. Justice Cozens Hardy. Mr. A. J. Walter, counsel for plaintiffs, stated the plaintiffs sought an injunction to restrain the defendants from using the trade names of De Dion and Bouton, or either of them, in connection with the sale of motor-vehicles and motors not manufactured by the plaintiffs, and to restrain infringement of copyright, and from issuing circulars similar to or only colourably differing from the circulars of the plaintiffs. Mr. Buckmaster appeared for the defendants, and it was arranged that the first part of the motion should stand over until the trial of the action, and the defendants without prejudice gave a perpetual undertaking not to infringe the plaintiffs' copyright in the circular complained of. Defendants also undertook to keep an account until the trial of all motor vehicles and

motors sold by them under the title De Dion and Bouton, or either of them. Mr. Justice Cozens Hardy assented to the arrangement.

FURIOUS DRIVING CASES.

AT Bedford Borough Petty Sessions Albert Brace was charged with furiously driving a motor-car on April 20th. Defendant pleaded not guilty. P.C. Lutetford stated that about 7.30 p.m. on the date in question he saw the defendant driving a motor-car at a furious rate, and to the danger of the people. The rate was between fifteen and seventeen miles an hour. He called on defendant to stop, but he did not, and on the return journey defendant told witness that he did not see him when he called on him to stop. Alfred Eaton said he was driving a young horse at the time, and the motor-car was travelling sixteen miles an hour. Eliza Wheeler, of Marston, said he was driving a motor-car at a furious pace, but she could not tell how fast it was going. The car passed between her cart and that of Eaton. Defendant stated that it was impossible to travel more than fourteen miles on a level road, with the engine running at full speed, and with an empty car. On this occasion he had eight passengers besides himself. He had thrown off the engine and the car was running with its own weight. Thomas Cource, son of the owner of the car, said he was on it at the time. It was travelling between nine and ten miles an hour. William Cource, owner of the car, said the speed limit was twelve miles an hour, although it was guaranteed by the makers to go fourteen miles. The Bench, after some deliberation in private, decided to convict, and fined defendant 10s. and 19s. 6d. costs. The Mayor said he happened to be an eye-witness of the incident, and he trembled as he saw the car go through the carts.

AT the City of London Court last week Mr. Louis Sinclair, M.P., of Romford, Essex, was summoned for driving a motor-car in the City to the common danger. P.C. Honour stated that Mr. Sinclair drove his motor-vehicle at a very rapid pace at the corner of Cornhill during a press of traffic, and nearly ran a gentleman down. P.C. Gurney said Mr. Sinclair went down Leadenhall Street by St. Mary-axe at a pace of ten to twelve miles per hour on the wrong side of the cab rank, outpacing all the trotting traffic. He put up his hand and called out, "You are on the off-side," but Mr. Sinclair looked straight at him and kept on. He followed, but could not catch him, and witnessed the collision. Mr. Sinclair said that by St. Mary-axe the axle of the motor-vehicle broke, and it was impossible to drive it except by pedalling. It was a quadricycle, and the utmost he could get out of it by pedalling was three to four miles an hour, as the motor was disjointed. An elderly gentleman stepped off a bus backwards, and the motor-car just touched his leg. It was almost stationary, as he had great difficulty in starting it, and the gentleman was uninjured. Master Harry Sinclair gave evidence similar to that of his father, and said he was sitting on the front of the quadricycle with his parrot in a cage. David Smith, engineer, said he sent two men to Cornhill, and they had to push the car, as they could not pedal it. Mr. Holt (for Mr. Sinclair) eulogised the City police and regretted the conflict. He suggested the police had been mistaken. The summons was eventually dismissed.

IN the King's Bench Division, before the Lord Chief Justice and Mr. Justice Lawrence, the appeal of Smith and Boon was heard. In November last appellant was fined £5 for driving a motor-tricycle at an excessive rate through Esher. It was stated that he was driving at the rate of from eighteen to twenty miles an hour. This he denied, and contended that there could be no conviction if no one was interrupted or affected by the speed at which he was riding. On these grounds he asked that the conviction should be quashed. The Lord Chief Justice said in his opinion the magistrates were right in coming to the conclusion that eighteen or twenty miles was not a reasonable speed in High Street, Esher, having regard to the traffic on the highway. Mr. Justice Lawrence concurred, and the appeal was dismissed.

AT the Lincoln City Police Court Frank Jeacock, Gainsborough, cycle agent, was summoned for not keeping his motor-car on the left or near side of Newland on April 25th. Police-constable Cook stated that defendant came down Mint Street driving a motor-car, and he went past the Crown and Anchor public-house on his wrong side. A telegraph message boy had to get off his bicycle, and the defendant ran over it. Defendant admitted that he was on the wrong side, but said the other side of the road was greasy on account of the fair. Defendant was fined 10s., and 5s. costs.

BEFORE the Norman Cross (Peterborough) magistrates Mr. John E. Hutton, of Northallerton, was summoned for driving a light locomotive on the Great North Road at a greater speed than fourteen miles an hour. Defendant did not attend. It was alleged that defendant's car attained a speed of about thirty-five miles an hour. A railway signalman said defendant scattered a wedding party near Wansford Station, and nearly ran over a child. The Bench imposed the maximum fine of £10, with £3 17s. 6d. costs. The chairman remarking that this was one of the worst cases that had been brought before them.

AN OVER-ZEALOUS OFFICER.

As our readers know, Mr. J. Colman, of Woking, has for some time past been carrying His Majesty's mails on a motor-car between Woking Post Office and West End, Chobham. Both car and owner have attracted the attention of the police by committing an imaginary breach of the law.

While the mails were being unloaded at Woking on the first day of the experiment, an officer asked the driver if there was any name on the vehicle, and, on ascertaining that there was none, reported the circumstance. In due course Mr. Colman appeared before the Guildford County Bench "for that he on April 9th, at the parish of Woking, did contravene the regulations of the Local Government Board, made in pursuance of the Light Locomotives Act, 1896, by allowing a locomotive used for the carriage of goods to be used on the highway there without having the name and address of the owner legibly painted thereon."—Defendant pleaded not guilty, on the ground that he was at the time on the King's service—and handed to the Bench a communication from the Solicitor to the G.P.O., stating that it should be pointed out to the Magistrates that the motor-car was not being used for carrying goods, but solely for the conveyance of His Majesty's mails, and was therefore on the same footing as other vehicles similarly employed.—After consultation, the Bench dismissed the case.

WITHOUT A LIGHT.

AT St. Albans City Sessions, Benjamin Swan was summoned for driving a motor-car without a light at St. Albans on April 25th.—Defendant did not appear.—P.C. Cowan said that he was on duty near the Great Northern Inn, London Road, at 10 p.m. on the night in question, when he saw the defendant driving a motor-tricycle without a light. Defendant said he had only come from his shop in the London Road, and he never thought anything about a light.—Fined £1, including costs.

THE EDINBURGH AUTOCAR COMPANY.

AT a general meeting of the shareholders of the Edinburgh Auto-car Company, Mr. John MacDonald (chairman) made a statement, after which a director recommended that they should gradually and carefully wind up the concern, taking time to realise the assets to best advantage, and endeavour to dispose of the business as a going concern, if possible. Other motions to wind up immediately, and to carry on the business, were proposed, but the majority voted in favour of the directors' recommendation, which was adopted.

THE introduction of the motor-car into Klondike is hailed with delight by the inhabitants. Messrs. Clear and Dunham, of Cleveland, Ohio, are the pioneers. The cars, which are built like a three-seated surrey, to accommodate twelve people in all, are propelled by 15 h.p. motors. There is also room on the cars for small packages for the different mining camps on the daily run, and the motor-cars run on the trails and climb the hills without the slightest difficulty.

TO CORRESPONDENTS.

All communications intended for insertion in this Journal or relating to Editorial matters should be addressed to THE EDITORIAL DEPARTMENT, MOTOR-CAR JOURNAL, 39 and 40, Shoe Lane, London, E.C. Letters must in all cases be accompanied by the name and address of the writer, as no notice will be taken of anonymous communications.

The Editors cannot undertake to return MSS. or drawings, although every effort will be made to do so in the case of rejected communications. Where such are regarded as of value, correspondents are requested to retain copies.

The Editors do not hold themselves responsible for the opinions expressed by their correspondents, or for statements and facts which do not appear in the editorial columns.

The Editors and publishers beg also to state that they will accept no responsibility for unsolicited contributions, even if used, unless payment for same is directly specified in forwarding, and the terms arranged before publication.

To insure insertion communications and contributions must be in the Editor's hands by Wednesday forenoon of the week in which the same are intended to appear. Disappointment may be caused by non-compliance with this rule, and to avoid this earlier receipt, if possible, is necessary.

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THE Motor-Car Journal.

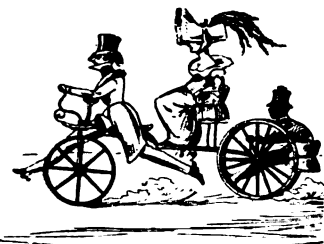
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COMMENTS.



MR. C. CORDINGLEY would take this opportunity of returning thanks to the many kind congratulations which he has received from motorists throughout the country on the success of the Automobile Club's Exhibition. These have come from exhibitors and visitors, from members of the Club, and country folk, who rarely come to town, and will be treasured as evidence of the universal

kindly interest felt in an effort to popularise the automobile, and also provide intending adherents of the movement with an opportunity of seeing the latest and the best that money can provide. The organisation of such an Exhibition and obtaining the necessary publicity to ensure good results to exhibitors is no light responsibility. Undertaken with a full knowledge of the valuable help that would be rendered by friends of the *Motor-Car Journal*, the result has justified the effort, and demonstrated that good fellowship can enter into business relations, and that commercial circles are often radiated with perfect harmony and entire friendship.

The Catalogue.

JUDGED by the catalogues sold during the exhibition and the number ordered by readers in the provinces who were unable to come to town, the interest in the automobile has grown quite a hundred-fold during the year. The compilation of such a catalogue necessitates care and caution as well as the prompt co-operation of exhibitors. These three qualities being combined, resulted in a catalogue which will be of permanent interest. In time, the catalogues of these annual displays will constitute a capital record of the progress of the industry, chronicling new firms and indicating the years in which improvements were made in details as well as changes in design. A few copies of the catalogue are left for those anxious to have a set of these annual tributes to the growth of the trade.

To Dust or not to Dust.

OUR subheading is an automobilist's variant of Hamlet's famous soliloquy. The dust nuisance is an irritating, penetrating, unpleasant thing which is associated with all forms of road locomotion. It arises from the state of the roads and not from an inherent evil in vehicles, whether drawn by horses whose hoofs raise dust in clouds, or automobiles, that seem to be regarded in some quarters as the only carriages associated with such an undesirable feature. On a dusty road the most elegant carriage and pair or the most fashionable four-in-hand will secure plenty of inconvenience to the riders, and it is creating a false impression to regard the automobile as distinguished in this respect.

Protection Wanted.

At the same time we recognise the desirability of manufacturers giving full attention to the matter. If they can obviate or lessen the evil, they will provide another feature of popularity for the automobile in securing a vehicle that is not only rapid in its movement, but clean in its disposition.

According to "Teuf-Teuf," in the *Express*, the King recognises this, and is prepared to appreciate the value of any expedient that will enable a ride to be taken without the occupant of the carriage being covered with dust at the end of the journey. In France we have seen an overhanging fabric screen of the same colour as the upholstery of the vehicle used to protect the rear passengers from the dirt of the road. Such a device is not, of course, adaptable to every form of automobile, but it is suggestive in one direction. Now that the touring season is beginning it seems an opportune time to bring the matter forward and whoever successfully encounters the difficulty will reap distinction and probably a royal reward.

The Position of the Patents.

THE result of the action which the British Motor Traction Company, Ltd., brought in the High Court last week with regard to their patents in connection with the Maybach carburettor, the Dion ignition and the De Dion gear has naturally further determined the directors in their policy of prosecuting cases of infringement—a fact which purchasers are not likely to overlook when acquiring automobiles. Mr. Justice Kekewich's decision is certainly likely to play a prominent part in the present position, and the licencees of the company, including the Daimler Company, the Motor Manufacturing Company, the Motor Power Company, Dion Bouton Ltd., Humber and Company, the Ariel Company, etc., will doubtless appreciate the effect that the judgment may have upon the industry. The British Motor Traction Company, Ltd., inform us that they are adding some notable improvements to motor-carriages, and that they regard the latest judicial decision as "the beginning of many great successes." We deal with the action of the trade in reference to Mr. Justice Kekewich's decision in another part of the present issue.

The Tilburstowe Climb to be Repeated.

ON Saturday, 15th June, of glorious memory, the English Motor Club will repeat their hill-climbing competition up Tilburstowe. Events will be arranged for every description of motor vehicles, and in each class there will be a handicap based on the horse-power and passenger-carrying capacity of the vehicles. Several entries have already been received, including some of the cars that will run in the Paris-Bordeaux and Paris-Berlin races. Entries must be posted not later than 8th June. The handicaps will be published in the *Motor-Car Journal* for 15th June.

Medical men and Motor-Cars.

AS further evidence of the growing interest, referred to last week, which the medical profession displays towards the motor-car movement, we call to witness the many pages devoted to the subject in last week's issue of the *British Medical Journal*. The writer, Mr. W. Worby Beaumont, M.I.C.E., urges the importance of a thoroughly reliable motor-car, in preference to some of the cheaper types of vehicles. The medical man, he contends, must save in the long run by substituting steam, petrol, or electricity, for horse-flesh, but let the trade for its own sake see that he has the best motor-vehicle that it can turn out, rather than the cheapest. The question of

THE GENERAL AUTOMOBILE AGENCY, D. Farman, Man., Garage open day and night, all cars in stock, 100-104, Long Acre, W.C.

cost is to the doctor, he continues, precisely that which the manufacturer himself faces when he considers the expediency of throwing out old plant, quite capable of turning out excellent work, but limited in producing power as compared with the new plant, which will cost a great deal and add to his capital outlay. In both cases the outlay means an increased earning capacity. The advantages and disadvantages of the three systems of propulsion in use are dealt with in a manner which cannot fail to prove instructive to all intending purchasers of motor-cars, medical or otherwise.

A Demonstration in Norfolk.

WEST NORFOLK motorists, who have lately suffered somewhat under the law as administered by the various "Benches" of their part, made the hearing of two recent charges of furious driving the occasion of a demonstration. In both cases Mr. Frank Morriss, of King's Lynn, was the individual charged, and as the particular Bench before which he appeared only convicted in one case, dismissing the other, there is reason to believe that the



HOW MR. MORRISS WENT TO PAY THE FINE.

demonstration was not altogether thrown away. The first of our illustrations, Mr. Morriss leaving King's Lynn for Grimston on the day the cases were heard, accompanied by the long-suffering and sympathetic motorists of the district, and the second shows the procession of motor-cars leaving the Court house, the latter being in the background. The particulars of the two cases will be found in another column.

Live Axles.

A NOTICEABLE feature of the Exhibition was the extent to which the live axle is being adopted on light cars. The principal advantage of its use is the facility it offers for an entirely enclosed gearing; and provided that the necessity is realised for a live axle being twice the strength of a fixed one, there are few objections to it. This need is due to the fact that an alternating strain may be taken as twice as destructive in its effect as a continuous one, and the conditions under which the live axle works need a large factor of safety. Another point that has never been alluded to, but is sufficiently obvious, is that the differential gear is exposed to several times the strain that it is under its usual conditions on a countershaft geared up to, perhaps, four or six times the number of revolutions that the road wheels perform, and therefore needs corresponding increase in dimensions. Nothing about a car suggests weakness so much as wheels splayed out under the load they have to carry, which is not an uncommon appearance with light cars, and recalls the Wardour Street dealer's reply to a customer who complained that the chair he had purchased had broken: "Why, someone must have sat in it!"

An Honest Confession.

WE were somewhat surprised when at the Show to hear a strong endorsement of our remarks concerning French and English carriage-work, from the manager of a well-known firm of coach-builders, who further asserted that the same comparison obtained in ordinary carriages, which were better designed and constructed, especially as regarded their ironwork, across the Channel; but to find such facts recognised by those concerned is the best guarantee of improvement. The interests involved, too, may not be merely commercial ones, as was suggested the other day by the sight of a small Locomobile, at the back of which a *tonneau* of large dimensions and solid build had been attached by a local builder. We should have been sorry to occupy it with full load without a preliminary investigation of the factor of safety of the rear axle!

Speed of Motor-Cars.

At a meeting of the County Council's Association, Mr. C. G. Milnes Gaskell (West Riding), on the question of "Roads in Relation to Motor-Cars and Traction Engines," asked whether the present regulations of the Local Government Board were sufficient. At present the cars were required to run at a proper pace not exceeding twelve miles an hour, while a traction engine could not go more than six miles an hour. Should these paces be increased or decreased? Should the drivers be licensed? Should some mark be upon the car? These were the three important questions for decision. Twelve County Councils were in favour of the reduction of the pace of a car from twelve to ten miles, and thirteen were against any reduction. With regard to traction engines, seventeen County Councils were in favour of the reduction of the pace from six to four miles, and four Councils were against any reduction; while seventeen Councils were in favour of the mark being carried, and only one against. No resolution was passed on the subject. In connection with the suggested alteration it is interesting to note the rate of speed permitted in other countries. France enjoys 19 miles in the open country and 12½ miles in towns and villages; Italy 15½ miles in the open and 6½ miles in inhabited districts; and Belgium 19 miles and 6¼ miles respectively.

A Suggested Competition.

DURING the period while the automobilist is debarred from satisfying the elementary sporting instinct of humanity—to get there first—competitions flourish, and nearly every desirable quality in a car—reliability, economy, power—to observe the law, has been the subject of distinct and separate test. But, notwithstanding improvement, now and then—more than now we may hope—a little, just a little, trifling adjustment is necessary. And cars vary exceedingly in the facility with which such adjustments are effected, as was borne in upon us recently when lining up some bearings in two cars. In one, the removal of half-a-dozen bolts was all that was necessary; in the other, twenty-eight bolts had to come out, and involved the search for some box spanners and ratchet brace especially designed for getting at out-of-the-way corners. Of course, the car that wants no adjustment is best, and, fortunately, to judge by the catalogues, there are many of them; but for the others, a repair competition in which the drivers should have to get at, remove, and replace certain specified parts, or rectify some supposed mishap—as, for instance, fired connecting-rod bearing, obstruction in petrol supply, broken valve spring, igniter, slipping clutch, damaged pump, foul valves, etc.—would bring out some important points in design that do not always receive the attention they should. It is noticeable, by the way, that we hear little now of obstructed petrol pipes unless caused by extraneous dirt; it will be remembered that this was not always the case, and probably improvement in the quality of the oil accounts for it; but it is a mistake all the same to have such pipes of too small diameter, or with inaccessible elbows in them. Small matters of this kind add little to the trouble of building a car, and much to the convenience of driving it.

Costs Compared.

M. PAUL MEYAN gives an interesting comparison in *La France Automobile* between the consumption of an 8 h.p. Panhard, on which he made a journey from Paris to Nice and back last year, and a 12 h.p. car of the same make, on which he accomplished the same trip this year. With the 8 h.p. Panhard he states that the cost was just over ten centimes per kilomètre, whilst this year over the same route on his 12 h.p. Panhard the cost was less than ten centimes per kilomètre. The whole distance covered was about 1,992 kilomètres, with a consumption of 364 litres of petrol and ten litres of oil, costing 187f. The journey took about forty-three hours, which worked out at the cost of 4f. per hour, the 8 h.p., however, costing scarcely 3f. In conclusion, M. Meyan states: "If the 12 h.p. Panhard costs more per hour, on the other hand, owing to its great speed, it is cheaper with regard to kilometric outlay. Therefore, the 12 h.p. Panhard is preferable to the 8 h.p. car on the main road."

Spur Gearing.

A DISCUSSION at the Philadelphia Engineers' Club on a subject of interest in automobile design namely, high-speed gearing, is reported in several of the technical papers. It is true that spur gearing as usually employed in motor-vehicles can hardly be qualified with this adjective, the peripheral velocity of a Daimler fourth-speed wheel being only about 1,000ft. to 1,300ft. per minute, in the case of a 6 h.p. car, while heavy gears in rolling mills and the like may have speeds of 2,000ft. to 4,000ft. Several of the points brought out, however, may be profitably considered by motor builders; among these are the importance (sufficiently obvious) of accurately cut teeth, and the fact that these should have no clearance, a state of things that it is to be feared cannot exist long under road conditions. It is also remarked that in heavy machinery it is inadvisable to have a gear-wheel too near to a fly-wheel, any change in the velocity of the latter causing injurious jar to the teeth unless the elasticity of a certain length of shaft is interposed. It would seem worth consideration whether some form of elastic drive, after the manner of the spring-driven sprocket-wheel tried some years back on cycles, might not be advantageously introduced into the gear-box of a car, to diminish the injurious effect of irregular propulsion or retardation. The quality of steel suitable for gear wheels occupied considerable attention, preference being expressed for the harder steels with from .05 to .08 per cent. of carbon. Here little parallel can be drawn with motor-car work, where a mild steel hardened is preferable; but there is too much tendency in this country to trust to rule-of-thumb workshop practice instead of scientific examination in the choice of materials. Some comments on the undesirability of bevel gears, where avoidable, on account of their sensitiveness to errors in alignment, are eminently suggestive in connection with the present tendency to make use of them in car design.

American Roads.

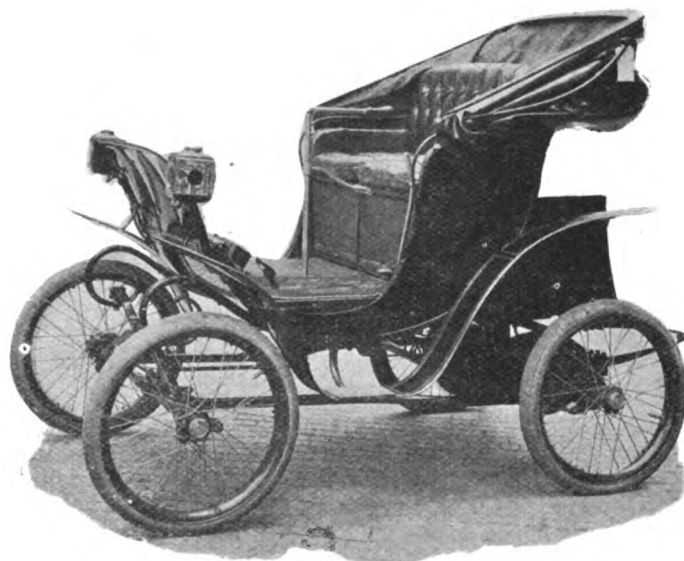
At the second annual dinner of the Automobile Club of America, Lieutenant General Miles congratulated the members on their efforts to improve the roads of their country. Good roads, he declared, were a sign of high civilization and an enormous economy to the country that possessed them, saving something like two-thirds of the cost of transit. The "mud-fiend" was referred to by the gallant General as swallowing up over £100,000,000. It seems an incredible amount, but America is a big place, and we know they do things in a big way over there. Mr. E. A. Bond, State Engineer, predicted the happy time, not so far distant either, when a great and well-kept highway would stretch from Maine to California. Roads, or the want of them, seem to be the question of the day amongst trans-Atlantic motorists. As General Miles remarked, the Romans made good roads, and commerce followed, but, unfortunately for America, the Romans never went there.

Road Racing in France.

IN his concluding letter to the *New York Herald*, on automobile racing in France, M. Leon Auscher sounds a note of warning to competitors and organisers alike. To use his own words, "I have noticed, not once, but over and over again, that, despite all previous warnings, racers rush through villages and townships, where no controlling offices are established, at lightning speed. There have, as yet—the inhabitants having been forewarned—been no victims of this imprudence, but any day an accident may occur, and then, good-bye to racing, if not throughout the whole of France, certainly in the region in which the accident has taken place." To obviate the risk of such a calamity, M. Auscher makes some practical suggestions, which the French Automobile Club would do well to consider. A more careful selection of routes, eliminating as far as possible crowded districts, is advised, as also is a compulsory speed limit whilst passing through villages.

The Queen's Electric Car.

IF anything were wanting to invest the pastime of motoring with greater popularity in ladies' eyes, it is surely supplied by the fact that Queen Alexandra has not only purchased for herself a "victoriette," but has learnt to drive it herself. Electricity is the motive force of the extremely smart little vehicle, with seats for two, that her Majesty has selected. The wheels are of the cycle type, with 3-in. pneumatic tires,



HER MAJESTY THE QUEEN'S ELECTRIC CAR.

rendering the car free from vibration or noise. Naturally, it has every accessory for comfort; the seats and back are upholstered in dark morocco leather, the floor is covered with rich carpet, and all the fittings and lamps are silver-plated. The vehicle, of which we give an illustration, was supplied by the City and Suburban Electric Carriage Company, Ltd.; it formed one of the attractions at the Show last week, having been sent up specially from Sandringham, whither it was returned on Saturday.

"Madame" on Motor-Cars.

OUR contemporary, *Madame*, takes a just and practical view of the difficulty which exists between motor-car drivers and County Councils on the speed question. The driver of any other vehicle, urges our contemporary, is as liable to shirk the responsibility of an accident as the motorist, if inhumane; yet no one has ever suggested numbering private horse-drawn carriages as a means of identification under such circumstances. The friction between legislative bodies and the promoters of a new industry is deplored as one of the reasons which keeps us so far behind other nations where enterprise is concerned.

Madame's concluding sentence is essentially womanly. "One thing everyone who lays any claim to humanity will be thankful for when motor-cars become general, and that is that heavy vans and carts will no longer be drawn by horses, and the sufferings we see every day in our streets endured by those over-driven, under-fed animals will be at an end for all time."

The War Office and Motor-Cars.

THAT the motor-car must supersede the horse-drawn vehicle has even become apparent to that most conservative of all offices, the War Office, to wit. The Secretary of State for War has offered three prizes, £500, £250, and £100 each, for the three best self-propelled lorries for use in military operations. Intending competitors must send in their names to the Secretary of the Mechanical Transport Committee, at the War Office, on or before September 1st, and trials will commence on December 4th. Full particulars will be found in another column.

Motor-Cars in the Manœuvres.

As a result of the recent correspondence between the Automobile Club and the military authorities, twenty-two motor-cars and cycles have been entered for service during the forthcoming autumn manœuvres at Salisbury Plain, for carrying staff officers and despatches, and keeping up the lines of communication. Two military members of the Club, Lieut.-Colonel Holden and Colonel Crompton, have drafted a scheme for consideration by the War Office. They suggest that the owners should be allowed the cost of fuel and repairs, with 10s. a day as personal expenses and 5s. a day for the mechanic. The military authorities, it is thought, should provide for the safe custody of the cars, and should find tent or other accommodation for the automobilist and his servant. Both the authors of this scheme are experienced soldiers and automobilists. Lieut.-Colonel Holden, R.A., is superintendent of the Gun Factory, Woolwich, and Fellow of the Royal Society. Colonel Crompton, R.E., has recently returned from South Africa, where he commanded the Electrical Volunteers.

The Liverpool Heavy Vehicle Trials.

REFERRING to the forthcoming trials of motor-vehicles for heavy traffic to be held next month by the Liverpool Self-Propelled Traffic Association, full particulars of which we gave last week, we understand that the Association is open to hire light motor-cars for the transport of visitors during the trials, June 4th to 7th. The Association will provide storage accommodation and petrol at Liverpool, Manchester, and Blackburn, and will also undertake the cleaning of carriage-work and wheels. Owners desirous of hiring their vehicles should communicate with Mr. Shrapnell Smith, Hon. Sec. Liverpool Self-Propelled Traffic Association, Royal Institution, Liverpool.

Vanish Suburbia!

"SUBURBAN" will cease to exist as a term of reproach. A well-known Society lady, who has a box at the Opera, travels to and from it in a motor-brougham, a feat far beyond the endurance of a horse, for her house is far beyond the four-mile radius. Suburban residences will become the rage with the spread of motoring, the *Onlooker* predicts. No one will continue to live in stuffy London when pure air and a charming garden, with other country pleasures, may be enjoyed within some half-hour's run of London.

Result of a Ride Round London.

WHEN the members of the West Riding County Council met to discuss a Memorial from a number of manufacturers and others interested in motor-cars, with respect to the proposed limitation of speed on highways, a certain wise Councillor, who had made a trip round London with

the Automobile Club, boldly took up the cudgel on behalf of motorists. So effectually did the proselyte wield the cudgel of reason that the proposed speed limit of ten miles an hour was not accepted by his brother Councillors. The Automobile Club is to be congratulated. With continued efforts there is little doubt that in time the mass will be leavened.

BRADFORD TO LONDON BY MOTOR-CAR.

PERHAPS the following account of a run I made on Saturday the 4th inst., from Bradford to London on my Jackson doctor's car, made by the Yorkshire Motor-Car Manufacturing Company, Ltd., may be of interest. The car was a 5 h.p. double-cylinder, water-cooled one, to carry three persons, and we were laden with two passengers and about twelve stone of luggage. We left Bradford on Saturday at 1.30 p.m., intending to reach London at 1.30 p.m. on Sunday, taking things easily by the way and not grudging ourselves time for meals, etc. We arrived at Doncaster, thirty-six miles, at 5.15, the only stoppage having been one of twenty minutes to fit a fresh ignition tube, in place of the old one, which cracked. At Doncaster we stayed two hours for tea, saw several cars about the town, and got a supply of lubricating oil. 7.15 saw us again under weigh, with Newark, thirty-nine miles, as our destination for supper, which we reached without any incident at 10.15, except a long wait at a level crossing where shunting operations were in progress, so that this was a stretch of fine travelling—thirty-nine miles in just over two and three-quarter hours. At 11.45 we left the courtyard of a most hospitable and comfortable hotel with a supply of sandwiches, and well wrapped up for the next run of eighty-three miles to Biggleswade, where we expected to breakfast. The full moon was now up and the nightingales singing in the woods as we sped along, and mile after mile was rapidly covered until, about one o'clock, we ran into thick, cold, white mist. The moon was obscured by cloud, and we had then a very cold run till Stamford was reached at 3.0 a.m.; thirty-eight miles in 3½ hours. Here we hunted for a policeman to direct us to the London road, but found none, and unfortunately took the wrong road, and went some five miles in the wrong direction, so that with the time taken in finding water and filling up petrol tanks it was four o'clock before we finally left Stamford behind.

The early morning run of forty-five miles from there to Biggleswade occupied 4½ hours, and the quantities of game we scattered to right and left on the road—pheasants, partridges, hares, and rabbits—showed the district was a happy hunting ground for sportsmen. The Ivel Hotel at Biggleswade and its host, Dan Albone, well-known to long-distance cyclists, made us welcome to breakfast, and we stayed there 1½ hour, till 9.30, leaving 3½ hours to complete the remaining forty-five miles to town before our appointed time, 1.0 p.m. Hitchin, Welwyn, and Hatfield were rapidly overtaken and left behind, and the thousands of cyclists we met told us of the near proximity of a great city. Barnet was passed and Highgate Archway soon appeared, and at 1.10 p.m. we ran up to the Agricultural Hall at Islington, or twenty minutes within the twenty-four hours gross time for the distance of 203 miles. Deducting the stoppages for meals, the running time was eighteen hours, and again deducting minor stoppages for level crossings and lubricating purposes the actual running time was brought to seventeen hours net, or the regulation legal maximum speed throughout. The consumption of petrol was very low, being under seven gallons, or equal to about 8s., or 1½d. for passenger per mile. JAMES EDW. TUCKE.

THE quiet little Norfolk village of Hunstanton was last week convulsed with excitement, caused by the unexpected arrival of Her Majesty Queen Alexandra on a motor-car. Her Majesty had ridden from Sandringham to pay a surprise visit to the Hunstanton Convalescent Home, in which she is kindly interested.

CORRESPONDENCE.



AN OBSTINATE VOITURETTE.

To THE EDITOR OF *The Motor-Car Journal*.

SIR,—I have a voiturette (De Dion Cudell) which I cannot get to work properly. It will start easily with a full carburettor, and will run up a slight hill on the slow gear; but, if the hill is at all steep, it slows down, the explosions fail, and it soon stops. With a good start down hill the fast gear can be put on, and the car will run well for miles at high speed; but woe to me if I have to slow down or stop. The carburettor must be refilled, and I must push vigorously to get a fresh start on the slow gear. The engine runs very freely, and so does the car. The gear is in good order, and the sparking seems all right, but explosions fail with slow running. I have put in new batteries and accumulators, have taken off the fibre sparking-plate and cleaned it, have changed the sparking-blade, and have even gone to the expense of a new coil, but all to no purpose. Compression is good, and the fault is in some way in the explosion.

An experienced motor-engineer has spent much time in endeavouring to find out what is wrong, but in vain. If any of your readers can help me I shall be thankful. The car has only been in use for three months and is quite useless. It used to run well enough.

By the way, I have a complete electric lighting plant and ample water-power, and can charge accumulators for any brother-motorist who may be in difficulties.—Yours faithfully,
G. W. GRABHAM, M.D. (Lond.)

A PROPOSED MOTOR RACING TRACK.

To THE EDITOR OF *The Motor-Car Journal*.

SIR,—Referring to the proposed racecourse for automobiles round Wembley Park, I should have thought it would not have been at all difficult to get twenty automobilists to pay £25 a year to insure interest on the amount required. I would be myself quite prepared to guarantee £50 or £100 for this purpose. I think if the idea could be pushed along it would do an enormous amount of good for automobilism in this country.—Yours truly,
S. F. EDGE.

THE BUCHET WATER-COOLED MOTOR.

To THE EDITOR OF *The Motor-Car Journal*.

SIR,—I shall be much obliged if some of your readers can give me information of their experience with the above-mentioned engine. It would appear that it has done good service upon French roads, but it seems, notwithstanding, to be little known or used over here.—Yours faithfully,
ENQUIRER.

LUBRICATION.

To THE EDITOR OF *The Motor-Car Journal*.

SIR,—In the number of oils for cylinder lubrication on the market there is much confusion in one's mind as to which is the best to use. For some time past I have given the matter special study, and with surprising results. Perhaps, if interesting to your readers, you will allow me to give a few details of my experiences. In the first place, I have come to the conclusion that most oils on the market for the purpose of cylinder lubrication at high temperatures are totally unsuitable for such work. Nearly all mineral cylinder oils on the market are purified by the use of sulphuric acid, and are also mixed with animal and vegetable fat to suit the individual mixer's fancy. The high temperatures of explosion engines quickly release the sulphur compounds and acids by bursting the globules of oil, each of which contains its percentage of acid, and which acts with deadly effect on cylinder walls and piston rings. In addition, most of these oils carbonise at comparatively low temperatures and deposit the carbon in the pores of the metal; thus, instead of having clean metallic surfaces coated with an efficient lubricant, we have what one may call a composite surface formed of the

carbon deposited in the pores of the metal, which must absorb more horse power than clean metal surfaces kept in good order by an efficient non-depositing, pure lubricant. This latter is a condition absolutely essential for explosion engines, if the highest horse power and economy are to be obtained. I have tested a number of the leading oils on the market and unhesitatingly plump for "Wilburine," an improved Valvoline oil, which has been introduced by Messrs. Boulton Bros. and Co., of Liverpool. It is absolutely the purest oil I have met with. It keeps the cylinder perfectly clean, thoroughly lubricates, and leaves no deposit. In my tests, which were carried out on Benz and De Dion air-cooled as well as water-jacketed engines (to give me the two extremes), in comparison with other oils, "Wilburine," when only using one-third the quantity, actually gave better engine efficiency, a point which was emphasised in every test, showing increased horsepower, as evidenced by the speed hills were climbed. The improved engine compression was also most marked.

On a run of 110 miles on a Benz 3 h.p. car, the consumption was one-third of a pint for cylinder lubrication. On the same trial I made an experiment with Valvoline engine oil on crank pin and loose pulley with a special cup which feeds oil to these parts only when car is in motion. The consumption for crank pin was 1½ oz., while that for loose pulley was ⅔ths of an ounce, no grease being used and no trouble from greasy belts.

In conclusion, I may say I have no interest in any way in writing this further than to let fellow motorists know of a good thing when I find it.—Yours truly,
GEO. GIBSON.

VOITURETTES.

To THE EDITOR OF *The Motor-Car Journal*.

SIR,—The makers of voiturettes seem to have overlooked the fact that their vehicles will some time or other require repairs on the road, and with some of these it is easy to see that a breakdown means the abandonment of a journey, at least, till the spare parts can be obtained from London, Coventry, or Paris. And, in my humble opinion, a car that can be patched up on the road at the nearest country smithy, and is able to complete its journey or to get home without help, is a better car, in the long run, than another which may be five or six miles an hour faster.

I should like to know how many car owners have considered beforehand what to do in case of certain breakdowns? How many carry clips to fix a broken spring or spare gear wheels to replace any that may strip their teeth?

Living, as I do, on a main road, where sometimes five or six cars pass daily, I have noticed during the last year a good many of the voiturettes *en panne*; one by a well-known French maker was in my yard last autumn for some hours, while the owner and his man tried to patch it up, but with indifferent success. Another, also a French car, was laid up in a neighbouring ironmonger's yard for about a fortnight at Christmas till the necessary gear wheels were obtained from Paris. Another French car was laid up this spring for ten days through some undiscovered defect. A few days ago a man brought a voiturette, also French, for me to see, and offered to take me for a run; we were half an hour going a mile and a half—something was wrong with the ignition, he said. Had I been a prospective customer I should have declined to purchase at any price.

I have driven a Benz nearly three years and have only been *en panne* twice from a breakdown—once from one of the original tires coming off, and the second time from the breaking of two teeth in the fibre wheel which operates the exhaust; in this case a local smith inserted two iron pegs in the wheel. In neither case did the stoppage exceed 1½ hours. Sometimes we are told the Benz is out of date, but it seems to me that the facilities for repair counterbalance the advantages of the few more miles per hour that the voiturette can do.—Yours truly,

JOHN HENRY KNIGHT.

EXHIBITION IMPRESSIONS.

To THE EDITOR OF *The Motor-Car Journal*.

SIR,—I have been most interested in the show at the Agricultural Hall, and I notice that it appears to be made clear to me

and other buyers that *speed* in the automobiles is the main matter to which the increase of power is devoted. May I be permitted to place on record that I believe many buyers would much prefer—and I certainly speak for myself—a more reliable positively certain acting engine, and I should be quite content with a maximum speed of twelve to fifteen miles per hour.

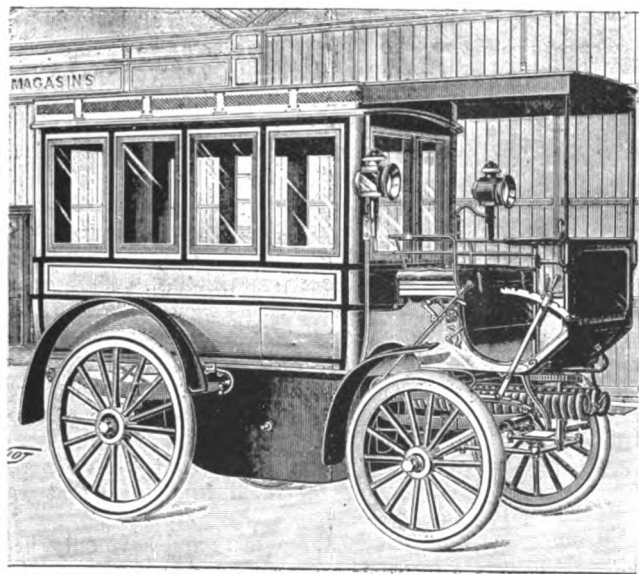
I would say that if a motor-car could be provided to run with absolute certainty ten or twelve miles per hour, day in, day out, for six or eight months on end, with but the ordinary care a mechanic ordinarily accustomed to steam or gas engines can be expected to give, and propel a vehicle such as a landau, to carry four persons with a reasonable amount of personal luggage, the sale for such a carriage would be enormous; but so long as, say, £250 to £750 is charged, the problem of automobilism must remain the fad of the wealthy and leisured class, and the relief of our crowded streets remain a question of the distant future.

I recognise the enormous strides made during the last four years, yet I regret the advancement is made in the direction of the fashion for speed, in place of the direction of the more sober and practical daily use.—Yours truly,

PITHOLONYRRH.

THE BRULÉ MOTOR-OMNIBUS.

THE accompanying illustration depicts a 20 h.p. omnibus capable of accommodating ten persons lately introduced by Messrs. Brulé and Co., of Rue Boimod, Paris. Any type of carriage body can, however, be fitted, as the motor and transmission gear are mounted on an independent frame of channel steel, suspended by springs both at the front and rear, on the axles. To deal first with the engine, which is stated to develop 20 h.p., this is located at the rear end of the frame; it comprises three cylinders; in the two outer ones actual explosions take place alternately, the products of combustion passing to the central cylinder, which is actuated by the expansion of the burnt



THE BRULÉ MOTOR-OMNIBUS.

gases. The engine is claimed to be very economical in its working. The cylinders are water-jacketed and the ignition is electrical, the sparking plugs being fitted in such a way that they can be readily removed. The carburettor is of the constant-level type and is so arranged that the driver can see at a glance how much petrol it contains. Suitable handles are fitted within convenient reach of the driver, by means of which the quantity of both air and spirit allowed to pass into the carburettor can be regulated. Like all modern motors, the Brulé engine is also fitted with an automatic governor, which, when the speed of the engine becomes too great, so acts on the admission valve as to diminish or cut off the supply of carburetted

air to the explosion chamber. Coming now to the transmission mechanism, the change-speed gear, which consists of a train of spur wheels, is adapted to give four forward speeds and a reverse motion. The motor drives, through a progressive friction clutch, a short shaft fitted with the variable-speed gear above referred to. Any one of the spur wheels of this gear can be made to mesh with corresponding pinions on the differential shaft. Steering is controlled by a vertical hand-wheel, the front wheels being mounted on the customary short vertical pivots. Ample brake power is provided, there being a band brake on the differential and also cord brakes acting on drums attached to the hubs of each of the rear wheels and operated conjointly with the friction clutch, by means of which the engine can be thrown out instantly from the transmission gear.

JOTTINGS BY A WORLDLING.

THE commercial success of the Exhibition could not be better illustrated than by the fact that I know fourteen men among my friends who bought cars at Islington.

I SEE they have had an exhibition and *corso fleuri* at Strassburg. It is some years since I have been in Gutenberg's city, but the last time I was there I was on a motor-car tour. I remember being very much impressed by the contrast between the horrible newness of my automobile and the splendid age of the mediæval streets. At the old Rebstock Inn at which I put up, they told me mine was the first car that had been in the street.

A GENTLEMAN with a most imposing name who has devoted his life to the manufacture of rickshaws at Tokio, has suddenly condemned that charming vehicle to the limbo of the past and taken to making motor-cars. He offered the first one completed to the Mikado; it was a steamer with a bamboo frame.

THE other day, at the Savage Club, where I had lunched with a friend, we were talking about motor-cars and the necessity of "putting" the movement in every way possible. Many suggestions were made, the best of which came from a man who writes operas and things. "Why don't you get Tamagno," he said, "to sing '*La donna è Automobile*'?"

It is really astonishing that so few shops have adopted motor-cars for delivery purposes. It seems to me that at the present moment it is almost worth a firm's while to run cars about London for advertisement alone, but the time will come when they will be so common in the streets that no one will look at them. That is, to-day they have dual advantages, whereas to-morrow they will have only one, that of economy.

I understand that some surprise has been expressed about my statement that the Motor Manufacturing Company's Gordon-Bennett Cup car will have five De Dion motors coupled. I think, however, that my information was correct, especially as it has since been corroborated by what one or two people who are supposed to be in the "know" have told me.

A CERTIFICAT DE CAPACITE to drive motor-cars has been issued to Madame Serpollet.

MR. REGINALD STANLEY, J.P., of Nuneaton, has just purchased a Locomobile steam car.

TO-DAY (Saturday) the members of the Automobile Club will have a run to Guildford, starting at 2.30 p.m.

MR. HANKIN, of the Swan Hotel, Alresford, concerning whose charges for stabling a motor-car there has been some recent correspondence writes us that he will in future adopt the scale of charges we suggested in our issue of the 27th ult.

TO-DAY (Saturday) the Automobile Club of Ireland meets at Shelbourne Hotel, Dublin, at 2 p.m., for a forty-three mile run, Rathcoole, Bishopscourt, Sallins, Naas, Rathcoole, and Dublin being the route. May 25th to 28th is the date fixed for the run to Enniskillen and back.

FLOTSAM AND JETSAM.

BY "FLANEUR."

Place aux Dames will soon be the cry, at the rate we are progressing. It was pleasing to the eye to watch the graceful evolutions of the lady on the Singer motor-bicycle during "Show week," and more than one car made the circuit of the ring under feminine control. But on Saturday I noticed, in the yard of the Agricultural Hall, a little car that is assuredly entitled to the premier position in our regard where ladies are concerned, for its owner had accomplished more on this vehicle than is known to have been achieved by any other *chauffeur*.

It was the little 5 h.p. Renault belonging to Miss Vera Butler to which I refer, and I happened to meet its owner and her father, Mr. Frank H. Butler, the genial ex-treasurer of the Automobile Club, at the Show on Saturday afternoon, whither they had driven as soon as possible after their arrival from Paris. Miss Butler has not only piloted this car from Paris to the South of France, and back again to England, but has also driven to the Grande Chartreuse, involving an ascent and descent of over 4,000ft., with occasional interludes in the shape of unwitting incursions into snow-drifts, for in April, of course, the snow had not yet melted. In five days the car covered no less than 967 kilometres, a matter of 601 miles. Think of this, oh ye sceptics of the great British public, who find it so hard to credit any virtues to the new means of locomotion!

DURING all this time the car did not give the slightest trouble, either in respect of the motor or the tires, save for two punctures, each caused by a nail. The little Renault is of the ordinary pattern, with spider seat behind, and seemed last Saturday to bear no marks of its long travelling, the only indication of its having been on tour being the canvas hood with which it was equipped. I may add, by the way, that Miss Butler's future aspirations lie in the direction of a light steam-car—for purely town work, of course.

ANOTHER enthusiast who must be mentioned in this connection is Miss Balfour, who visited the Show on the penultimate day in company with the First Lord of the Treasury and the President of the Board of Trade. It was known some time ago that Mr. Arthur Balfour had ordered a De Dion voiturette for "Miss Balfour," but it was less widely known that he stood in an avuncular, not fraternal relationship to the lady in question. As to whether Miss Balfour herself drove the car or was driven was also a matter of conjecture only, but I now learn that not only does she manage the voiturette herself, but is in every way an ardent and accomplished automobilist, prepared to discuss carburettors and transmission gears with the best. Miss Balfour has expressed a keen interest in the forthcoming international race for the Gordon-Bennett Cup, and made close enquiries as to the progress of the 50 h.p. Napiers.

INASMUCH as motor-cars are more or less expensive articles, it was encouraging to the trade to note the presence, on every one of the days during which the Show was open, of visitors who were obviously well-to-do, and whose carriages were thickly congregated in the road outside. Automobile purchasers have largely been recruited up to now from the ranks of professional men, either doctors in need of something more efficient than the horse for their daily rounds, or engineers whose mechanical knowledge enabled them to recognise the value of the four-cycle-motor as applied to road locomotion. Of those who have acquired cars for pleasure, pure and simple, the number has been relatively small, but signs are not wanting that henceforth this class of purchaser will be enormously increased, to the manifest advantage of all concerned. With orders coming in from persons of ample means the manufacturers will be under no necessity to sacrifice the attainment of the highest efficiency on the altar of expense, and improvements in the cars themselves are certain to follow accordingly.

BUT, useful as the influx of "carriage folk" will undoubtedly be, there is a point to which I venture to draw attention, because it will affect the future of the automobile movement, to my thinking, more vitally than anything that has yet been mentioned. It is too commonly assumed that the whole aim of automobile manufacturers is to convert every user of a horse into the user of a self-propelled vehicle instead, and that it is among the carriage-users only that efforts to proselytise must continue to be made. This notion requires to be combatted all along the line. Automobilmism provides not a mere alternative to the use of carriages, but a totally new form of sport and pleasure, a form which will appeal—and this is the point—to thousands and tens of thousands who have never had the most infinitesimal desire to possess a horse and carriage. There are plenty of people who could afford the acquisition and the up-keep alike of a dog-cart or a brougham, but who prefer to take their pleasures in other ways. Let them but be imbued with an appreciation of the efficiency of the motor-car, and the pleasure to be derived from its use, and they will not rest content until they have obtained one, even though the initial cost be far greater than the horse and carriage to which they have never aspired.

Now there is abundant evidence already that the joys of automobilism have become objectively known to many of this class, either through reading about the subject or from opportunities of observing the actual capacities of motor-cars of all types. It is equally certain that they will make every effort to acquire a car, as a source of pleasurable recreation, precisely in the way that scores of thousands of poor clerks and others have spent their ten or fifteen pounds upon a bicycle, although they never put so much money down for any single article before. Of course the number of persons who can afford a car at all will be limited within certain bounds, but that these bounds are much wider than is often supposed I, for one, am definitely convinced. And though, like anyone who knows the present-day cost of producing a good car, particularly while types are going through experimental stages, I do not join in a cry for greater cheapness, or for that £100 car which is to do everything that even a £500 car will not do, I nevertheless indulge the hope that, with a largely augmented demand, and the standardisation of parts, it will ultimately be possible to supply a low-priced but efficient car for the moderately well-to-do, and so bring in an army of new recruits.

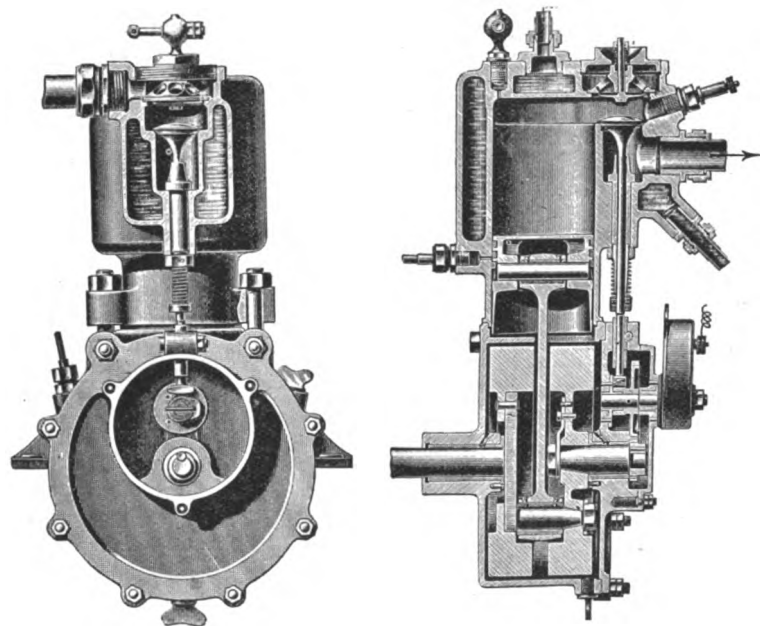
AN ingenious device may be observed on the 12 h.p. Daimler of Mr. Oliver Stanton—or perhaps I ought to say, in view of Mr. Justice Buckley's decision last Monday, the 12 h.p. car made on the Daimler principle by the Daimler Motor Company, of Coventry: one will have to be punctilious in these matters for the future. Inside the dashboard is fitted a small tap, connected with the water-tank, and by this means it is possible to ascertain at any time whether the pump is acting properly. If the tap be turned in daylight the spurt of water will tell its own tale at once, while even in the dark the amount of pressure can be determined by the finger. But the utility of the device does not end here. Beneath the tap is placed a small funnel, connected with a pipe which leads to the inner surface of the countershaft brake. On a very steep descent the tap can be turned on, and a stream of water directed to the brake, which is thus kept cool under friction, and firing is prevented. Mr. Stanton tells me that he was afforded this tip by Count Zborowsky, who uses it on his 24 h.p. Cannstatt Daimler, but whether it is a feature of all the Cannstatt cars I am unable to say.

A FINE display of official ignorance on the subject of petrol has been described to me by a friend who has recently received delivery of a new car, and hired a stable in the West End to keep it in, as his own premises did not afford the requisite accommodation. Not desiring to come into conflict with the authorities on the subject of petrol storage he caused to be erected, at his own expense, an arrangement of corrugated iron, in which to keep his petrol in the

open yard, well away from the stable in which the car was housed. When all was ready he duly wrote to the local authorities, and asked them to send down an inspector to take note that all was in order. When that functionary eventually arrived he looked at the special erection of iron and then informed the astonished *chauffeur* that he must keep the petrol in the stable! "Better to have it where the car is, you know," said the sapient inspector. But my friend does not know. He is just as anxious to avoid a fire as any public body, for the sake of his car as well as the adjoining property, and why he should place either at the mercy of a careless stableman is more than he can fathom. Consequently the chances of that fatuous inspector's ridiculous injunction being obeyed are something below zero.

THE COHENDET PETROLEUM-SPIRIT MOTOR.

WE are herewith able to illustrate a new single-cylinder vertical petroleum-spirit motor which has lately been put on the market by Messrs. A. Cohendet and Company, of Quai Jemmapes, Paris. The engine is very compact, as will be seen. The water jacket extends around the head and valve chambers, as well as the cylinder. The valves are located



at the side, one above the other, the sparking plug being arranged between them. The cylinder has a diameter of 90 mm. by 100 mm. stroke, the engine developing about 3 h.p.

In connection with their fifteenth annual hill climb at Westerham Hill, the Catford Cycling Club have arranged to hold a competition for motor-bicycles, tricycles, and quads. The competition will be under N.C.U. rules, which permit pedalling. The course is marked out exactly to one mile, and the rise is about 400ft. in the distance, varying from 1 in 6 to about 1 in 25. The contest is on the same hill as last year, but is now confined to motor-cycles.

At a meeting of the Society of Arts, on Wednesday evening, Mr. Marconi explained his latest improvements in electric communication without wires. He has been able to attune his receiving and sending instruments in such a manner that a message can be transmitted from one station to another "without danger of the message being picked up by other stations for which it was not intended." This new advance has led to the construction of portable apparatus for Army purposes, and with this view a complete installation has been attached to a steam motor-car, from which messages have been sent over a distance of thirty miles.

AN IMPORTANT AUTOMOBILE TRADE MEETING

A RECENT decision in the High Court of Justice in the matter of the British Motor Traction Company v. Sherrin, already reported in these columns, was the principal subject of discussion at a hastily-summoned meeting of the members of the Automobile Mutual Protection Association held at the Agricultural Hall on Friday, the 10th inst., during the Motor-Car Exhibition. So keen is the interest felt in the matter that, though the decision of the Court was only made known on the Wednesday preceding, and notices were only received on the morning of the meeting, a large and representative gathering of automobile manufacturers, and others equally interested in automobilism, flocked to the Welcome Club. Mr. J.J. Mann briefly informed the meeting that in the case above referred to the Court had issued an injunction to restrain the defendant Sherrin from infringing three patents relating to motor-cars. The patents referred to were No. 16,072 of 1893, granted to Wilhelm Maybach for an invention of "improvements in the methods of producing the explosive mixture in hydro-carbon engines"; No. 19,734 of 1895, granted to Count Albert De Dion and Charles Bouton for an invention of "improved means or apparatus for electrically igniting and governing petroleum and other like motors"; and No. 13,671 of 1899, granted to the British Motor Company and Charles Jarrott for an invention of "improvements in or relating to motor-vehicles." Further that the Court had granted a certificate of validity in respect of all three to the plaintiffs, the British Motor Traction Company. Mr. Mann reminded the meeting that the action of the British Motor Traction Company was a breach of good faith, they having agreed to a test action, and, therefore, ought to have stayed further legal proceedings in the matter of the 16,072 patent pending the decision of a similar case down for hearing against Mr. Charles Friswell. He called the attention of those present to the serious effect upon the trade such a ruling of the Court must have, and urged the importance of combination against the company and others referred to as a group, who held or claimed no less than fifty-nine patents for parts essential to the making of motor-cars. He further proposed the formation of a guarantee fund to fight the Friswell case now pending, as a test case, carrying it, if necessary, to the House of Lords. He was informed that £3,000 might be necessary to carry the matter through to the end, and towards this amount the Earl of Shrewsbury and Talbot had promised £500 provided the balance could be guaranteed. Other speakers followed, whose eloquence was in some cases of the fiery order, but concerning the opinion of the meeting there could be no question. That the British Motor Traction Company, and the "group," with their fifty-nine patents, valid or otherwise, must be fought collectively was assured before even the subscription list was opened. Mr. Staplee Firth followed with the legal aspect of the case. He urged the necessity of guaranteeing the necessary funds to enable the Friswell test case to come on at once, as a means of preventing immediate action on the part of the "group" against others interested in the motor-car industry. The advisability of prompt action was emphasised by a gentleman throwing a writ served upon him that day upon the table behind which the speaker stood. More than one hand stole furtively to breast pocket, where, no doubt, a similar dreaded instrument lay, and many eyes turned towards the door as if expecting to see the solicitor's clerk, reported to have been engaged in a game of hide-and-seek in the Hall during the Show. Needless to say that the fund was guaranteed—more than guaranteed, in fact—most of the gentlemen present contributing something, "each in his degree."

The proposed Motor-Car Show to be held at the Crystal Palace in February next was the next subject discussed. That too many Shows were injurious to trade was the opinion freely expressed. On the motion being put that the meeting considered one annual exhibition sufficient, and recommended that the Show of the Automobile Club at the Agricultural Hall should be the only one supported, it was carried unanimously.

THE Motor-Car Exhibition at the Agricultural Hall.



(Continued from page 174.)



Photo by]

A GROUP OF CARS IN THE ARENA.

[Argent Archer.

THE great Motor-Car Exhibition is now relegated to the past tense, to the relief of those firms whose representatives found such a busy week a tiring experience. As one gentleman expressed it: "Even good business becomes monotonous and tiring when you have so much of it." And there was a good deal of activity prevailing from Saturday to Saturday. Several points were made clearly apparent during the week. It was clear that the public have definitely taken to automobiles, that scores of people were waiting till the Exhibition to place orders, and that the summer season will be a very brisk one for those who have cars to sell, and one of great stress for those concerned in the construction. The public were attracted to the Exhibition in crowds, and, arrived at the Agricultural Hall, they became interested, and curiosity developed into purchase in many instances.

Mention may rightly be made of the character as well as the numbers of the attendance. Dukes, lords, and right honourables were there every day, members of the Cabinet whirled round the arena as though they were thousands of miles from the wordy warfare of Westminster, and fashionable ladies evinced as much interest in the mechanism of the motor-cars as they are wont to do in the attractions of a county horse show or a fancy dog exhibition. Members of manufacturing firms, representatives of delivery companies, and tradespeople, who find horseflesh expensive, were also among the purchasers of vehicles—each being suited to his tastes or requirements. Medical men were cautious inquirers throughout the week, and many will develop into purchasers before the end of the month.

As is usual at these displays, no hitch occurred to mar the general satisfaction. The popularity of the arena was as pronounced as ever, and, thanks to Mr. Basil Joy's never-failing courtesy and patient manner, as well as the good humour of drivers, all went merry as a motor bell—so far as that portion of the Hall was concerned. Away in the Minor Hall were crowds throughout the week, and the firms in the Gallery found loftiness of view associated with substantial results. Next year the Gallery will be as full of life as any other part of the Hall, and the accessory firms will doubtless appreciate the provision there made for their reception. Most exhibitors wisely refrained from overcrowding their stands, with the result that visitors could see the cars from all points

without inconvenience. This fact, combined with the care with which the catalogue was compiled, was appreciated by every motorist who visited the Show. Many other reflections occur as we write; but space is limited and we now continue our description of the leading exhibits and the main features on the various stands.

Strikingly original features in many important respects characterise the construction of the cars of the Wolseley Tool and Motor-Car Company, Ltd., Adderley Park Works, Birmingham, of which two specimens, both with *tonneau* bodies, were shown, one fitted with the new 10 h.p. two-cylinder motor, the other a 5 h.p. car with a single cylinder. Except for the different engine, and that the smaller car has only three speeds forward in place of four, the two vehicles are, generally speaking, identical, so that the following description may be taken as applying to both cars. To begin with the frame, this is constructed of one piece of channel steel. The two-cylinder engine, which at 750 revolutions per minute develops 12 h.p., is located in the front, the cylinders are water jacketed, and the ignition is electrical, an extremely simple form of wipe spark ignition being adopted. The roller is encased in an aluminium box, which can be shifted on its own axis for advance or retard in the usual way, and the high tension wire is introduced into the box through a small ebonite screw plug, so that the chances of short circuiting are reduced to a minimum at this point. The water circulation is maintained by a pump, although, by reason of the tanks being above the engine, the water will circulate by gravity should the pump fail. The radiators are of greater extent than usual, enclosing the sides as well as the front of the bonnet, and the capacity, with the two water tanks at each side, amounts to 2½ gallons. An automatic governor is provided, as also a foot-operated "accelerator"; the carburettor is of the float-feed type. A point is made of the fact that the fly-wheel revolves in the direction of the travel of the car. A detail of importance, and making for efficiency, is that the bearings of the crankshaft of the engine are exceptionally long, being four and a half times the diameter of the shaft, thus giving a rigid holding. The designer of the Wolseley engine, Mr. H. Austin, has very positive views on efficient lubrication, and eschews the ordinary splash system, preferring to convey fresh clean oil to every working part by copper conduits giving direct lubrication. Coming now to the

THE GENERAL AUTOMOBILE AGENCY, D. Farman, Man., Carage open day and night, all cars in stock, 100-104, Long Acre, W.C.

transmission gear, this is of the Panhard type, giving four speeds forward and one reverse in the 10 h.p. car, and three speeds and reverse in the 5 h.p. vehicle, all controlled by one handle. A large Renold silent chain transmits the engine power to the variable speed gear shaft, while two roller chains connect the countershaft with the rear road wheels. The wheels on the large car are 34 ins. in diameter, and on the

out at 4 cwt. less, and has a maximum speed of 27 miles per hour. There can be no doubt that a good deal of time, money, and thought have been expended in bringing the Wolseley cars to their present high state of perfection, and we are not surprised to learn that they are meeting with a good reception in the motoring world. Mechanically inclined visitors to the Show paid great attention to the glass case on the stand in which were

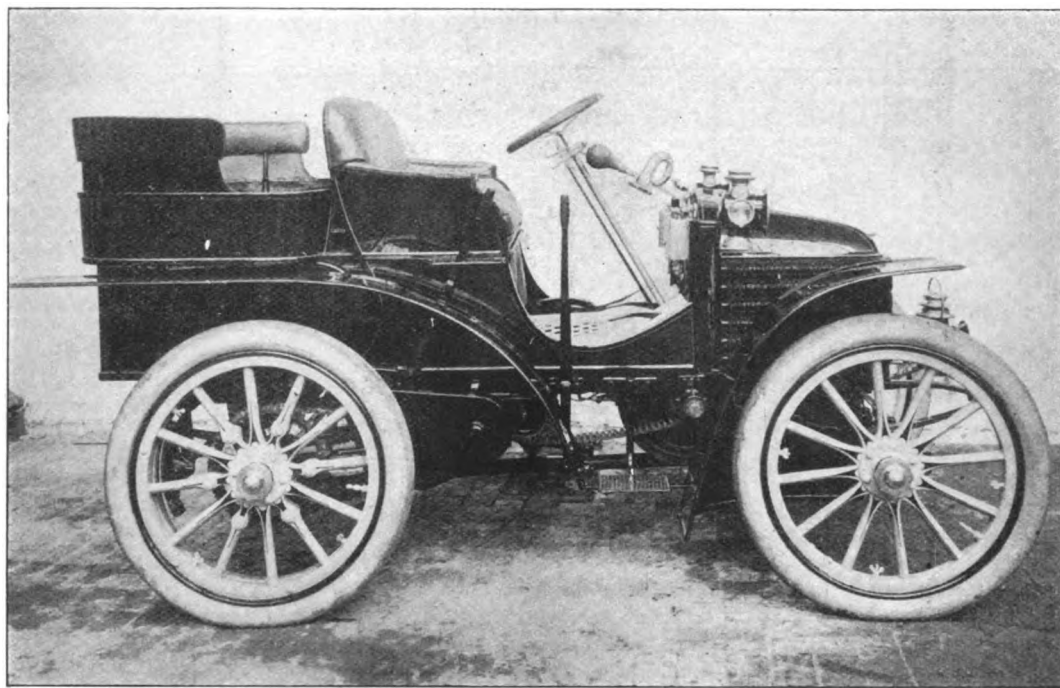


FIG. 1.—THE WOLSELEY 10 H.P. TONNEAU-BODY CAR.

5 h.p. 30 ins., in both cases fitted with Clipper-Michelin tires. The wheels are wooden, artillery pattern, and are fitted with hand-applied emergency brakes acting on the rim; a pedal brake is also fitted. Steering is controlled by an inclined bandwheel; the wheelbase of the car is suitably long, with the front axle well forward, being, in fact, just vertically below the front of the radiators. Every detail has been thoroughly considered; a

displayed well-finished samples of the parts of the Wolseley engine and transmission gear.

The Yorkshire Motor-Car Manufacturing Company, Limited, Hipperholme and Bradford, had on view one of their voituettes, and also under-frame for the same. A general view of the car is given in Fig. 3 and a plan view in Fig. 4. The motor

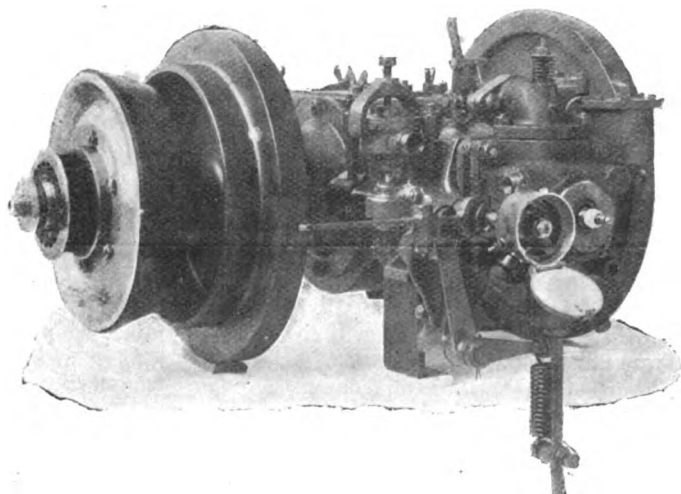


FIG. 2.—THE WOLSELEY 5-H.P. MOTOR.

petrol gauge and tap are fitted on the dashboard, as well as the sight-feed lubricators, and unusually copious splashguards enclose the wheels, the front ones being reinforced with wing flaps on the inside to protect the engine. The 10 h.p. car (Fig. 1) weighs complete about 18 cwt., can attain a speed of thirty-six miles per hour, and with a full load ascend a gradient of 1 in 6. The weight of the 5 h.p. car comes

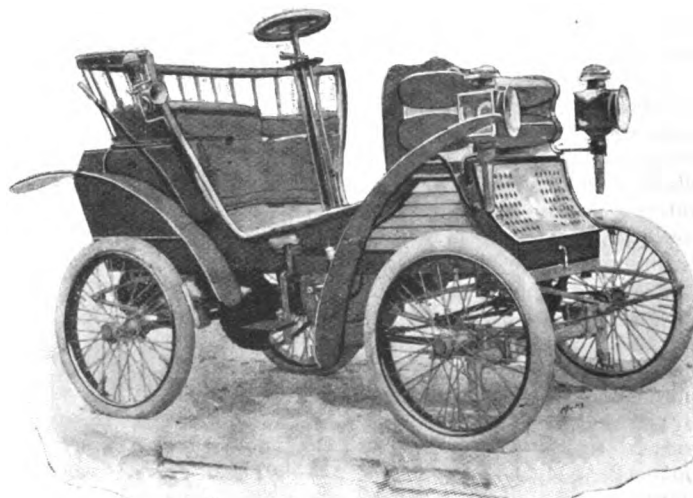


FIG. 3.—THE YORKSHIRE MOTOR CAR COMPANY'S CAR.

is fixed in the fore half of a cross-stayed girder frame; it is placed at an angle of 25 degrees from the horizontal, and is fitted with valves which are held vertically upon the end of the cylinder. The cylinder is 4½-in bore, and the piston has a stroke of 4½ in.; the normal speed is 800 revolutions per minute. The cylinder together with the valve chamber are water-jacketed. Natural circulation from two oval tanks, placed in front, is employed,

the use of a pump or radiator being dispensed with. Either electric or tube ignition is provided for. A Longuemare carburettor furnishes the explosive mixture, and is itself fed from a petrol tank beneath the seat. The crank-shaft carries a drum from which the power is transmitted to a change-speed gear on a separate counter-shaft by means of a single wide belt. A striking-gear throws the belt from the one to the other pulley,

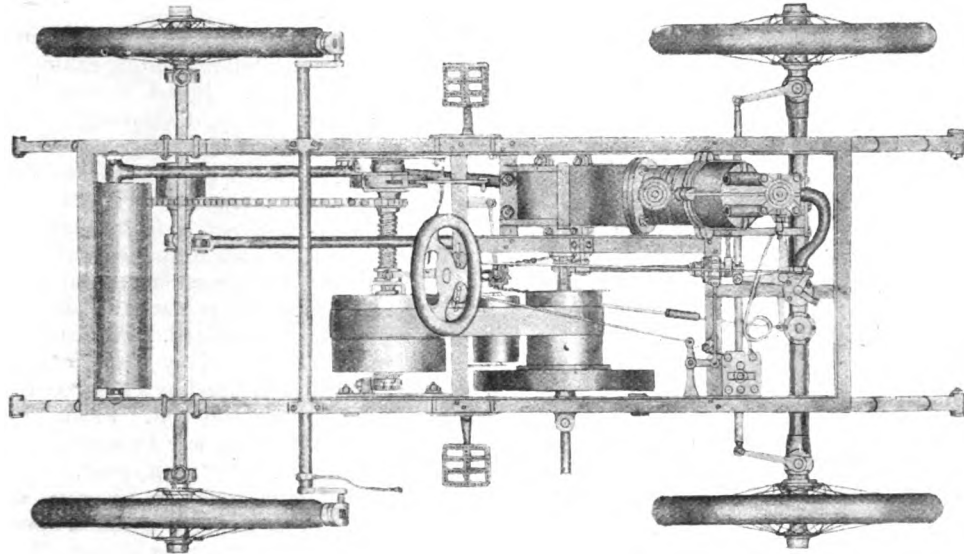


FIG. 4.—PLAN OF YORKSHIRE MOTOR-CAR COMPANY'S CAR.

and a jockey on the under (and slack) side of the belt serves to tighten it. The change-speed gear provides for three different gear ratios, giving five, ten, and twenty miles per hour. It is operated by a single hand lever on the steering post. Within the two pulleys on the counter-shaft, and enclosed in a dust-proof and oil-retaining case, is an epicyclic train of bevel wheels, one planet-wheel only being fitted. This device provides three different speeds in the following manner:—When the belt is placed on the right-hand pulley it revolves, together with its sleeve, freely on the counter-shaft, but the planet wheel carried by it causes the left-hand pulley to revolve at twice its own speed. Since a two-way clutch is engaging with this latter pulley the counter-shaft is also driven at twice the speed of the pulley which the belt is running upon. This is the high speed. In order to obtain the intermediate speed, the belt is moved on to the left-hand pulley. The counter-shaft then revolves at one half the previous speed. The low speed is brought into action by throwing over the two-way clutch, and this is effected by a connection between the striking gear and the clutch lever. The effect of this operation is to cause the counter-shaft to revolve at one-half the speed of the belt-driven pulley; the pulley is running freely on the sleeve of the other pulley, but it is driving this other pulley and its sleeve, at half its own speed, through the epicyclic train; the sleeve is now clutched to the counter-shaft, and hence the low-speed gearing is obtained. This counter-shaft is connected with the differential gear on the rear live axle by a $1\frac{1}{4}$ -in. pitch Brampton roller chain. The back axle is supported by three ball bearings, two of which are carried by the suspension springs, and the third by a chain-tightening tie rod. Wheel steering is fitted in the centre of the car, so that either rider can operate it. The wheels are 26 in. in diameter, and are

fitted with $2\frac{1}{2}$ -in. pneumatic tires. A foot pedal acts upon a band brake on the counter-shaft when it is pressed backwards; it also controls the jockey pulley which tightens the belt and thus serves to start the car, when it is pressed forward. The car complete weighs about $7\frac{1}{2}$ cwt.

One of the latest Coventry cycle firms to take up the construction of motor-cars is the Swift Cycle Company, Ltd., of Cheylesmore, and judging from the chassis and complete car (Fig. 5) which they had on view, they have given the matter careful consideration before putting their automobile on the market. To begin with the frame, this is constructed of $1\frac{3}{4}$ in. steel tubing. The engine, a $5\frac{1}{2}$ h.p. M.M.C. De Dion water-cooled motor, is supported in the fore part. An extra fly-wheel is carried on the engine-shaft outside the crank chamber; the ignition is electrical, while the water circulation is maintained by means of a small pump carried on a standard on the frame, and driven off the engine-shaft by chain gear. The inlet valve can be adjusted by means of a Bowden wire mechanism from the steering column. In the finished car the motor is covered by a well-shaped bonnet, an ample petrol tank being set behind the dashboard, and a set of radiators carried above the steering rods. From the motor the power is conveyed to the countershaft by a $1\frac{1}{4}$ inch pitch Brampton roller chain.

This shaft is equipped with a compact change-speed gear of the Crypto type, giving two speeds ahead and one reverse, the gear being operated by a foot pedal. From the change-gear shaft a single centrally located chain transmits the power to the rear live axle. Inclined wheel steering is fitted, and a special feature about the car is that the steering gear is all duplicated; that is to say, two rods couple up the short steering-posts, each of which latter is provided with two arms. The main rod from the bottom

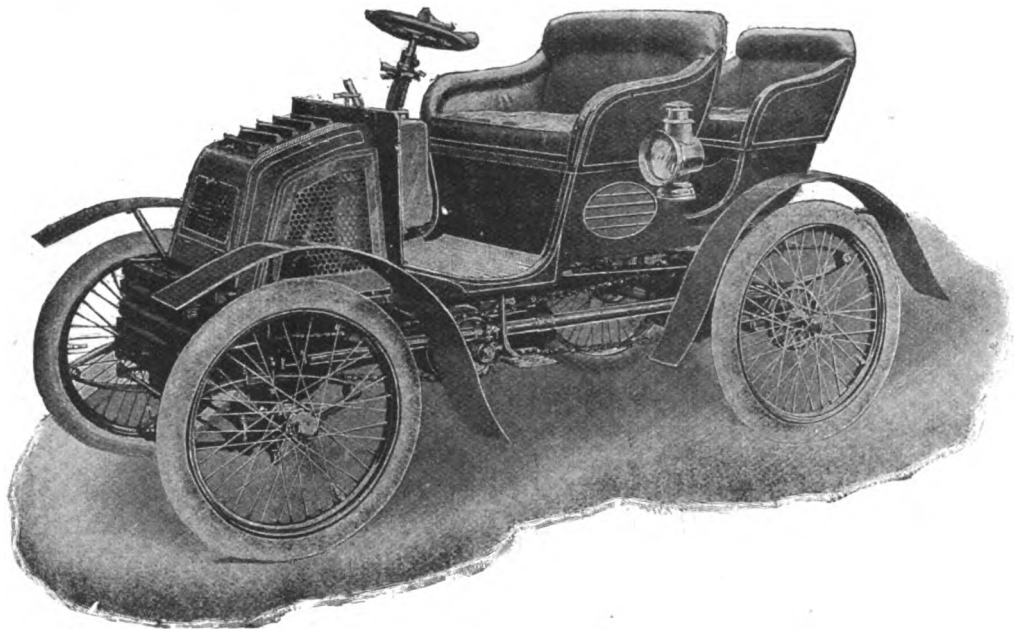


FIG. 5.—THE "SWIFT" CAR.

of the steering stem to the wheel is connected to a double arm from the steering-post proper, this arm taking the form of a circle round the steering socket. The steering gear is thus very safe and efficient, one set being sufficiently strong should the other be accidentally damaged. The rear axle is provided with two brake drums carrying band brakes operated by a foot lever, a band brake, operated by the control lever, also being applied to the

differential gear. To prevent the car running back on wheels, a special ratchet arrangement, working on the rear chain wheel, is provided. The hubs of the rear wheels are mounted in a special way to enable them to be readily adjusted or detached. The body, which is mounted somewhat higher than the majority of similar vehicles, has a neat, compact appearance. The car shown was a three-seated spider, but a *tonneau* body can be fitted if desired. The vehicle complete weighs about 9½ cwt., and can attain a speed of twenty-five miles per hour. The road wheels are of the cycle type shod with 3 in. Dunlop pneumatic tires.

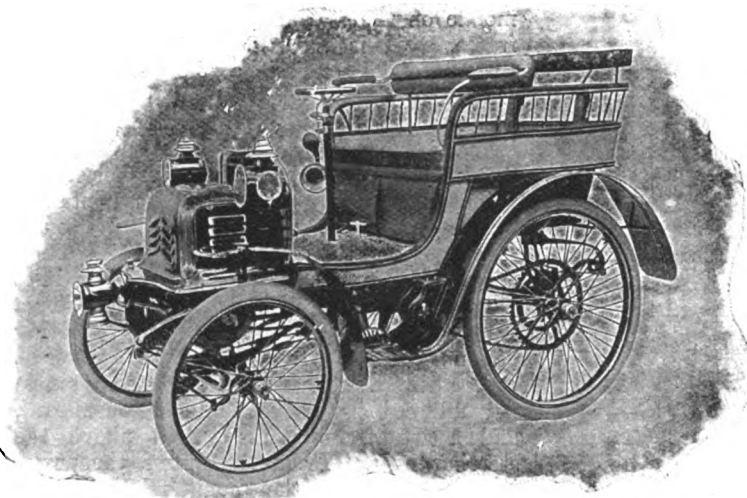


FIG. 6.—THE "F.N." CAR.

A neat light car with *tonneau* body (Fig. 6) was shown by the Famous National Automobile Company, Ltd., of Lombard House, George Yard, London, E.C. The car, which is built by the Fabrique Nationale d'Armes de Guerre, of Herstal, Belgium, is equipped with a 6 h.p. engine located in the front portion of the car, under a bonnet, so as to be readily accessible. It is of the vertical petroleum-spirit type; it comprises two cylinders set side by side, and is stated to be capable of working up to 6 h.p.; the cylinders are water-cooled, the circulation being maintained by means of a pump. The ignition is electrical, a special ratchet device being fitted on the steering pillar to advance or retard the sparking. Passing to the transmission mechanism, from the motor shaft to the intermediary shaft the power is transmitted by two belts, and from the intermediary to the rear road wheel axle by means of the usual chains and sprocket wheels. Two mechanical forward speeds and a reverse motion are provided, the variable speed gear being controlled by a single handle mounted on the steering standard. It is claimed that by means of the variable speed gear and the variation of the electrical ignition any speed from zero up to twenty-eight miles per hour can be obtained. The road wheels are of the cycle type, fitted with pneumatic tires. The steering hand-wheel and the speed control handle are mounted on a standard within convenient reach of the driver, provision being also made for the starting of the motor, and also for the tightening of the driving belts from the driver's seat. The car complete weighs between 8 and 9 cwt.

Messrs. R. M. Wright and Company, Mint Street and Bailgate, Lincoln, exhibited one of their "Stonebow" four-seated dog-carts (Fig. 7.) The frame of this vehicle is of channel steel; at the rear it is fitted with a 5 h.p. horizontal motor of their construction. The water circulation is maintained by a pump, and a radiator is provided in the fore part of the frame. In passing it may be noted that every effort has been made to render the parts easy of access, the induction and exhaust valves of the engine being fitted on the top of the cylinder end. The transmission is effected by means of three 2 in. belts working on fast and loose pulleys and a Crypto gear; three forward speeds—ranging from four to eighteen miles an hour—are provided, as is also a reverse motion. From the countershaft a duplicate pair of sprocket wheels and roller chains transmit the power to the rear road

wheels. Wheel steering is fitted, the various levers being mounted on the steering pillar. The road wheels are of the cycle type. The body can be readily detached from the frame by removing four bolts. The petrol and water tanks are arranged under a false bonnet in the fore part of the frame; storage capacity sufficient for a run of 140 miles is provided. A hand-brake on the countershaft, as also emergency shoe brakes on the tires, are fitted. The car, complete, weighs about 12 cwt.

Messrs. Ernest Hutton and Company, Limited, of Ohm Works, Northallerton, confined their exhibit to a single example of their "Simplex" voiturette (Fig. 8). Power is supplied by an M.M.C. De Dion water-cooled motor developing about 5 h.p., and fitted with electrical ignition, arrangements being made that the ignition, air, and gas can be regulated from the driver's seat. The induction valve spring pressure is controlled by a third lever under the usual steering wheel, so that the speed of the motor can be increased, while if the lever be pulled entirely up, the valve acts as a throttle. The water-circulating pump is driven by a small band. The induction coil is placed inside the bonnet, and the batteries are similarly situated. Two speeds are provided, the transmission being effected by a single belt running on wood pulleys. The whole is enclosed by a light cover, which prevents dust and mud reaching the belt. From the countershaft toothed pinions transmit the power to spur gears on the live back axle, one pair being used for each speed. The gearing is made very large, and it is designed to be equal to transmitting more than double the horse-power it is called upon to do. The gearing runs in an oil bath. Steering is controlled by means of an inclined wheel on the right hand side, and two independent and powerful band brakes are fitted, capable of holding the car on the steepest gradients. A novel sprag is fitted, which engages with saw teeth on a wheel on the countershaft, and so holds the car on the steepest hill. The frame is of steel tubing, while the body is of neat design and made largely of aluminium. The starting of the engine is effected by a handle attached to the splash board, which can be actuated either from the ground or from the driver's seat. The wheels are of the cycle type and fitted with 65 mm. pneumatic tires. Messrs. Hutton have a new type of 5½ h.p. car in hand, particulars of which we hope to give in a later issue. On the stand was also shown a specimen of the "Automatic" oil economiser, which

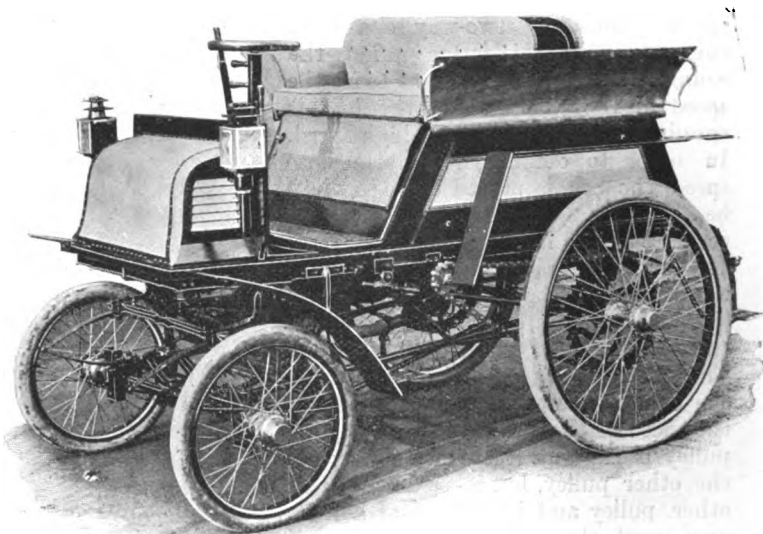


FIG. 7.—THE "STONEBOW" CAR.

affords a ready means of storing liquids, combined with an effectual method of withdrawing and distributing the same without loss. Instead of the usual "draw-off" tap, a pump is employed; by this means loss by leakage or by the tap being left inadvertently open is avoided. Rectangular in form, it is provided with a lid, which, when closed and locked, affords effectual

protection against surreptitious withdrawal, evaporation, and pollution. By the act of lifting up the lid, the discharge pipe is also automatically raised into the proper working position and the well is opened, whilst the closing of the lid also closes

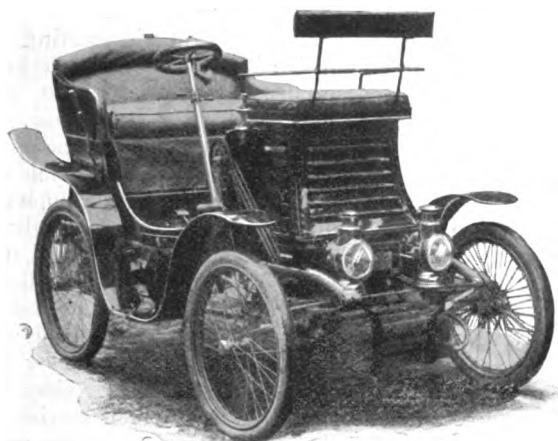


FIG. 8.—THE "SIMPLEX" CAR.

down the discharge pipe and hermetically seals the well by means of a valve.

A very interesting car was that exhibited by Mr. M. Holroyd Smith, of 47, Victoria Street, Westminster, of which an illustration is given in Fig. 9. The vehicle has been built to demonstrate the value of various new and useful improvements, and is the result of a considerable amount of study and research. The design of the car varies from the general practice, but this is a minor question, because with the same engine, gearing, frame work, etc., almost any variation could be made in the shape of the car body to suit the taste of the user. The frame is constructed of ash, plated with iron at top and bottom. The engine, which develops from 6 to 8 h.p., at from 600 to 800 revolutions per minute, and which is located at about the centre of the frame, has two cylinders placed at right angles one with the other (Fig. 10); this disposition has been adopted to lessen vibration. Both



FIG. 9.—MR. HOLROYD SMITH'S CAR.

pistons work on the same crank pin, and the balance weight being in alternate requisition is equal to the weight of one piston. Though all the working parts are enclosed they are easily accessible, our attention being called to the facility provided for examining and adjusting the induction and exhaust valves. Electric ignition is employed with a fresh design of commutator,

the object being to prevent oil finding its way to the contact-making portion. The carburettor has no float feed and embraces the good features of the surface evaporation and the spray method combined; every provision is made for adjustment to suit different loads, varying qualities of petrol and states of the weather. The cylinders are water-jacketed, the circulation being maintained by a direct-driven centrifugal pump of novel construction driven off the crank shaft. The hot water is made to pass through two sets of radiating copper tubes, one fitted with aluminium gills in the usual manner, and the other constructed on a system believed to be new, in which durability and facility for cleansing have been considered. Special attention may be drawn to the method of transmitting the power from the engine to the driving axle, whereby it is possible to obtain any variation of speed between the two extremes of five and fifteen miles per hour. By simply turning a small hand wheel to the right the car goes faster, reversing the movement causing the car to go slower. Another concentric handle on the same spindle starts and stops the car. When in mid position the engine is disconnected from the gearing and the car is stationary.

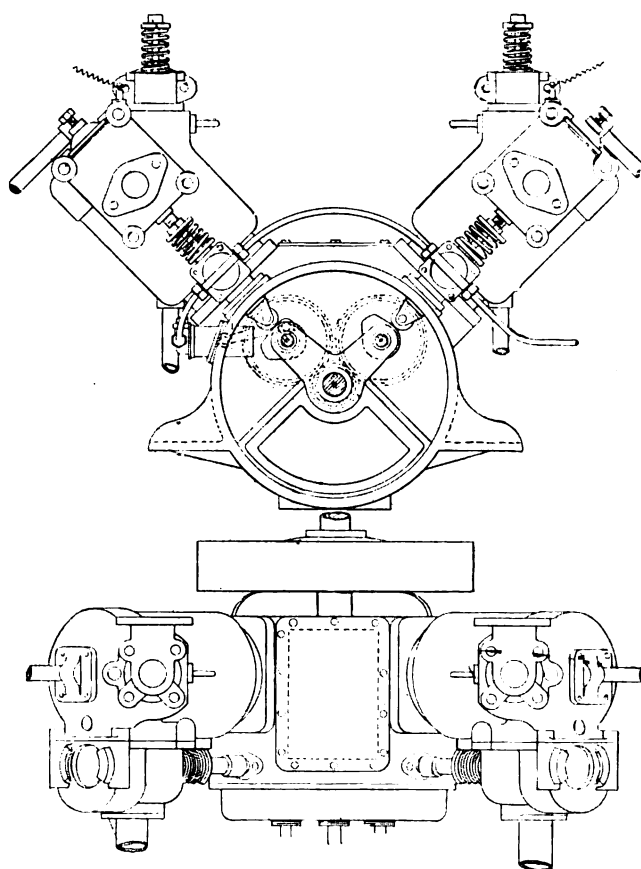


FIG. 10.—ELEVATION AND PLAN OF MR. HOLROYD SMITH'S ENGINE.

Without a drawing it is somewhat difficult to describe the transmission mechanism. The engine is placed with its crank shaft fore and aft of the car, and drives a cone pulley, from which power is transmitted to a similar but reversed cone pulley by means of a belt, moved by a screw striking gear. There have been many attempts to utilise cones and belts to obtain a variable speed, but hitherto the difficulty that one edge of the belt has a tendency to travel faster than the other has not been surmounted. Mr. Holroyd Smith has spent much time on this point, and has produced an articulated belt which, while giving a grip over its whole width, has practically a central driving line. The reverse motion is obtained by means of grooved friction pulleys. The gear is exceedingly interesting. The lower cone is carried in a fender, and can be raised or lowered, and the engine cut out from the transmission gear or the driving belt tightened as desired. From the speed-varying arrangement power is transmitted to the rear axle by means of a flexibly-

coupled shaft and bevel gearing. Dual brakes are provided, the one for general use being a hand brake on each of the driving wheels, the peculiarity being that the restraining influence is equal on each wheel, and also that the first effect produced by the foot lever is to disconnect the engine from the driving gear. The road wheels are exceptionally strong; in construction they are the reverse of bicycle wheels, viz., that instead of the spokes



FIG. 11.—THE STIRLING VOITURIETTE.

being wires under tension they are wood under compression; the spokes form their own hub, and are attached to the channel steel rim by adjustable nipples. The channel steel rims are fitted with rubber cushion tires shielded by steel shoes secured in a way that has proved most effective in practice. In fact, the set of wheels on the car have run nearly 1,000 miles and show no appreciable wear. Steering is effected by a specially modified tiller whereby no vibration due to roads is communicated to the hand of the driver. The tiller is pivoted so that it can be turned out of the way to give free ingress to the car. By a novel, yet simple, arrangement the tiller is also the signal horn. The car body is fitted with a tool chest in front, and there is ample room under the back seat for luggage.

Considerable interest was shown in the voiturette exhibited by Stirling Motor Carriages, Limited, of Sauchiehall Street, Glasgow, by reason of the relatively low price of the car having regard to its power. The vehicle has previously been described in the *Journal*, but it may be mentioned that it has a four-seated dog-cart body mounted on a tubular frame (Fig. 11). Power is supplied by a 5 h.p. M.M.C. De Dion water-cooled motor with gravity circulation. Two speeds are available, the power being transmitted from the engine to an intermediate shaft by a friction clutch and chain driving, spur gearing connecting the countershaft with the front axle. Side tiller steering is provided, this acting on the rear and not the front wheels as usual. The little car is equipped with cycle type wheels and pneumatic tires and complete weighs about $4\frac{1}{2}$ cwt. The Stirling voiturette has met with an excellent reception in the North, the makers being unable to accept any further orders for delivery before September. In larger vehicles Messrs. Stirling displayed a couple of their victorias. These are well-constructed vehicles, driven by a 7 h.p. vertical engine, located about the centre of the channel steel frame. The ignition is electrical by means of a dynamo and accumulator, while the cylinder cooling water is circulated by a rotary pump. Two speeds are provided, eight and twenty-five miles per hour—as also a reverse motion. The forward motions are obtained by chains and clutches, the countershaft being connected with the rear road wheels by the

usual duplicate pair of chains and chain wheels. The car complete weighs about 12 cwt., and is equipped with artillery wooden wheels and pneumatic tires. One of the vehicles had tiller steering, while the other was of the inclined wheel type, the post of which is hinged to allow of free ingress to the seats.

We generally expect to find something interesting at the exhibit of Mr. Carl Oppermann, of Wynyatt Street, Clerkenwell, and his stand was no exception to the rule. First, we find an electrical victoriette, shown in Fig. 12 below. This vehicle is finished and upholstered in a luxurious manner. The body is mounted on elliptical springs above a flexible under-frame, which connects the front and rear axles, and which is provided with universal joints in such a way as to allow the wheels to suit themselves to any inequalities of the road surface. The wheels, which are 30 in. (rear) and 27 in. (front) in diameter, are of the tangent wire type, and are fitted with steel hubs. Solid rubber tires, 2 in. wide, are used, and the wheels run on roller bearings. The tires are secured to the rims by welded steel wires, and are further held in place at their sides by the rim itself. The front axle is a steel tube which carries a ball-steering head at each end, and the steering gear is of the ordinary type, and is operated by a steering lever through a rack and quadrant. The motor is mounted to swing about the live rear axle, and is also connected to the body of the vehicle. It is of the Oppermann series-wound type and normally develops 3 h.p., although it is said to be capable of standing three times this load for a short time. Steel magnets and a slotted drum armature are used, and the motor is completely closed in; automatic lubrication is provided. The transmission gear consists of a hard steel worm which is carried on the end of the motor shaft, and which meshes with a phosphor-bronze worm-wheel on the differential axle. A lever brake is also fitted which operates upon the tires of the hind wheels; the latter are also fitted with powerful band brakes actuated by means of the driver's foot. The weight of the carriage complete is 18 cwt., and its extreme length 8 ft. The vehicle is arranged for two persons, but a seat at the rear for an attendant can easily be fixed if required. Mr. Oppermann also showed a very neat three-seated dog-cart, which he has named the "Lucania." The vehicle is mounted on his new tubular under-carriage. The new frame and gear is quite self-contained, and is arranged to suit a large number of different types of carriage bodies, and can be fitted up with very little labour. It is made to drive by either the front or rear axle, although the latter is preferred, as being most con-



FIG. 12.—THE OPPERMAN ELECTRIC VICTORIETTE.

venient. The car is fitted with a 3 h.p. motor and a battery of forty-two accumulators, having a capacity of 150 ampère-hours. Steering is controlled by a bar acting on the front wheels. Band brakes are fitted to the rear wheels, operated by a foot lever. An electric brake, actuated by the controller, is also provided. The controller is arranged to give three speeds

forwards, corresponding to 4, 8, and 12 miles per hour, and one speed backwards, all of these results being attained by means of one lever. The chief novelty on Mr. Oppermann's stand was a two-seated "Electric Runabout," which is being put on the market at the low price of £160. This little car is built to carry two persons, and will run a distance of twenty-five miles with one charge of the accumulators. It is very easily managed, is absolutely silent in running, and the speed can be set to four, seven, or ten miles an hour. The wheels and axles, together with the motor and gearing, brakes, etc., are carried on a steel tubular frame, quite independent of the carriage body. The battery consists of thirty cells of the "Flambeau" type, which are always worked in series, the speeds being varied by means of a resistance. The motor is 1 h.p. and drives the hind wheels direct by means of a worm gear, which is entirely enclosed. The carriage is sent out complete with electric lamps, volt and ampere meter, mileage recorder, band and shoe brakes, and safety catch to prevent the car running down hill backwards, hooter, etc. The weight of the car complete is 8 cwt.

A very representative display of electric vehicles, all of which were fitted with the Leecoll batteries, was made by the British and Foreign Electrical Vehicle Company, Ltd., 4, Bloomsbury Place, W.C. Here were handsome carriages, fast "chariots" for long distance purposes, and utilitarian delivery vans, the whole comprising a very noteworthy exhibit. Of general interest was the Columbia phaeton intended to seat three people. With one motor and a 40-cell Leecoll battery it will travel thirty miles on one charge, thus rendering it well suited to city and suburban work. There are three speeds ahead, one reverse, and an electric brake available. Pneumatic cycle wheels have been fitted and tiller steering is also a feature of the vehicle, which has a neat and stylish appearance. Another attractive exhibit on the stand was a Lohner-Porsche car to which either a victoria or brougham body can be applied. This has been previously described in our columns, and it need only be said on the present occasion that the capacity of the battery of forty cells is between twenty-five and thirty miles, while a top speed of fifteen miles an hour can be obtained. Hub motors are fitted to the front wheels and the controller gives five speeds ahead, one reverse, and an electric brake. The



FIG. 13.—THE BRITISH AND FOREIGN COMPANY'S LONG-DISTANCE ELECTRICAL CAR.

delivery van (Fig. 14) was the subject of much questioning during the week, many leading commercial houses recognising its efficient appearance, and deciding to test its merits. Its stated capacity is one ton, but it can carry double that weight. The battery consists of forty cells of large size, and one charge will suffice for fifteen to twenty miles. There are two motors driving the rear axle by means of enclosed spur gearing. The controller is adapted for four speeds ahead, three reverse, and two electric brakes. Wheel steering has been adopted, and solid tires provided. Together with the batteries the van weighs

about $2\frac{1}{2}$ tons. On the stand was a "chariot" designed to carry four people, two in arm-chair seats in front, the others being on a raised seat behind. The body is of partinium. The chariot shown was not equipped with its motors, but the vehicles of this type have two $2\frac{1}{2}$ h.p. motors. Both in the arena and on the stand the Creanche voiturette exhibited by the company secured much notice. A forty-cell battery is provided as also one motor having two armature windings and two commutators. It will run about thirty miles on one charge at a speed of twenty miles an hour or less, while its efficient brake, seven speeds and a reverse are points

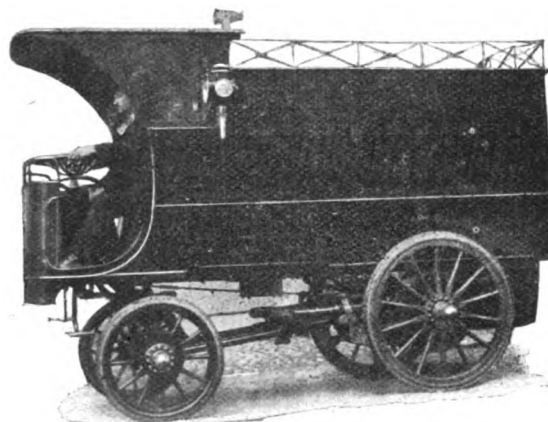


FIG. 14.—THE BRITISH AND FOREIGN COMPANY'S ELECTRICAL DELIVERY VAN.

not to be overlooked by those favourably impressed by electric vehicles. The list of vehicles (all fitted, it must not be forgotten, with Leecoll batteries) on this stand was completed by a reference to the Krieger long-distance car (Fig. 13). The fact that it is constructed to journey sixty miles on one charge gave additional interest to the car that was shown. This was arranged to seat four persons, two in seats of the armchair type in the front and two on a high seat behind. Two Krieger $4\frac{1}{2}$ h.p. motors are geared to the front wheels and fifty-cell batteries are located in front and rear. Six speeds are provided by the controller, together with two positions for recuperation. There is a reverse and also an electric brake. Bar steering has been adopted, and the special points include pneumatic tires and wood wheels. The total weight of the car is about $1\frac{1}{2}$ tons.

As is well known, electrical vehicles are the speciality of the National Motor Carriage Syndicate, Limited, of 37, Walbrook, London, E.C. We were fortunate to meet Mr. Joel, who is responsible for their design, and he kindly pointed out to us the special features of his vehicles. We first inspected the "Brighton" electrical voiturette, of which an illustration is given in Fig. 15. There are two Joel 2 h.p. electric motors driving the two back wheels of the carriage by chains acting directly from a small sprocket pinion on the motor axle to a larger sprocket wheel fixed to the spokes of the rear carriage wheel, these chains being adjustable as in a bicycle. The motors are fixed on an independent and "springy" underframe, and as each drives separately there is no necessity for balance gear. The electric motors are of very light weight (100 lbs. each), and slow speed (600 revolutions per minute). These motors will run at quarter, half, and full speed—as required for the carriage, and are made to give 50 per cent. more h.p. for short periods. Carbon contacts or brushes are used on the commutators, and the motors will run either forwards or backwards. The two batteries comprise thirty-six Rosenthal accumulators. The plates are of the pasted type, with special provision for expansion. They are enclosed in perforated cases, and are clamped together by rubber bands. The working efficiency output of these cells is high, being 12 to 15 watt-hours per lb. of complete cell. The capacity of the batteries is 160 ampere-hours; they are placed out of sight half under the front seat and half under the back seat, thus distributing their weight. The controller consists of a single drum, carrying contact blocks, which

complete the necessary circuits successively between the insulated spring blocks. In order to give the drum a rapid action between its various positions, a spring roller is fixed in engagement with a cam wheel, and a pair of flat springs tend to hold it in either of its normal positions by pressing against flats on the shaft. The apparatus is arranged for no less than nine changes, viz.:—(1) Charging position; (2) Low speed reverse (three miles an hour); (3) Electric brakes; (4) low speed ahead (three miles); (5) intermediate speed (six miles); (6) increased speed (eight miles); (7) ten miles speed; (8) twelve miles speed; (9) top speed. The steering and electric controlling are very simple, and there are good brakes, while should, from any unforeseen cause, one set of the batteries or one of the electric motors become damaged, the other set of batteries and the other motor can be used to drive the carriage. The road wheels are of the artillery type shod with pneumatic tires, the weight of the vehicle complete being 17 cwt. This car has made several runs from London to Brighton, over fifty miles, on one charge of electricity, and performed well at the Automobile Club trials of electric vehicles at Chislehurst in November of last year, coming out first with the best results of miles per cwt. of car. An electric coupé without equipment was also staged. This vehicle is in cab form, built of light varnished wood, and intended to seat three persons and one driver. It will be equipped with two of the well-known Joel motors and the Rosenthal battery, exactly as on the "Brighton." Other exhibits at this stand

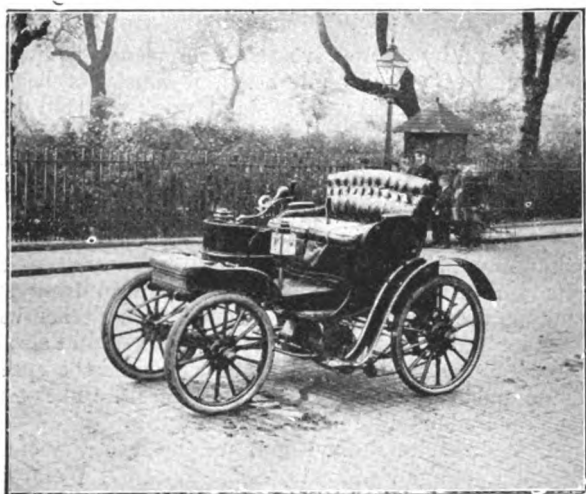


FIG. 15.—THE BRIGHTON ELECTRIC VOITURETTE.

were a Joel 2 h.p. motor, Rosenthal battery, Joel underframe and controller, particulars of which are given above. The British Steam Traction Syndicate, Limited, of 37, Walbrook, E.C., also occupied a part of this stand with an exhibit of the "Millennium," a preparation for automatically closing punctures in pneumatic tires. "Millennium," which is a liquid of the consistency of cream, is compounded of certain chemicals, which, after having been subjected to a special treatment, form a homogeneous mass possessing certain peculiar properties, which constitute it an ideal substance for automatically and instantaneously closing and hermetically sealing punctures and perforations in tires. It is put up in small collapsible tubes, of which the contents are easily injected into the tire through the valve.

Electrical vehicles are the speciality of the Imprimis Motor-car Company, of 78, Queen Victoria Street, London, E.C., who are introducing the cars built by Herr Heinrich Scheele, of Cologne, into this country. We first inspected a two or three-seated phaeton, having a capacity of from 30 to 50 miles on one charge of the battery, which consists of forty accumulators. Two electric motors are geared direct, one to each of the rear wheels. The controller is adapted to give three speeds forward—the maximum being about twelve miles per hour—and two

reverse motions. Particular attention has been paid to the brake power, while the steering is controlled by an irreversible hand wheel. The car, which is mounted on pneumatic-tired wheels, weighs, complete, about 16 cwt. Another pleasure carriage on similar lines as regards the battery, motors, and controller, was a three or four-seated "Mylord" coupe, fitted with road wheels shod with cushion tires. The Imprimis Company also had on view an electrical delivery van (Fig. 16).



FIG. 16.—THE IMPRIMIS ELECTRICAL DELIVERY VAN.

It is intended to carry a load of about a ton, and is propelled by means of a 6 h.p. electro-motor. The motor shaft is geared to a countershaft by spur gearing, special duplicate chain gearing conveying the power to the rear axles. The battery consists of forty accumulators, having a capacity sufficient to run the vehicle thirty-five miles on one charge. The cells are carried in a box which is supported on springs to overcome the vibration due to the vehicle being fitted with iron-tired wheels. The controller is arranged to give three forward speeds, ranging up to twelve miles per hour, and two reverse motions.

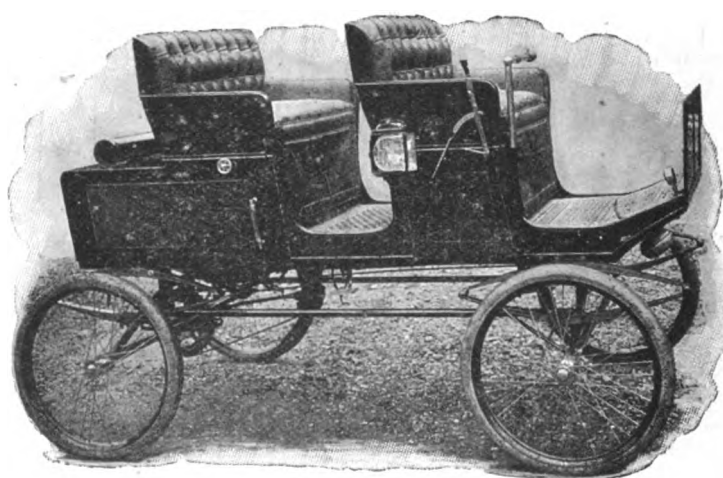


FIG. 17.—THE LOCOMOBILE FOUR-SEATED STEAM CAR.

Two large stands were barely sufficient for the representative and interesting display made by the Locomobile Company, 52, Sussex Place, South Kensington, S.W. The public is becoming familiar with the neat style of this company's vehicles, and the many hundreds of people carried by them round the arena during the week will probably become speaking witnesses to the easy running of the Locomobile. Both two-seated and

four-seated cars were shown, the latter including vehicles similar to that (Fig. 17) supplied to Commander Wells to the order of the London County Council. Further interest was given to the exhibits by the presence of a car without a body top, so that the internal arrangements could be easily seen, thus taking the public into confidence—a concession that elicited hearty approval. There was also a section of a boiler made in the summer of 1899 which has since done duty in a car that has travelled 14,000 miles.

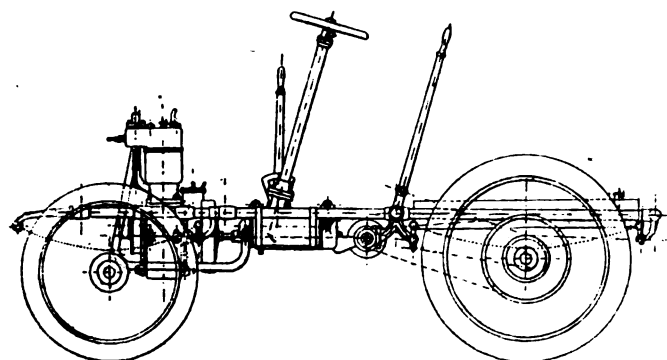


FIG. 18—ELEVATION OF THE "YORK" CAR.

The fact that it is still in good condition will be an assurance to many who have had no evidence of the durability of the boilers fitted in the Locomobiles. An example of the burner and the automatic oil feed, by which those interested might see the ingenious manner in which the pressure of the steam is caused to shut off the oil at a given pressure, was also displayed upon the stand.

The British and Colonial Motor Car Company, Limited, of 38, Snow Hill, E.C., and 14, Baker Street, W., exhibited two and three seated Pieper voiturettes. The motor in the Pieper voiturette is of the 4 h.p. single cylinder vertical water-cooled type. A supply of water sufficient for a 230-mile run is carried in the water tank, which is placed inside the carriage body. From there the water is pumped through the water-jacket of the motor to the radiator, a centrifugal type of pump being employed and driven direct from the motor. Belt transmission has been adopted, and also inclined wheel steering. A single wide belt connects the pulley on the motor shaft to three pulleys arranged on a countershaft. This belt is moved on to any one of the three pulleys—two fast and one loose—by means of a speed handle placed to the left hand of the steering post. The belt can be tightened or loosened by means of a detachable

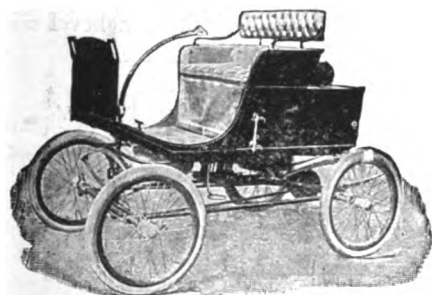


FIG. 19.—THE "OPHIR." STEAM CAR.

key fitted to the front of the car. By rotating this key the motor is moved backward or forward, thus loosening or tightening the belt. The two outer pulleys each have connected to them spur wheels, meshing with corresponding pinions on the rear axle. Two brakes are provided, and the speeds arranged for are from ten miles and twenty-two miles per hour; these may be varied largely by the ignition timing device. Later in the week two additions were made to this stand. First a latest pattern of the York (Boyer-Prunel) car (Fig. 18). The vehicle is handsomely got up, and has a roomy *tonneau* body. The engine, which is in front, is an 8 h.p. Buchet

of the single-cylinder vertical type. Electric ignition is fitted, and the timing of the ignition is under the same control as that of the De Dion. The working parts of the car follow somewhat upon the lines of a small Panhard—that is to say, chain driving to the wheels is employed, and the countershaft is driven by means of bevel gearing. The gear-box is placed conveniently under the floor boards, and can be got at easily. Three speeds ahead and one reverse are available. The framework of the car is tubular, while the motor is very securely fitted to it. The steering heads work upon ball bearings, and geared wheel-steering is employed. The second addition was the Ophir steam car (Fig. 19 and 20), an American-built vehicle possessing a number of novel features which may be summed up as follows: The running gear, the engine frame construction, engine suspension, the transmission to the driving axle, the brake and the arrangement of the controlling devices. The characteristic of the running gear is that the axles do not consist, as in most steam carriages, of one straight and one

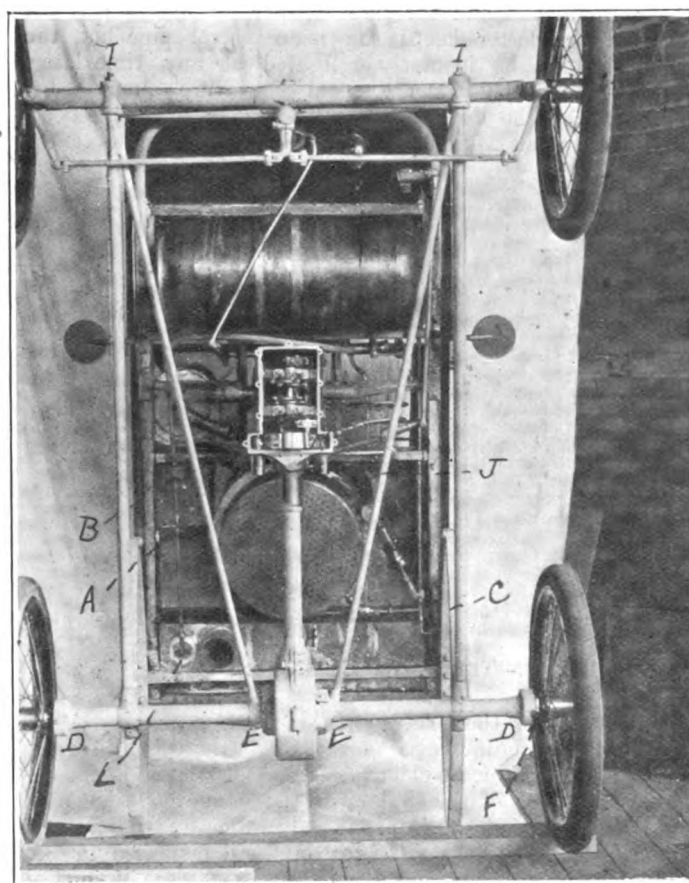


FIG. 20.—UNDER VIEW OF "OPHIR" STEAM CAR.

curved member, but contain a single straight member only. There are two pairs of reaches (arranged in the form of a V), one on each side, the forward end of each pair being combined in a horizontal swivel joint, passing through the front axle a few inches from each steering knuckle. This arrangement, it is claimed, gives great strength and the necessary flexibility to the carriage in passing over obstructions. The wheels are 28 in. in diameter, and are equipped with ball bearings, wire spokes, and $2\frac{1}{2}$ in. pneumatic tires. The body and seat are of extra width, and are made of wood, except the top of the rear box, which is of sheet steel, and has the cross draught flue for the boiler riveted to it. The wheel base of the carriage is 5 ft., and the gauge of the road wheels 4 ft. 8 in. The boiler is placed in the centre of the body, directly behind the engine. It is of seamless steel, 14 in. in diameter and 18 in. high, and contains 405 $\frac{1}{2}$ in. copper tubes. The working steam pressure is 180 lbs. per sq. in. Arrangements are provided

whereby the fire, when the steam pressure reaches 200 lbs., is automatically shut down. A safety valve is placed above the water-line, near the top of the boiler, and is arranged to blow off at a pressure of 250 lbs. into the water tank. There are try cocks located on the side of the boiler, and an auxiliary hand feed pump placed beneath the footboard. The water-glass connections are fitted with the usual automatic check valves, but each check is so arranged that it can be raised off its seat by turning a small lever. The burner is of the pilot type, the petrol pipe not being carried through the boiler, but through the burner itself, and over the flame of the pilot burner. In starting, it operates on the principle of the well-known plumber's torch; a small quantity of methylated spirit is allowed to run down into a small cup beneath the pilot burner, and is lighted, thus heating the burner enough to generate vapour. Upon lighting the pilot burner jet the main petrol pipe leading to both burners is heated, and the main burner can then be lighted. The petrol supply is controlled, in the usual manner, by an automatic diaphragm regulator. But during any stop, while operating the carriage, the main burner can be extinguished and the pilot burner left lighted; as the flame from the latter keeps the main petrol pipe hot, the main burner can be instantly relighted at any time later, regardless of what the steam pressure may be. The engine is of the double vertical cylinder reversing type, with cylinders about 2½ in. by 4 in. It is located in the centre

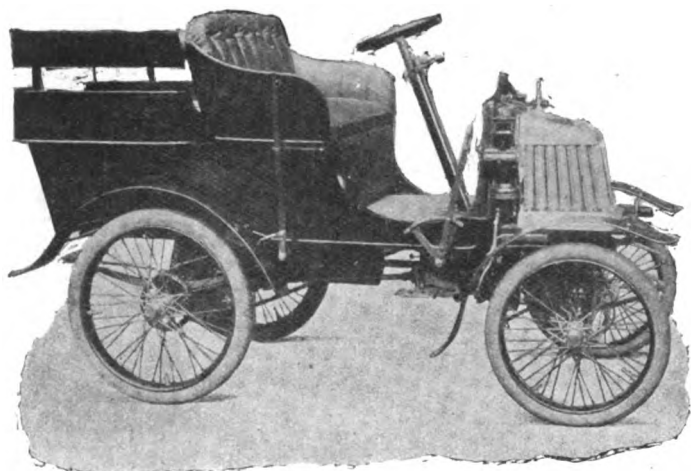


FIG. 21.—THE HOZIER CO.'S "TONNEAU."

of the body, under the seat, so placed that its shaft extends directly back to the differential on the rear axle, which it drives by means of bevel gear, no chains being used. To allow for the necessary movement of the engine, as the body moves on the springs, the engine is hung from the body frame by two hangers, one on each side. For the same reason there is placed in the steam pipe between the boiler and engine a short piece of vertical pipe, having at each end a ground, steam tight, taper joint, which is free to swivel horizontally. The engine, shaft, and differential are all enclosed in dust-tight cases, the tube covering the shaft acting also as a distance piece between the engine and the rear axle. The feed pump is placed on the outside of the engine casing and is actuated by the rear cross-head, by means of a rocker shaft projecting through the casing. The cylinders are oiled by a single connection sight-feed lubricator; all the other bearings are lubricated by the splash system, two quarts of oil placed in the crank pit being said to be sufficient for about 500 miles. The water tank is extra large, filling the whole of the rear part of the body and surrounding the boiler. It has a capacity of thirty-four gallons, sufficient for a run of thirty miles, has large openings on each side for filling, and is provided, in the pipe leading to the pump, with a combined strainer and filter, which can be readily cleaned by unscrewing a small plug. The petrol supply, about ten gallons, which will run the car from ninety to one hundred miles, is carried in a large seamless, cylindrical tank, placed under the footboard. As the capacity of this tank is over twelve gallons, there is an empty space at the top sufficient to hold the necessary air pressure, thus dispensing with the usual

air tank. As the carriage is operated from the left side, all gauges, water glass, regulating valves, etc., are placed on that side. The steam throttle is operated by a small lever at the side, and the reverse by a pedal, moved by the right heel of the driver and held in forward gear by the action of a spring. The boiler feed is controlled in the usual manner by means of a by-pass valve placed under the end of the seat alongside of the driver's knee. The brake, which is operated by a pedal, acts on a drum on the engine shaft, placed inside the casing at the rear. As

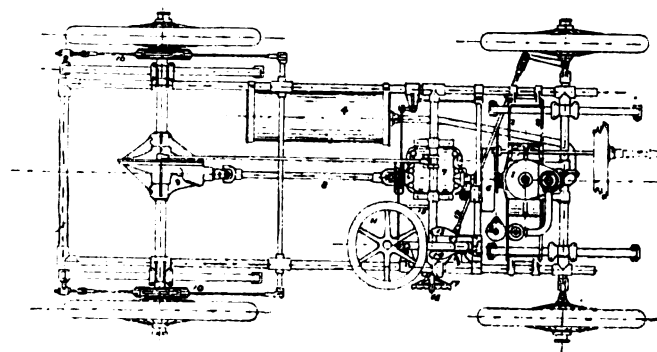


FIG. 22.—PLAN OF ARGYLE VOITURETTE.

the brake consists of two different straps, operated by separate eccentrics on opposite sides of the shaft, it is claimed to be double-acting and very powerful. Loaded, the car weighs about 13 cwt.

The novelty on the stand of the Hozier Engineering Company, Limited, Hozier Street, Bridgeton, Glasgow, was the four-seater *tonneau* (Fig. 21) which was exhibited for the first time. The frame is of tubular construction, in the fore part of which, under a light bonnet, is mounted a 5 h.p. vertical M.M.C. De Dion motor. It is of the water-jacketed type; no pump is employed, the circulation being on the thermo-siphon system. Only a relatively small quantity of water is carried, a radiating coil being fitted around the bonnet. The motor is fitted with a new inlet valve, which controls the quantity of mixture admitted to the cylinder, and enables the driver to run the motor at any desired speed. The engine stays are in the form of bell cranks, and are fixed to the frame, brazed on in such a manner as to make the engine absolutely rigid with the frame. Fig. 22 gives a plan view of the motor and transmission gear. In the transmission mechanism no chains or belts are employed; two forward speeds and a reverse motion are provided, and a speed of twenty-five miles an hour can be obtained. The engine, which is set transversely in the frame, transmits its power through a friction clutch to a train of spur wheels meshing with a similar train on a parallel shaft, a bevel wheel on the

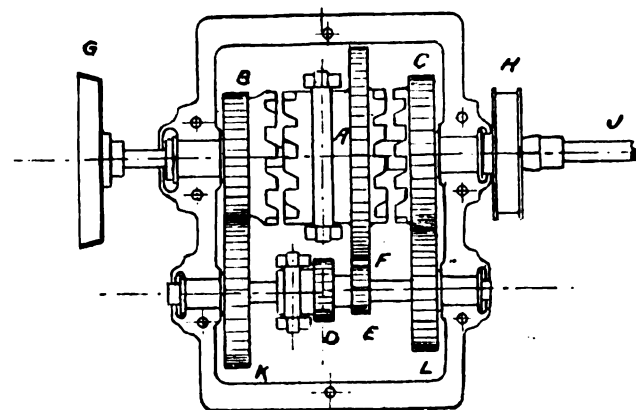


FIG. 23.—SECTION OF HOZIER COMPANY'S CHANGE SPEED GEAR.

rear end of the latter gearing with a bevel pinion on the rear live axle. The gears are all enclosed in oil-containing cases. Ample brakes are provided, there being a hand brake on the countershaft and similar brakes on drums attached to the hubs of the rear wheels. Wheel steering is fitted, while the cycle-type

road wheels are shod with Clipper pneumatic tires. The vehicle complete weighs about $8\frac{1}{2}$ cwt. The Hozier Company also displayed a couple of their well-known two or three seated Argyll voituresses; these are fitted with 3 h.p. and 5 h.p. water-cooled De Dion motors respectively; no pump is employed, but a Clarkson-Capel radiator is fitted in the front part of the

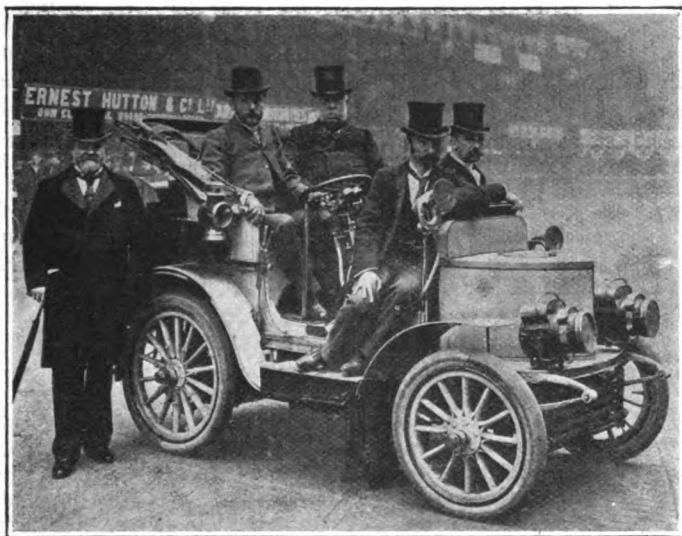


FIG. 24.—THE SERPOLLET STEAM RACING CAR—M. SERPOLLET AT THE HELM.

car. It will be remembered that a car of this type was recently driven by Mr. Warren Smith from John-o'-Groat's to Land's End. The general arrangement is the same as in the 5 h.p. car; the motor is placed in front, the main shaft being at right angles to the axles. To the motor a friction clutch is fitted in conjunction with a band brake; by pressure on a foot pedal the motor runs free, and simultaneously the band brake pulls the car up. The variable gear is arranged to give approximately eighteen, twelve, and six miles per hour; also a slow reverse. The power is transmitted from the gear box to the differential gear on the back axle by means of bevel gear. The road wheels are of the cycle type, 26 in. diameter at the front and 30 in. at the rear, all being shod with Clipper pneumatic tires. The two-seated cars weigh complete about $4\frac{1}{2}$ cwt. The change-speed gear, of which an actual sample was separately shown, is of new design. A sectional view of the device, which is adapted to give three speeds ahead and one reverse, is given in Fig. 23 G is a conical leather-faced friction clutch, mounted on the engine-shaft. The sliding clutch A is mounted on feathers on the hollow shaft which carries the brake drum II, and the propeller shaft J, by means of a universal joint. When the clutch A is engaged with the pinion B (which is mounted on feathers on the friction clutch spindle) no reduction of speed takes place, as the intermediate speed pinion C runs loose on the hollow shaft. When the clutch A is engaged with the intermediate speed pinion-C, the pinion B then drives the countershaft, on which are fixed the gear wheels K and L; this reduces the speed on pinion C, which now drives the car. To obtain the slow speed the clutch A is placed in a centra position, and the slow speed pinion D is moved on the feathers along the countershaft into the slow speed pinion, which is mounted on clutch A. To reverse the car, an intermediate wheel is introduced between the pinion on clutch A and the pinion E on the countershaft. It will thus be seen that the pinions giving the second speeds are always in mesh, and that on the top speed the power of the engine is transmitted direct without the intervention of any gearing. The levers which actuate the different speeds run in slots in specially-shaped cams.

An unusual amount of interest was shown in the exhibit of the British Power Traction and Lighting Company Ltd., York, where a 9 h.p. brougham, a 9 h.p. double phaeton, a 6 h.p. vis-a-vis, and the identical car (Fig. 24) on which M. Serpollet recently won the Rothschild cup at Nice, were staged. In each case the

boiler is arranged at the back of the vehicle, and the horizontal engine is under the footboard. It drives direct on to one shaft, from which power is transmitted by a single chain to a balance gear on the rear axle. An important feature consists in the use of ordinary lamp oil, instead of petrol, for the burner. The working steam pressure can be raised from cold in five minutes with the 6 h.p. size, a couple of minutes more being required for the 9 h.p. and 12 h.p. cars. The steam generator is a flash boiler, and the small tubes are of exceptional strength and thickness. Automatic regulation of fuel and water is provided by connected feed pumps, and a condenser is fitted with an arrangement for retaining the water for further use, so that a run of seventy miles can be accomplished on one charging. As the boiler pressure rises there is an automatic decrease of fuel supply, and it is claimed that even if the water supply is neglected the fire will not suffice to burn the boiler. The steam valve is worked by a pedal, and the car cannot start unless pressure is put on this. The foot, when the car is running, is kept on this pedal, and the harder the foot pressure the greater the quantity of steam admitted to the cylinders, of which there are four to each engine. The tubes of the condenser are each capped at both ends for easy cleaning or

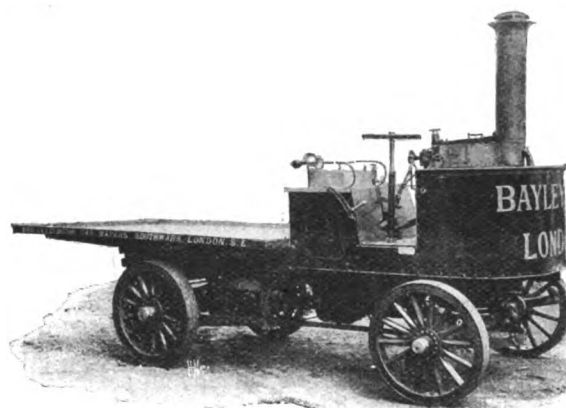


FIG. 25.—THE BAYLEY STEAM MOTOR TROLLEY.

removal, and the whole of the engine and all the steering and pumping gear are secured to a single plate bolted to the frame. In common with other steamers the Gardner-Serpollet is devoid of change speed gears, the control of speed being solely effected by regulating the quantity of steam admitted to the cylinders.

M. Serpollet had been for many years engaged in the perfecting of his steam vehicles, and has succeeded in producing a practicable type which has already met with a large adoption in France. Now that the cars are to be constructed in England we expect to see them become equally popular in this country. The details of the Serpollet system were fully described in our issue of March 30th last.

Near the entrance in the Minor Hall was the stand of the Auto-Machinery Company, Ltd., of Read Street, Coventry, who had a showcase filled with ball thrust bearings, rollers, nuts, pins, steel and bronze balls, etc., all of which seemed characterised by good finish. Cup and cone bearings for motor-cars were also shown. There was also a 5 h.p. "Auto" motor with large bearings. A roller bearing was shown running at 1,350 revolutions per minute and carrying a load of a ton. A valveless circulating pump was demonstrated in action. The Garlio cleaning cloths which will be found useful by motorists were also shown on this stand by the company bearing that name, and whose headquarters are now at Erith, Kent.

The only heavy steam business vehicle shown was that on the stand of Messrs. Bayleys, Limited, of Newington Causeway, Southwark, S.E. The vehicle is (Fig 25), designed to carry a load up to three tons, and, with the addition of a trailer, up to six tons, at speeds of five miles per hour for heavy, and eight miles per hour for light loads. The trolley is 16ft. 9in. in total length by about 6ft. 6in. in width, the wheel base being 9ft. The frame is of channel steel rigidly jointed together by steel angles. Both front and rear wheels are dished, thus providing for any undue side strain which may be thrown upon the vehicle when turning corners and heavily laden. The wheels are constructed

of oak spokes, ash felloes and steel tires. The diameters are 3ft. 3in. and 2ft. 9in., with tires $4\frac{1}{2}$ in. and 4in. in width, hind and front wheels, respectively. Steam is supplied by a water tube boiler, the fuel employed being coke. The working pressure is normally about 200lb. to the square inch. The feature of the boiler is that all tubes are horizontally arranged in radial directions, so that any expansion or contraction on the part of either the inner or outer shell, to which the tubes are secured,

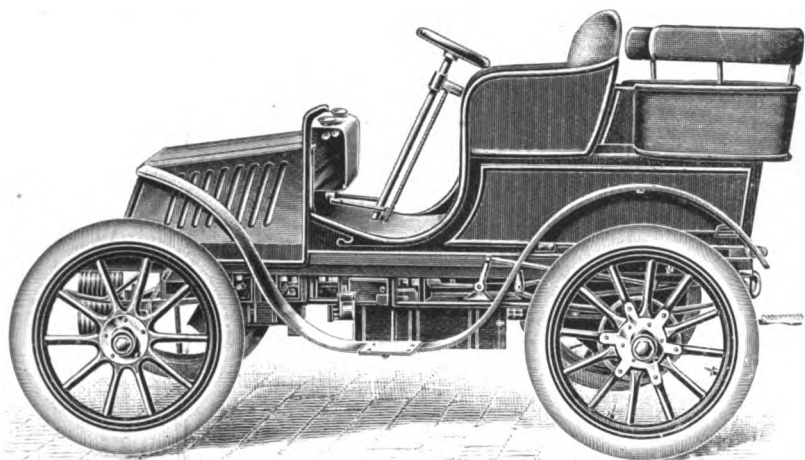


FIG. 26.—THE MARSHALL GEAR-DRIVEN CAR.

throws an equal strain upon the entire series of tubes, thus preventing the possibility of expansion or contraction causing leakage. The steam is slightly super-heated before passing on to the engine and is again super-heated when in an exhausted condition, so that no visible vapour is emitted from the funnel. The engine is of the compound vertical inverted type fitted with single eccentric reversing gear, of 25 h.p., all being completely encased in a dust-proof and oil-tight casing. The power is transmitted from the engine to the hind road wheels by means of tooth gearing. The engine crankshaft carries two sliding pinions with actuating gear, providing for the engagement of either of these with two spur wheels keyed on the main longitudinal shaft, two speeds being thus provided. The rear end of the longitudinal shaft carries a pair of bevelled wheels, which through the medium of differential gearing drive the two transverse countershafts, which rotate in cast steel sleeves. At the outer ends of the countershafts are keyed toothed pinions, which gear into internal tooth rings bolted to the spokes of the road wheels. The reversing gear of the engine acts as a strong brake, thus retarding all forward motion. In addition to this, two other powerful brakes are provided, firstly, a double purchase wooden block brake acting on a cast steel pulley, keyed to the engine crankshaft and actuated by a foot pedal, and secondly, a pair of hand-operated band brakes, by which steel wooden-clothed straps are gripped on the outer periphery of the gear rings mounted on the driving wheels by means of a hand lever. Steering is effected by a hand wheel, through worm and wheel gearing. The water is carried in a tank secured to the frame at the back of the driving wheels; its capacity is 100 gallons, sufficient for a run of three hours. To give additional security to the boiler and prevent any colliding or damaging of the front of the vehicle affecting the steam raising plant, the coke bunker encircles entirely the front of the boiler to the extent of one foot in depth, thus providing room for 3 cwt. of coke, and acting as a buffer to prevent the possibility of an accident.

The General Automobile Agency, of 100-104, Long Acre, London, W.C., exhibited a number of interesting cars; but as these consisted largely of well-known types, no lengthy

description is necessary. The largest vehicle on the stand was a 20 h.p. Mors with a *tonneau* body constructed of aluminium, by Rothschild, of Paris. The engine is of the four-cylinder vertical type, located under a bonnet in the fore part of the frame. The transmission is very similar to that adopted in the Panhard cars, four speeds ahead and a reverse motion being available. A variation of the popular 6 h.p. Darracq car was to be seen in one with a four-seated phaeton body, the entrance to the back seats being by a door at the rear. The Darracq Company are now building a slightly larger car of the same type, but fitted with a 8 h.p. engine, one of which was to be seen at the stand, as was also one of the Decauville Company's 6 h.p. three-seated cars. Further variety was given to the exhibit by a 5 h.p. Peugeot car with reversible front seat and wooden wheels, and a Panhard light car fitted with a 7 h.p. two-cylinder engine; both these vehicles have been illustrated in the *Journal*. In addition to petrol automobiles this company also staged a Petromobile four-seated steam surry. For a full description of this new American car we refer readers to our report of the Petromobile Company's exhibit.

Considerable attention was paid to the stand of Messrs. Marshall and Company, of the Belsize Works, Clayton, Manchester. Hitherto this firm has devoted its energies to belt-driven cars, but has now taken up the construction of gear-operated vehicles, and apparently with a large measure of success. The new car (Fig. 26) which has been built to the designs of Mr. J. J. Mann has a channel steel frame, in the fore part of which, under a bonnet, is set a Buchet vertical two-cylinder motor developing $8\frac{1}{2}$ h.p. Each cylinder is provided with a distinct water-jacket, there being no water-joints. The circulation is maintained by a pump, but the tank is so located that, should the pump get out of order by any means, the water will continue to circulate by gravity. A radiating coil is fitted in the fore part of the bonnet.

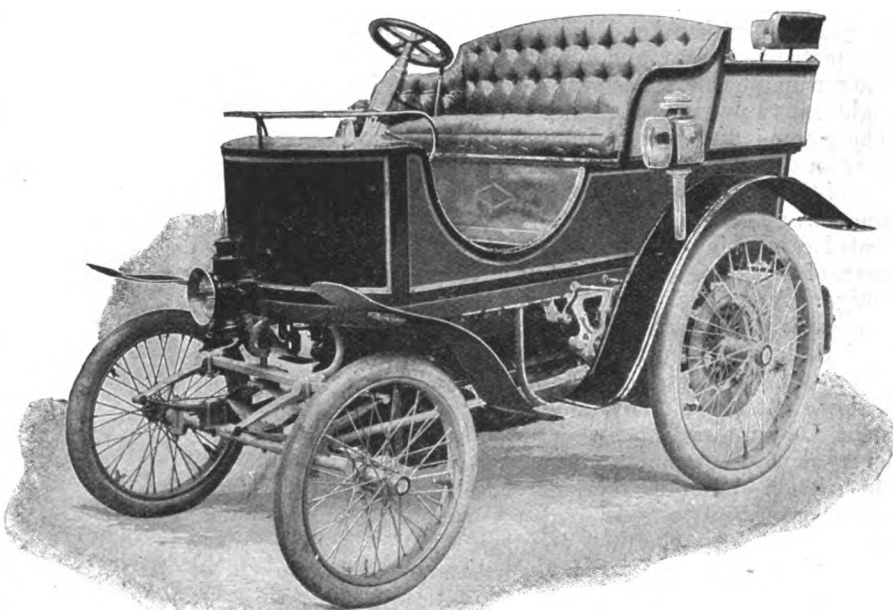


FIG. 27.—THE MARSHALL 8 H.P. BELT-DRIVEN CAR.

The motor transmits its power through a pedal-operated friction clutch to a gear box of the Panhard type, giving three speeds ahead and one reverse, controlled by one lever. Special attention has been paid to the question of obtaining a durable gear, the pinions comprised in it being $\frac{7}{8}$ in. wide. From the gear box the power is transmitted by a universally-jointed longitudinal shaft and bevel gearing to the rear live axle. It should here be mentioned that the engine and change speed gear are mounted on a special frame independent of the main frame. The body of the car is of the *tonneau* type, giving comfortable accommodation for four persons. The road wheels are of the artillery wooden type, $31\frac{1}{2}$ in. in

diameter, shod with Clipper-Michelin 80 m.m. pneumatic tires. Inclined wheel steering is fitted; a pedal actuates a band brake on the differential gear, and a hand lever double-acting band brakes on the hubs of each of the rear wheels; a feature of the brakes to which attention may be drawn is that they are metal to metal, so that there is no likelihood of them firing. The new car weighs about $9\frac{1}{2}$ cwt. and can attain a speed of upwards of thirty miles per hour. Altogether this is a powerful, well-built light car, of which much is likely to be heard in the not distant future. In belt-driven cars a new type was to be seen in the 8 h.p. Marshall *tonneau* (Fig. 27). The engine is of the single-cylinder horizontal water-cooled type. Three speeds and one reverse are obtained by means of belts working on fast and loose pulleys, a new feature being the arrangement adopted for changing speed and belt striking, the three speeds and reverse being obtained by a lateral and vertical movement of one handle set immediately below the steering wheel on the inclined steering pillar. The connection between this handle and the belt strikers is made by Bowden wire mechanism. The throttle, sparking, and air levers connected with the motor are also operated by Bowden wires. From the countershaft a couple of Renold roller chains convey the power to the rear road wheels. Provision is made whereby the tension of the chains may be adjusted without interfering with the tension of the belts, the back axle and spring moving on dovetailed slides fixed to the underside of the frame. Tension on the chain is obtained by an adjustable radius rod fitted with locking nuts in the usual way. A new large double silencer with double cylinders in tandem is fitted below the

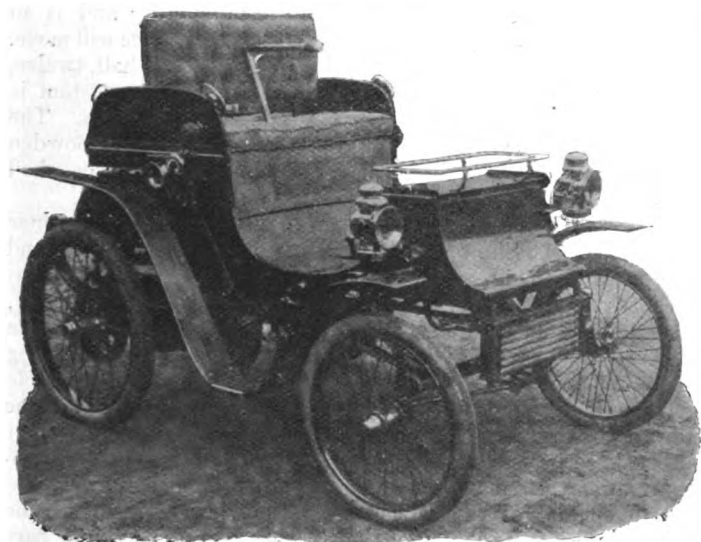


FIG. 28.—THE CAPEL CAR.

frame. The radiators are set underneath the footboard and below the frame. Special attention has also been paid to the accessibility of the induction and exhaust valves of the motor. Wooden or cycle-type wheels can be fitted, these being shod with Clipper-Michelin pneumatic tires. Both hand and foot brakes are provided. Messrs. Marshall and Co. inform us they have specially designed this car for those who desire, at a reasonable price, an exceptionally speedy car, not only on the level, but on the hills, and one that can be easily understood and kept in thorough order by anyone with the slightest mechanical knowledge. In addition to the foregoing a couple of their well-known type of 6 h.p. belt driven cars were also shown. One took the form of a dog-cart with seating accommodation for five persons. It is fitted with a 6 h.p. horizontal petroleum spirit motor, with electric ignition and water jacket. The circulation is maintained by a small pump, radiating coils being now fitted to all cars. Three speeds forward and reverse motion are available, the transmission being effected by belts working on fast and loose pulleys. The other neat car was the Marshall four-seated *tonneau*, the firm having got over the difficulty of building a body of this type on a chassis in which the motor is at the rear in an ingenious way. This, with the exception of the body, is similar

to the dog-cart, being fitted with 6 h.p. motor, radiating coil, three speeds forward and reverse, etc. It is claimed for these cars that they can make a 200 miles trip without renewing either water or petrol. The differential shaft is mounted on swivelled roller bearings, with the result that the loss of power through transmission is considerably lessened. Belt troubles have also been overcome by using special belts of enormous strength, and an arrangement by which any "stretch" can be taken up in two or three minutes with the minimum of trouble. The road wheels are of the cycle type shod with pneumatic tires.

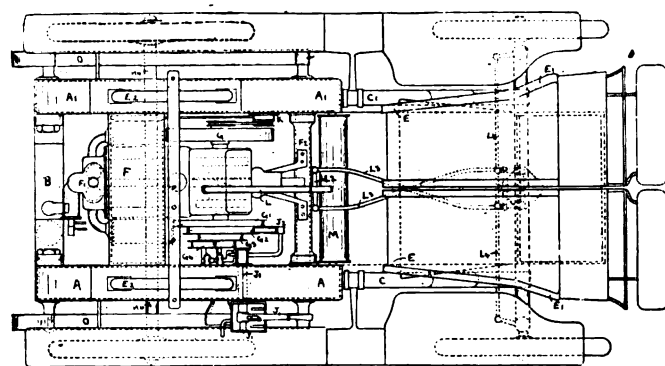


FIG. 29.—PLAN OF CAPEL CAR.

The Creek Street Engineering Company, of Deptford, S.E., exhibited a car built by them to the designs of the late Mr. H. C. Capel, the rights for which they have acquired. The car (Fig. 28), which is adapted to seat four persons, weighs about 9 cwt., is under complete and easy control, and travels smoothly even over rough and uneven roads. The framework is composed of an aluminium petrol tank, A (Fig. 29), and a similar water tank, A₁, which are connected together by the carburettor, B, and the cross-piece F. The tanks are connected rigidly

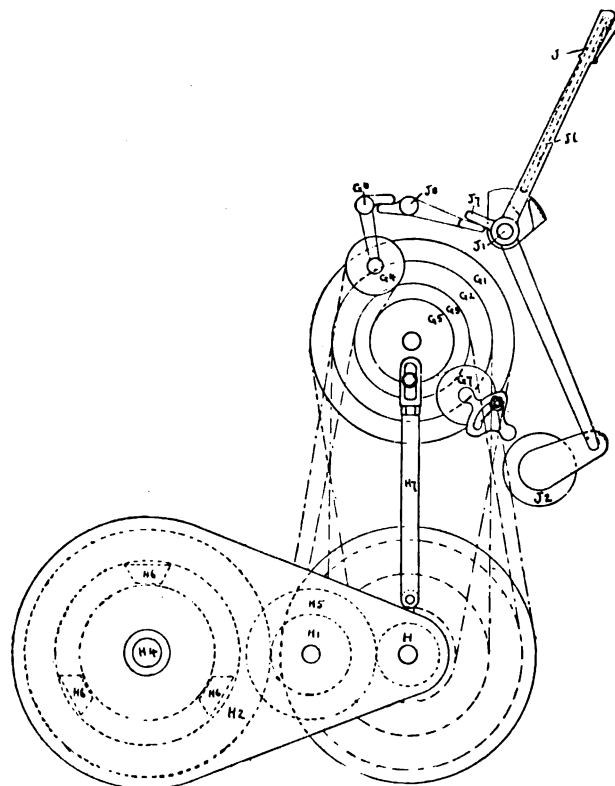


FIG. 30.—THE CAPEL VARIABLE-SPEED GEAR.

with the tubular framing, they also are attached to the springs O, O, and C, C₁, which carry the back and front axles respectively; C springs also connect the front axle to the frame. The seats, together with their footboards, are fixed separately to tubular frames, hinged to the main body of the car, and are consequently capable of being swung forward,

or of resting in their normal positions upon a bar carried upon the flat springs, E_2 , on the tanks, A, A_1 . By placing these seats in their forward positions, and by removing a cover at the rear of the car, the whole of the propelling mechanism can be readily got at when desired. The motor, F , is fixed horizontally. It has two water-jacketed cylinders, and develops 5 b.h.p. at 750 revolutions per minute. The two connecting rods work upon crank pins, which are in line with one another, and between them is fixed a worm wheel. This wheel drives the cam shaft at half the speed of the crank shaft by means of a worm wheel. The crank chamber is fitted with a cover, which enables the bearings to be taken up when necessary, and this cover is itself provided with an inspection cover. The cam shaft is hollow, and the governing rod passes through and slides within it. The duties of the governor are threefold:—(a) to act upon the throttle valve and regulate the admission of mixture to the cylinders; (b) to actuate the contact maker, which causes ignition in the cylinders, in such a manner as to vary the time of ignition to suit the speed of the engine; and (c) to slide the exhaust cams along their shaft in such a manner that half compression only is attained in the cylinders for starting the motor by hand below a certain speed. The governing rod is fitted with a spring at either end, that at the right-hand end being weaker than the spring at the other end; the governor acts against the stronger spring. A hand lever enables the driver to regulate the

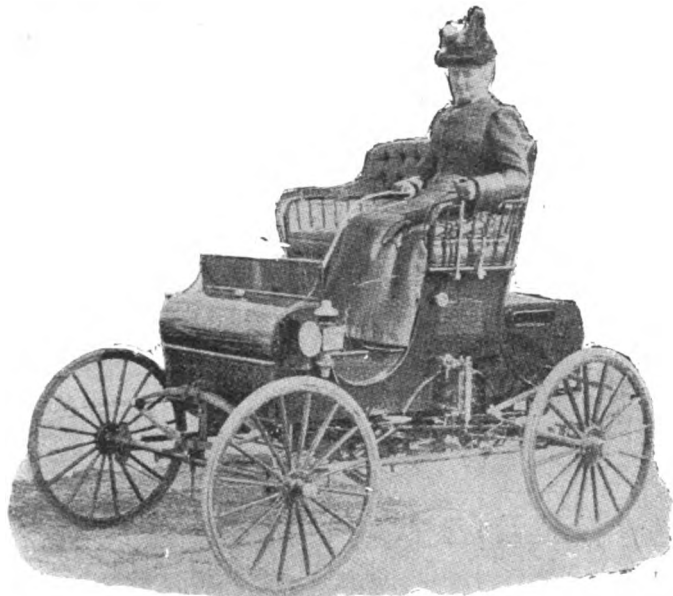


FIG. 31.—THE "PETROMOBILE" STEAM CAR.

normal engine speed. The inlet valves are actuated automatically, and are both held in place by means of a cover, which is fixed by a single nut; they are thus readily removable. The exhaust valves are placed immediately below and opposite to the induction valves; they can be examined when the inlet valves are lifted out. The exhaust valves are operated positively by means of cams and a rocking lever, L . The variable-speed gearing is seen in Fig. 30. The motor shaft carries four leather-covered pulleys of different sizes, G_1, G_2, G_3 , and G_4 ; the first three of these are connected by slack chains with three different sized pulleys upon the counter-shaft, H . Either of these three chains can be caused to tighten and to transmit power from the motor to the shaft, H , by means of the jockey pulley, J_2 . This jockey pulley is carried upon a rocking lever, J_1 , and can be caused to tighten whichever chain it is placed against by means of the hand lever, J . The lever, J_1 , is capable of sliding longitudinally, and can consequently be made to tighten either of the three chains, according as to whether the hand lever, J , is drawn over a toothed quadrant. The lever can be locked in either forward driving position. The pulley G_4 provides the reversing gear. The chain which it drives only presses against a portion of its periphery; it passes over an idle pulley, G_7 , which is adjustable, and round a jockey pulley, G_4 .

This chain also encircles a pulley on the shaft, H . The reversing gear is actuated by means of the hand lever, J , and is brought into play by rocking this lever in a backward direction. Whatever the longitudinal position of the levers, J and J_1 , the projection, J_2 , upon the latter, is capable of tightening the reversing chain. The counter-shaft, H , is fitted with a pair of gear wheels which drive the planet wheels, H_8 , of the differential gear, on the

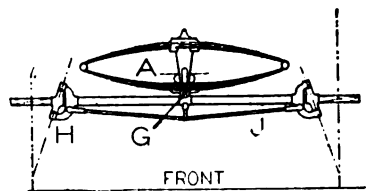


FIG. 32.—DIAGRAM OF "PETROMOBILE" FORE-CARRIAGE.

rear "live" axle, H_1 , by means of the intermediate gear wheels, H_2, H_3 , and H_4 . The whole of this gearing is enclosed in a dust-tight case. The distance between the motor-shaft and the counter-shaft, H , can be adjusted by means of a swinging link, and the relative motion of the back axle and of the motor-shaft is compensated for by means of this construction. The motor-shaft is fitted with the fly-wheel, and with a chain wheel, which drives the rotary pump, circulating the cooling water through a radiator in the front of the vehicle.

The steering gear is particularly ingenious. The hand lever is so placed that the driver's left arm rests upon it; and is so arranged that it points in whichever direction the vehicle will move. The change speed gear is calculated for four and a-half, twelve, and twenty miles an hour. The capacity of the water system is six gallons, and that of the petrol tank is five gallons. The "accelerator" and gas control are operated by means of Bowden wire mechanism. The road wheels are of the cycle type, shod with pneumatic tires.

Among the several new steam cars which made their appearance at the Show was the "Petromobile" (Figs. 30, 31, and 32). This car, which in America is known as the "Kiddier," has been introduced into this country by the Petromobile Company, of 5, Thavies Inn, London, E.C., and Colne, Lancashire. As the vehicle comprises a number of new features, the following description may be of interest. The frame of the vehicle carrying the machinery is mounted on springs, the under-frame being thoroughly flexible. The front axle is tubular and trussed and has steering forks with inclined pivots, bringing the prolongation of the centre line of the pivot at the ground near the point of contact of the wheel, with the view of insuring the much-desired irreversibility of the steering gear. The inner part of the rear axle is unbroken and of the same cross-section extending from outside to outside of wheels. On this axle is mounted in the centre a differential gear, the bevel wheels of which are riveted to bushed steel tubes, which pass through

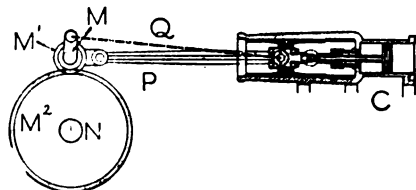


FIG. 33.—THE "PETROMOBILE" ENGINE.

the axle bearings and serve as the driving sleeves. The front and rear axles are held parallel to each other by means of two wooden reach bars, which by means of metal fittings fasten pivotally to the bearings on the rear axle and to the steering fork castings on the front axle. An elliptic front transverse spring is used, fastened to a pivoted spring block. A casting fastened to the upper part of the spring is provided with a groove in which the pivot stud may slide. The triangular frame is fastened to this

casting in front and to the elliptic springs in the rear. By means of triangular distance rods between the frame and the rear bearings the possibility of a lateral swing of the rear springs is avoided. The boiler, which is claimed to be unburnable, is of the upright tubular type, 16 in. in diameter and 18 in. high. The outer shell is constructed of best steel boiler plate, 7-32 in. thick. Three hundred and twenty-six copper tubes of $\frac{1}{2}$ in. diameter and No. 20 Stubbs gauge are used, giving an effective heating surface of 56 sq. ft. A baffle plate, fitting closely around the tubes, is placed in the upper part of the boiler, with a clearance of $\frac{1}{2}$ in. all around between it and the boiler shell. The



FIG. 34.—THE NEW YORK TIRE.

object of this baffle plate is to prevent priming. There is a raised fusible plug in the crown sheet which will melt if the water should ever become less than 2 in. high in the boiler. The steam that would then issue from the opening of the plug would smother the fire and prevent injuring the boiler. The water and air pumps are placed on top of the engine cylinders, and are operated from the crank shaft. The feed is regulated by a by-pass, and the air pressure in the fuel tank is regulated automatically at 40lb. per square inch by a valve. The fuel tank is of steel, tested to 300lb. pressure per square inch. Thick annealed copper pipe only is used for all fuel and air connections. The capacity of the fuel tank is eight gallons, sufficient for 100 miles, while the water tank holds thirty gallons. The boiler is fired by a petrol burner; 40lb. air pressure in the fuel reservoir is automatically maintained by the engines, without hand pumping. The burner, an improved application of the Bunsen principle, is automatically regulated by the steam pressure. The working pressure is 170lb. per square inch, the "fire" being automatically lowered at 200lb. A cylindrical feed water heater, 4 $\frac{1}{2}$ in. by 17 in. long, with an enclosed coil of 20 feet of feed water pipe, receives the exhaust steam direct from the engines, thence discharging it to the condensers. These embrace 70 square feet of air cooling surface concealed within the body, and so nearly complete the condensation of steam as to entirely prevent noise, and to permit no objectionable escape of vapour to the atmosphere. The boiler feed pump is nearly automatic, a by-pass under perfect control returning any surplus to the water tank. An auxiliary hand pump is supplied for filling the boiler whenever desired. The hand pump is easily operated against any boiler pressure up to the maximum. The water gauge glass is metal encased except a view slit front and rear, well protected from injury. A water column with three gauge cocks is combined with the gauge outside. Two separate single cylinder horizontal reversing engines, having cylinders 2 $\frac{1}{2}$ inches diameter by 3 $\frac{1}{2}$ inches stroke, developing 6 h.p., are used, placed one on each side of the boiler. The common crank shaft of the engines is carried on the rear axle, and distance rods are employed to keep the distance between crank shaft and cylinders constant. Provision is also made to overcome any torsional actions of the springs. The crank shaft is forged with an enlarged diameter part in the middle, on which teeth are cut, and this pinion gears directly with the gear on the differential rear axle.

The body is adapted to seat four persons; the road wheels are of wood, 30 inches diameter in front and 31 inches in the rear, fitted with New York tires. Steam can be raised from cold within five minutes of lighting up. The total weight of the car, with fuel and water, is 1,000 lbs.; it can attain a speed of seventeen miles an hour, and ascend any hill at a good speed. A double-acting pedal-operated band brake on the differential gear is provided, while it is also intended to fit hand brakes acting on the hubs of the rear wheels. At the stand of the Petromobile Company was also shown the New York tire (Fig. 34), which is being introduced into this country by the New York Tire Company, of 5, Thavies Inn, London, E.C. The tire is of the single-tube pattern; but an inner tube of rubber is vulcanised to the outer cover, which has very heavy walls of fabric and pure para. There is but one inch (diameter) cross section of air space in the centre, the rest of the tire being material built up to 3 $\frac{1}{2}$ inches diameter cross section. The outer cover is pure para about $\frac{1}{2}$ inch thick, next inside of which come layers of fabric wound transversely all around the tire. This is done to cause the grain of the fabric to run diagonally in opposite directions, which, it is claimed, prevents any ordinary punctures. The tire will stand enormous air pressure, and is claimed to be very resilient. The tire has been fitted to several English cars which have been running for several months, and as yet none have been punctured. A cut tire may be re-vulcanised at a small cost, which makes the tire as good as new. The tire is being made in sizes up to 4 in., and for wheels up to 42 in. in diameter.

Considerable interest was centred in the Minerva motor-bicycle (Fig. 35) shown by Mr. D. Citroen, of 45, Holborn Viaduct, E.C. The motor is of the air-cooled single cylinder petrol type, and is of 1 $\frac{1}{4}$ h.p. It is fixed with four screws below the tube extending from the ball head to the bottom bracket of the main frame, and the box containing the carburettor and petrol tank is attached to the horizontal tube by two loops. The box also carries the battery and induction coil, the latter being thus protected against wind or rain. At ordinary speed the engine runs at 1,500 revolutions per minute, equal to about twenty miles an hour. By varying the sparking and mixture

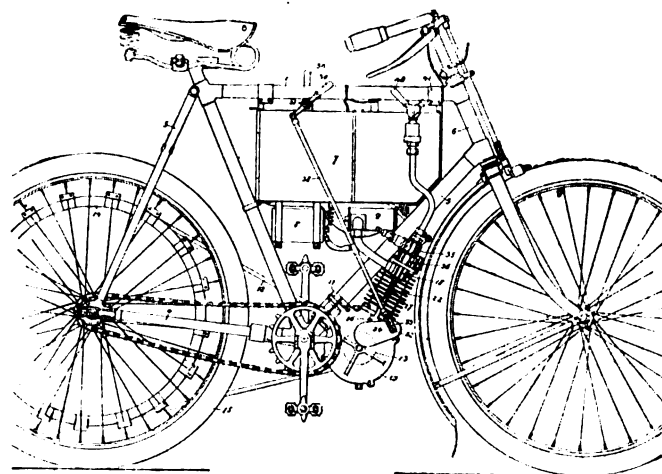


FIG. 35.—THE "MINERVA" MOTOR BICYCLE.

any speed from five miles up to thirty-two miles per hour may, however, be obtained. The motor shaft carries at its end a small pulley, which is connected by a strap to a light pulley attached to the rear wheel. The engine, petrol tank, and driving arrangement weighs complete about 40lb., and can be fitted to any bicycle having a frame from 23 in. to 26 in. The bicycle weighs complete 66lbs. Included on the stand was an interesting section of a Minerva motor, and also a frame showing all the various parts of the engine in detail.

A couple of the two-seated tandem voiturettes (Fig. 36) made by the Century Engineering and Motor Company, Limited, of Willesden Junction, were shown. The frame is of tubular construction and is so designed that its strength is concentrated in the driving line, which is parallel to the road. The drive of the engine

is transmitted direct from the axle of the back or driving wheel to the axles of the two front or steering wheels. The riders are seated tandem fashion, the front seat, which is upholstered in good style, being suspended upon C springs, the back seat being in keeping with same and arranged for the convenience of the driver, and both are so contrived that they are perfectly secure and comfortable for the longest journey. The weight of the

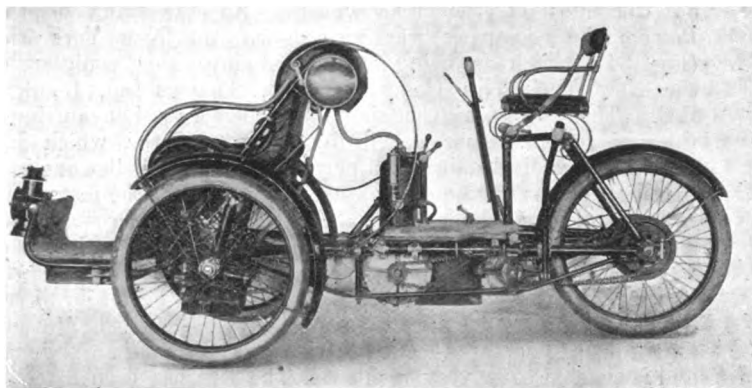


FIG. 36.—THE CENTURY TANDEM VOITURETTE.

riders is carefully disposed with regard to the centre of gravity, so that it is claimed to be impossible by any ordinary or fair means to upset the machine. Power is supplied by either a $3\frac{1}{2}$ h.p. De Dion, $4\frac{1}{2}$ M.M.C. De Dion, or 5 h.p. Aster water-cooled engine. Electrical ignition is employed, while the carburettor is of new design, positive in action, and differing materially from other known varieties. The gas and air valves are worked by one lever only, it being claimed that the carburettor is perfectly reliable under the most adverse conditions of roads and weather, consuming the petrol to the very last drop, even if of inferior quality. The carburettor is carried in front of the footboard, and has been considerably increased in size. Three circular wicks dip into the petrol, and these, with the area of the spirit in the bottom of the well, give a very large surface for evaporation. An ample radiator is set below the frame between the steering wheels. The water tank forms the pillow rest for the head in the front, and the petrol tank the seat in the well-suspended forward carriage; the batteries or accumulators are carried in a convenient box also beneath the seat. The water circulation is maintained by a gear-driven pump. The engine can be set in motion whilst disconnected from the machine by a key operated by hand, and on connecting up with either gear the machine will start straight away from a standstill without recourse to pedals. By means of a novel friction clutch very stiff gradients can be ascended by applying the low gear, or a great speed obtained with the high gear. Owing to the provision of a free-wheel device the engine can be disconnected from the machine, or the machine from the engine at will, and the riders can coast down any gradient like on ordinary "free-wheel" bicycles. The whole arrangement is operated by hand in a simple manner, and can be applied at any moment without jerk or shock. The power of the motor is conveyed to the countershaft by means of a chain, and thence by two chains to the single rear wheel, one or the other of the two speeds being thrown into action by means of the double clutch which is actuated by a lever at the left-hand side of the rider. Renold solid block Silent chains are used throughout. An average speed of twenty miles an hour can, the makers claim, be maintained if required on a whole day's journey in give and take country; while a much greater speed is obtainable for racing purposes. Steering is controlled by means of a lever operating the two front or steering wheels, which are coupled together and so arranged that they incline at varying and correct angles according to the circumference of the radius of the turn. The steering by this means is stated to be rendered so safe that it is possible to negotiate sharp turns at high speed with perfect

ease and safety. The tendency of the engine is to drive the machine in a perfectly straight line, it exhibiting no inclination to deviate from its course unless actuated by the steering lever. The wheels are 28 in. in diameter and shod with $2\frac{1}{2}$ in. pneumatic tires. Two powerful band brakes are fitted, which enable the driver to bring the machine to a standstill in a very short distance. Two drums are carried on the driving wheel axle, the straps round which are applied by a foot pedal and a lever set on the left-hand side of the seat respectively. The reservoirs for petrol, lubricating oil, and water have a capacity sufficient for about 150 miles. The weight of the machine complete, and fully equipped for a long run, is about 4 cwts. One of the tandems was finished in black and gold enamel and the other in aluminium enamel. Both were practically alike, except that one was fitted with a $3\frac{1}{2}$ De Dion and the other with a 5 h.p. Aster engine. We understand that, in addition to complete machines, the company are selling all the parts of the vehicle, including the carburettor, pump, and countershaft, a fact which will be of value to agents and makers.

The Hudd Syndicate, of 27, Fumival Street, London, E.C., had a very interesting display of their specialities. Of these we have recently described in detail the "Hudd" sparking plug, the "Hudd" starting valve, and the "Hudd" two-cylinder balanced motor, so that it is unnecessary to refer to them at length on the present occasion. Fig. 37 gives a view of the "Hudd" carburettor, which may be described as a constant level spray carburettor without a float feed. Its great feature is that at all speeds one uniform mixture is obtained, the eddy currents existing in carburettors with projecting jets being absent. The constant level petrol vessel A receives through the hole C a small quantity of petrol at each suction stroke of the engine, by means of a small pump, or oscillating cock, any excess being carried away and back to the petrol tank by the pipe B. On the suction stroke of the engine, air, previously warmed by the exhaust, enters the carburettor through the opening G, and, passing through the cylinder of wire gauze H, is freed from dust, and, in the constricted passage above, meets the jet of petrol issuing from the small hole D, which communicates with the petrol vessel A. The explosive mixture thus formed passes by the valve E, and through the opening F, to the cylinder or cylinders of the engines. The valve E, by

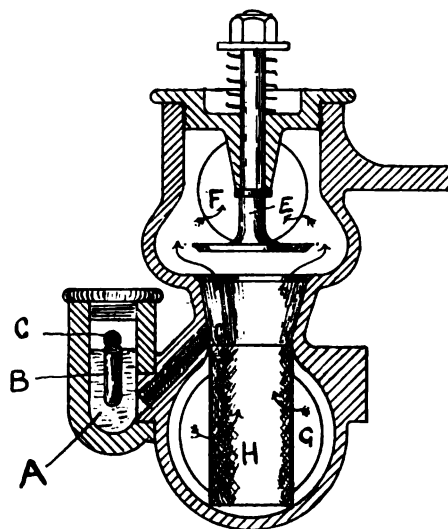


FIG. 37.—THE "HUDD" CARBURETTOR.

throttling, determines the amount of mixture allowed to enter the cylinders, and may be directly actuated to control the speeds or may be controlled by a governor. The petrol, being always heated, is claimed to be perfectly carburetted even if it is somewhat stale. Another new article is the "Hudd" compression

cock (Fig. 39). It is claimed to have the great advantage of getting rid of the annoyance of obtaining explosions with the cock open, but failing to do so when closed. In other words, the mixture is exactly the same whether the compression cock be open or closed. The nozzle carries a steel cage containing a steel ball, which rests nominally on the nozzle itself, and prevents air entering the cylinder on the suction stroke. On the compression stroke, however, relief is given as usual. The cock may be fitted to motor-tricycles, quads, and bicycles, and will, it is claimed, prevent a lot of the trouble experienced when using the ordinary compression cock. It is

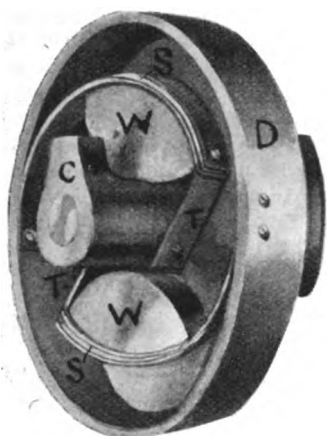


FIG. 38.—THE "HUDD" IGNITION GEAR.

supplied screwed to De Dion thread. Finally we may refer to the "Hudd" ignition gear (Fig. 38). It is a well-known fact that the speed of the petrol engine can be increased by making the point of ignition earlier. The new gear automatically adjusts the point of ignition for the highest efficiency, and consists essentially of a centrifugal governor of a special character. Two weights, W.W., are supported on curved flat springs S; these springs are the great feature of the gear, for they are thin at the ends where they are supported by the drum D, and thick near the weights. In small sizes, the springs are made up of several plates, as shown. The movement of the weights is communicated to the cam C, determining the spark by two steel tapes T. While the motor increases its speed, the springs, bending for the most part near the drum, gradually change their curvature to that of the drum, so that the effective length of the spring shortens, and at the same time its thickness increases. The effect is such that the cam moves at such a rate that the engine is perfectly timed for ignition at all speeds.



FIG. 39.—THE "HUDD" COMPRESSION COCK.

Boldly placed in the Arcade, the Sirdar Rubber Company, Ltd., 36, Duke Street, E.C., took advantage of the four sides of their square stand to show their solid and pneumatic rubber tires in sections, so that motorists could readily understand the construction of their tires. Sections of two sizes of the Irel Buffer tire (Fig. 40) for motor-cars were exhibited. In this the rubber is

compressed, and looking on the top of the tire when in position on a wheel the rubber out of the rim is as wide as the felloe and half as wide again as an ordinary rubber for a felloe of the same size. The rubber does not overhang the edges of the rim, so that it stands no risk of being cut by them. None of the deep cushion of rubber is interrupted by the edges of the rim and as all the rubber below the rim supports the wearing surface durability with comfort is claimed as a leading feature. The rubber out of the rim is narrower than the mouth of the rim, so that the weight of the car alone is sufficient to force it into the mouth, thus obviating all fear of creeping, and increasing the security in proportion to the strain. The tires are made in all sizes for motor-vehicles generally. Treads and covers for pneumatic tires were also exhibited.

The "Williams" rubber tires were shown by Mr. R. Stanley Seyler, who has temporary offices at 17-18, Great Pulteney Street, Piccadilly, W. These tires are constructed on a new principle, and while not being pneumatic are more resilient than solids. They can be affixed, detached and adjusted very easily in a short time. The outer tube has a hollow channel with a lining of

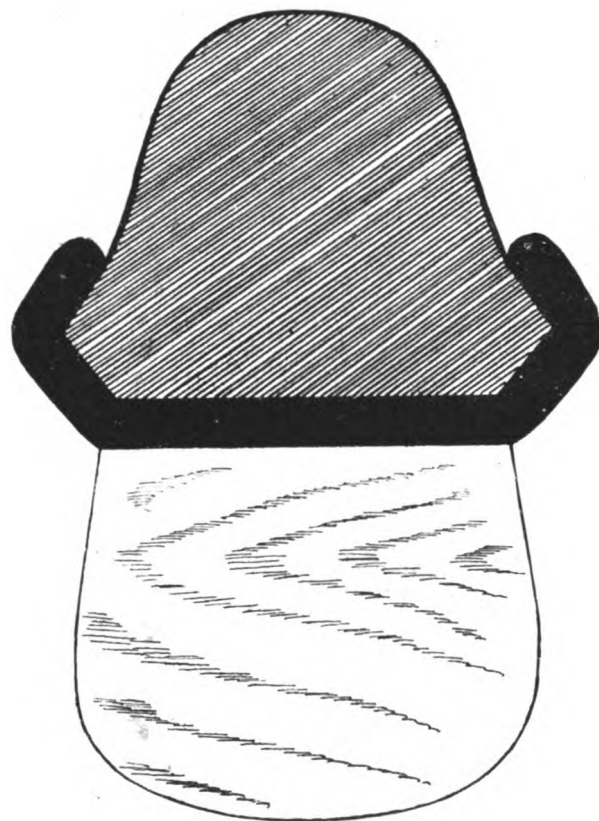


FIG. 40.—THE SIRDAR CO.'S BUFFER TIRE.

canvas, surrounding which are cords imbedded in the rubber, securely sewn to an open mesh into which the rubber is still further forced. By this means a compact body of great strength and elasticity is obtained while the lengthening of the tire is prevented. At the same time the tire lends itself freely to compression. The cord which encircles the tire and actually forms part of it is intended to resist the side strain, and experiments have shown that when the tire is on the wheel with the full weight of the car and load on it, five of these coils are contained in the portion resting on the ground at one time. A side pressure of three tons would be necessary to break them, a strain they are scarcely ever likely to be expected to bear. The core fills up the centre channel from top to bottom, but leaves a vacant space on each side, and its circumference or length is restrained by a patent process of knotted cords that are unstretchable and freely adjust themselves to the side expansion. In connection with the tire is employed a band of metal perforated with indentations at short regular intervals throughout its length. Its two edges are inserted into two split zinc polished tubes which

present a rounded surface of non-injurious metal to the inner wall of the tire. These zinc tubes have on the under surface recesses at regular intervals alternating with the indentations in the band. When the band with the tubes is drawn closely round the wheel the substance is pressed into the cavities which thus form a series of grips at regular intervals round the whole length of the tire, rendering it immovable. The band is fastened by a key, by means of which the tire can be adjusted or removed. The novelty of the Williams' tire attracted many people to the Gallery.

The Monarch Motor Company, of Manor Road, Teddington, and 39, Eastcheap, London, E.C., confined their exhibit to a 12 ft. launch fitted with a 1 h.p. Monarch petrol motor. The motor is of the two-cycle type, and is fitted with an improved magneto generator, which gives a constant current to the ignition. Connected with the engine is a two-speed gear by means of which the launch can be driven at any speed from two to seven miles per hour. In addition to launches we hear that the Monarch Company are about to enter the motor-car industry.

The feature of the exhibit of M. Cormery, Baugé (M. and L.), France, was two wall diagrams illustrating the Cormery car, and which showed the vehicle to be constructed with four wheels arranged one centrally at each end, and a pair at the middle, one at each side. The end wheels are both employed for steering purposes. A drawing showing the Cormery two-cycle petrol engine, recently described and illustrated in these columns, was also to be seen.

Water-cooled heads for the De Dion motor were exhibited among the accessories on the stand of Messrs. Gianoli and Lacoste, 26, Boulevard Magenta, Paris. Here were to be seen the well-known Leclanché batteries, and also some good types of induction coils, including some in which the contacts are covered in to prevent the wet getting to them. Among other novelties we noticed a contact breaker for four-cylinder motors, the coils of which were assembled in a neat case. A similar device is also constructed for two-cylinder motors. A very ingenious water circulating pump was shown, in which a bronze circular block is mounted eccentrically on a spindle, and rotates in the water space, which is divided by a reciprocating shutter located between the inlet and outlet, so that the water has no choice but to pass forward to the cooling apparatus in due course. A small carburettor for motor-cycles, in which the petrol is admitted through a needle valve opened by the suction of the piston, also attracted some attention. On its way the spirit passes through metal gauze discs, and over a corrugated cone. Air is admitted above and below these parts, and means are provided for passing some of the exhaust gases through, so as to warm the apparatus.

The Sinclair Motor-Car Company, Sinclair Road, Kensington, W., had an interesting stand, where a couple of cars in various stages of completion were shown. The smallest is fitted with a 5 h.p. two-cylinder horizontal motor with the heads arranged forward, and water-cooled. The power is transmitted for ordinary driving to the balance geared axle through spur gearing adapted to give two speeds. The motor and gearing are located just in front of the rear axle, and the carriage work is so arranged as to leave the parts readily accessible. A special feature consists in employing two sets of springs in front, so that the body is mounted quite independently of the machinery. The 10 h.p. car has a two-cylinder vertical motor arranged in front, and transmits its power through a flexible shaft to a variable gear, providing two speeds either forward or backward, a Champion friction clutch being employed. The differential gear axle is provided with a bevel wheel, with which a bevel pinion at the back of the variable-speed gear engages. This vehicle is provided with roller bearings, and also with the separate body suspension above referred to. We hope to deal with the Clift cars more fully in a later issue. Other exhibits on the stand included the Sinclair ignition cells, the Diamond centrifugal water-circulating pump, which, running at a speed of 1,300 revolutions per minute, will deliver 600 gallons of water per hour.

Mr. F. C. Blake, of Ravenscourt Works, Hammersmith, who is well known in the automobile world for his electric ignition

apparatus, showed his largely-used induction coils for the ignition of the charge in motors. They are fitted with large platinum-iridium alloy contacts for continuous and heavy work, and the secondary winding is protected from damp and mechanical injury by a strong light covering from end to end. The coils give a very bright flaming spark, and are largely used by owners of motor-cars. Dry batteries, small accumulators, sparking plugs of various types, exhaust silencers, dynamo and switchboard for charging accumulators, etc., were shown. Of the petroleum-spirit motors made by Mr. Blake, a two-cylinder horizontal engine giving $3\frac{1}{2}$ h.p. was shown. It is fitted with water jacket, electrical ignition, and the cranks are set so that there is an impulse every revolution, and, by carefully balancing, vibration is reduced to a minimum; the normal speed ranges from 700 to 800 revolutions per minute. Special attention has been given to the question of lubrication, the cranks working in an oil-containing chamber. Of special interest to motorists is the new rubber insulated wire for tricycles and quadricycles. The wire with its covering is exceedingly flexible, and, it is claimed, absolutely impervious to wet and other causes of short-circuiting. A novelty in carburettors, which is said to possess all the good points of a jet carburettor, but without float feed, was also shown by Mr. Blake. As much interest is just now being taken in carburettors, we hope to refer to the new device at length in a later issue. On a corner of Mr. Blake's stand, the Taipō Accumulator Company, Ltd., of 30, Church Street, Chelsea, S.W., exhibited some of their ignition accumulators, the claims for which are efficiency, lightness, compactness, and indestructibility, the mechanical construction of the cell being claimed to be such that it is impossible for the active material to become disintegrated.

Le Carbone (late Lacombe and Cie.), of Levallois-Perret, Paris, and 36, Lime Street, London, E.C., had an interesting display of electric accessories for use in connection with motor-carriages. Chief among them may be mentioned the "Sans-pareil" dry battery for use with the ignition apparatus of petroleum-spirit motors on carriages, yachts, tricycles, bicycles, etc. It is claimed for these cells that they give the maximum output for the minimum of weight and dimensions. The cells offered for tricycles, with suitable coils, will last between 300 and 500 working hours, according to the conditions in which they are employed. Le Carbone Company also makes a speciality of carbon brushes, and exhibited a new French coil. The concern is now making dry batteries for use on large cars done up in neat oak boxes. These specialities have lately been reduced in price, but the original standard of excellence has been maintained.

Lubricants for motor-cars formed a great feature of the display made by Messrs. Stern Bros., 57, Gracechurch Street, E.C. Among the specialities shown were Sternoline lubricant for the bearings, Fram lubricant for the axles, Sternoline motor-car oil, Sternoline cylinder oil, Sternoline rust preventative, Sternoline elastic paste for gearing, cog wheels, chains, etc. This latter must be applied in a liquid state to chains and cogs. It cools rapidly, and forms a strong, smooth surface which neither comes off nor blisters. The makers claim that the use of this elastic paste diminishes wear and avoids all direct friction. Dust will not mix with it, so that the cogs are kept perfectly clean, and although quite dry in appearance they are well lubricated. As the paste is entirely free from acids and all impurities, its elasticity is easily preserved and it will not harden. Motorists generally seem to be giving much attention to this speciality. Another speciality at this stand was Stern's adhesive belting bricks, which are made in a very compact and handy form, and are very clean. They prevent the belts from slipping or coming off the pulleys, keeping them pliable and counteracting the looseness produced by stretching.

Samples of genuine Michelin pneumatic tires, ranging in size from 65 to 120 mm., were shown at the stand of the Clipper Pneumatic Tire Company, 164, Clerkenwell Road, E.C. These tires are so well known by reason of the popularity they have attained in France, that it remains but to be said that the Clipper Company has secured the sole right to import and sell them under the terms of their licence under the Bartlett patents. A convenient price list has been prepared showing the sizes required

for cars, voitures, and motor-cycles of different weights, and the full range of accessories for motor tires on the stand included repair outfit, foot pump, motor jacks to lift up to 3,000lbs, inflator tubing, etc.

Although the Gare Patent Cushion Tire Company, of 15, St. Vincent Street, E., supply their well-known tires for every conceivable kind of vehicle, they have recently turned their attention more particularly to those for motor-cars, and with good results. Those which we inspected were light, serviceable, and neat. The rim of the wheel is of the steel channel order. Inside the channel is a rubber pad, and round this runs a D-shaped tube. Over this, as an outer covering, is an endless steel band, which forms the wearing surface. By this process of construction weight is distributed over a very large surface of the rubber—almost half the circumference of the wheel, in fact—and even under a heavy load jar and vibration are greatly reduced. The Gare Company have also a patent wood pavement which possesses many advantages which should commend it to motor-car builders for use in showrooms and workshops. The blocks are laid in sections bound together by iron rods, which secure a larger distribution of weight and prevent absorption. Lifting by expansion is impossible, and sections can be reversed when worn on one side.

The Doe Portable Electric Light and Power Company, Ltd., of 122, Cannon Street, E.C., and Ravenscourt Square, Hammersmith, were in evidence with primary batteries for ignition purposes, for lighting, or for charging accumulators, specially designed for motor-cars and cycles. Durability and facility in recharging, for which the "Doe" electrolyte and zincs are used, are two strong points in their favour. The simple and rapid process of charging accumulators from the Doe primary battery was practically demonstrated. A "BY" four-cell battery for ignition, charging accumulators, or lighting two lamps, is remarkable because of the small dimensions into which these many and combined possibilities are packed. The measurements, which are only 4½ in. by 4½ by 6½ in., render it particularly serviceable to the motorist, for whom it has been designed. The company had also on view a good selection of electrical fittings, which included voltmeters, ammeters, and induction coils, the latter producing sparks of any length up to 8 in.

On entering the Minor Hall the eye was caught by an artistic display of posters; needless to say they were French. How different would be many an English landscape and hoarding—so woefully disfigured by the ubiquitous bill-poster—if he would but take a lesson from his brother across the Channel. It was to Madame Lockert, the talented editress of *Le Chauffeur*, the oldest technical journal in France, which has its home at 26, Place Dauphine, Paris, that we were indebted for this passing glimpse of the French billposter's art. In the Gallery was a still larger display, which, though somewhat skyed, attracted a constant crowd.

Beneath these pleasing specimens of their country's art foregathered a small colony of French exhibitors; first amongst these was Madame Lockert, who represents her own journal, *Le Chauffeur*, the recognised organ of the motorist in France. Madame Lockert is a large-hearted woman, and kept a motherly eye on certain other exhibits in the colony.

A temperature regulator, for industrial and domestic purposes, was one of these fortunates. The appliance is the simple but ingenious invention of M. G. Dorain, of 114, Boulevard de Belleville, Paris, and by its use it is possible to ascertain the exact temperature registered at any moment of day or night, the instrument being a self-recorder.

Here, too, was to be obtained the "Annuaire Général de l'Automobile," published by MM. Thevin and Houry, a most useful guide to all who would have a world-wide knowledge of motor-car development.

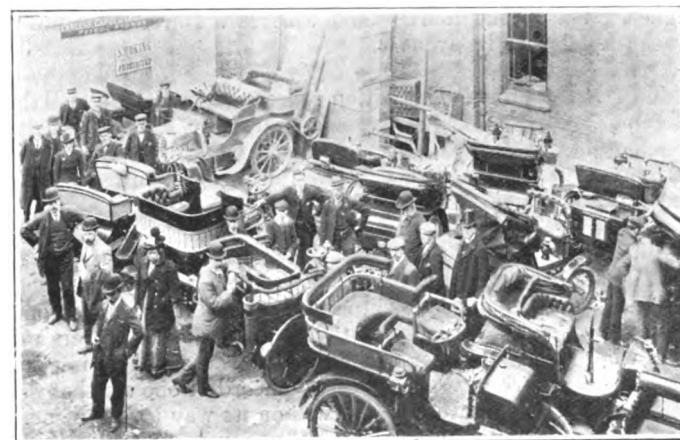
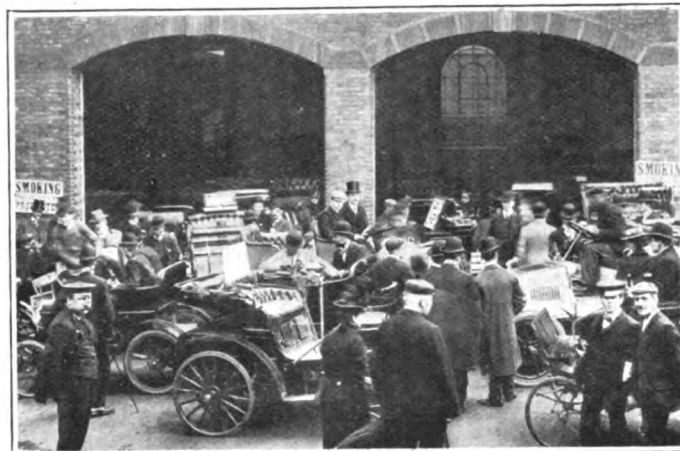
Artistic designs for motor-cars by M. Emile Gorey, of 1, Rue Christine, Paris, were also on view. Builders in search of style and finish should certainly look into the productions of M. Gorey, who has a large connection among automobile constructors in France.

(To be continued.)

EXHIBITION ECHOES.

THE Right Hon. A. J. Balfour has become such an ardent automobilist that it was only natural to expect that he would visit the Exhibition. This he did on Friday last week, accompanied by his brother, Mr. Gerald Balfour, and his niece, Miss Balfour. The party devoted great attention to the various displays, and enjoyed several runs round the arena.

ENGLISH ladies are not yet, perhaps, as keenly interested in automobiles as are their sisters across the Channel, but the Exhibition held during the past week has shown conclusively that the subject is one of increasing popularity with the sex. It was only necessary to listen to the talk of the ladies to gather that many of them had more than a little technical knowledge as



"THE PADDOCK" AT THE EXHIBITION, LOOKING RIGHT AND LEFT.
Photos by [Argent Arcier].

to the merits or disadvantages of particular types, while inquiry showed that a good proportion of the sales effected had been to feminine buyers. Indeed, so well alive were some of the firms exhibiting to the possibilities of ladies' patronage, that they employed clever and expert lady-drivers to show their cars in motion in the arena, and a Singer motor-bicycle was constantly ridden by a lady.

AMONG the many interested spectators at the Show was the Earl of Shrewsbury and Talbot, who was daily seen in company with his many friends pointing out the various makes of cars to them and making quite a number of converts to automobilism.

ONE of the items of interest on the last day was the arrival of Mr. House and party on the new "Lifu" light steam car. The vehicle came in quite dusty after a long journey up from Poole, the successful trip being the more noteworthy inasmuch as it was the car's first appearance on the road.

AMONG the many visitors to the Show on Saturday last were Mr. Frank H. Butler and his daughter, Miss Vera Butler, both looking well on their return from an automobile tour through the Alps on a 5 h.p. Renault voiturette. They drove to the Exhibition on the same little car, which, with its novel hood, came in for a large amount of attention.

LIVERPOOL CITY COUNCIL was represented at the Hall last week by a deputation consisting of the chairman of the Health Committee and the City Engineer.

THE wealthy people who have been accustomed to go to a carriage builder's and select a brougham or other vehicle for delivery within a week cannot understand why they should be told they may have to wait three months for an automobile. It is, however, a situation that will have to be composedly regarded by many a coming motorist during the next few years. The demand has come along with all the strength of a boom, and agents have not prepared for such a rush. Manufacturers, too, are only just beginning to realise the position of affairs, and while their selling agents can dispose of scores of cars they can only turn out twos and threes. Hence the delay that will arise before many orders lately given can be executed. During the Exhibition many purchasers of voiturettes were heard complaining that they could not get the particular cars they fancied before the end of June—a delay that seems long and dreary when it separates a man of money from pleasures that he thought were immediately obtainable for prompt cash. No, not even ready money can always secure a motor-car, and King Midas must sometimes wait for the gratification of his desires!

AFTER the Show, Mr. H. W. Duret rode his "Singer" motor bicycle down to Coventry. The speed was up to the legal limit all the way, and the only attention the little machine received was a fresh supply of petrol and lubricating oil at half-distance. This is the fourth time that Mr. Duret has ridden between London and Coventry.

THE visitors to the Exhibition represented practically all the professions. The law was represented by Mr. Roger Wallace, K.C., and Mr. Astbury, K.C., the latter being the gentleman who represented the Daimler Company in their action against the British Motor Traction Company.

BRISK business was done at the Show, and the number of new cars on order must be very considerable; while there were many, no doubt, among the visitors who will ultimately become purchasers after further consideration. Those manufacturers and agents who had cars to offer for immediate delivery were in some cases able to command premiums. We heard of one car that was sold about 7 p.m. on Saturday and was on its way to its owner's estate in the country at 9 p.m. the same evening. The Star Motor Company also made what may be termed a record, selling a car within ten minutes of the close of the Exhibition.

MANY of those whose duties kept them in proximity to the arena will no doubt be able to amuse their friends with droll stories for a long time to come. The conversation of those who had tasted of the joys of the automobile for the first time being of a totally different character to those who are, as it were, steeped in petrol and petrol talk. Some amusement was caused by the query of one gentleman, who, after enjoying a run on a Locomobile, somewhat surprised the driver by asking, "What sort of steam do you use?" We believe—although we cannot vouch for it—the answer was to the effect that the steam used was the same as that found in kettles!

THERE were times when so much French was heard in the Exhibition, that one might imagine they were at the Grand Palais, in Paris, instead of the Agricultural Hall, Islington. The French motor world was altogether well represented, the visitors including Madame Lockert, M. Turgan, M. Crouan (whose big car, by the way, came up by road from Newhaven), M. Augé, and M. Serpollet. The latter arrived towards the end of the

week and was delighted to be able to drive his racing steam car round the arena.

MR. LETTS, of the Locomobile Company of America, writes us that during the Exhibition they had a two-seated and a single-seated carriage running in the arena. During the week they gave trial runs to over 7,000 people, and Ginder, on his two-seated car, travelled no less than 374 miles around the arena in the six days, the distance being registered on a cyclometer.

WE have received the following with the request that we should publish it in the *Journal*, which we have pleasure in doing:—

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—With the close of the Exhibition to-day, we, the undersigned exhibitors and attendants, desire to express through the medium of your *Journal* our appreciation of the able manner in which Mr. B. H. Joy and his assistants, Messrs. Martin and Braddock, have carried out their duties in connection with the arena. Thanks to their untiring energy, we have been able to demonstrate our carriages with very little delay, while by their invariable courtesy our work in both arena and "paddock" has been rendered as pleasant as possible.

Yours truly,

A. H. DEAVILLE ALTREE (City and Suburban Electric Carriage Co.).	TURGAN AND FOY.
H. HOLROYD SMITH.	FR. FRENTZEL.
HUMBER LTD., per J. B.	CARL OPPERMANN.
ED. E. LEHWESS.	JOHN H. GRETTON.
T. CLARKSON (for Clarkson and Capel S.C.S., Ltd.).	JOHN J. LEONARD.
PERCY RICHARDSON (Daimler Motor Co., Ltd.).	ALFD. BURGESS (the Motor Manufacturing Co., Ltd.).
DE DION BOUTON, Ltd., per H. K. E.	J. ERNEST HUTTON.
W. LETTS (Locomobile Co. of America).	R. H. GRIFFIN (B.B., Ltd.).
A. MCCORMACK (Swift Motor Co.).	D. M. WEIGEL.
MANN AND OVERTON.	G. A. NUSSBAUM.
J. T. SCARBOROUGH (Automobile Supply Co., Birmingham).	CROUAN ET CIE. (G. Marais, Gen. Manager).
ERNEST M. C. INSTONE (Motor Manufacturing Co., Ltd.).	H. T. EDWARDS (Roadway Autocar Co.).
NEW ORLEANS MOTOR CO., LTD. (W. D. Astell).	UNITED MOTOR INDUSTRIES, LTD. (E. A. Jennings).
C. FRISWELL.	THE MOTOR POWER CO., LTD. (A. E. Perman).
CHAS. MIDGLEY (British Power Traction and Lighting Co.)	INTERNATIONAL MOTOR CAR CO., LTD. (J. O. Seyd, Manager).
	H. HEWETSON.
	JOHN VAN TOLL.
	H. G. BURFORD (for Geo. F. Milnes and Co., Ltd.).
	D. FARMAN.

As we go to press the following letter from Mr. Joy comes to hand:—

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—On behalf of myself and my assistants at the Motor-car Show held during last week at Islington, I beg to be allowed through the medium of your columns to thank one and all of the various manufacturers very heartily for their gracious letter which appears above in reference to our services, and to assure them that such an acknowledgment of any small services we may have been able to render them in the course of our duties is a source of very great gratification to us. Our task was rendered not only possible but pleasant by their willing efforts to carry out the instructions which it was our duty to enforce.

Yours faithfully,

BASIL H. JOY.

ONE of the features of the Newport streets during the Monmouth Boroughs Election was Mr. Charles D. Phillips' motor-car which is capable of carrying fourteen people as well as the driver. It was out and did good work in all the wards carrying the voters on polling day.

CONTINENTAL NOTES.

BY "AUTOMAN."

AN amusing story reaches me from an eye-witness in the sunny South, and it explains why a certain three-wheeled horseless vehicle did not take part in the Nice Races. There were other brakes besides those of which Mr. Mark Mayhew speaks, which were not powerful enough for the work. In the case of the three-wheeler, the brakes were suffering from a very bad attack of slip. The machine was coming round a bad corner meeting an unexpected tram, and an open carriage with one occupant; there was no room to pass on either side, the pace was considerable, and the brakes refused to respond. Then came an undecided wobble, "Shall I go right or left," and then a heroic plunge in between the victoria and the tram. The space was too narrow even for a three-wheeler, and there was nothing for it but to shut your eyes and wait your luck. How it all happened my informant does not quite know, but in less time than it takes me to write it the automobilist was seated comfortably in the carriage, whose late occupant was twisted up over the remains of the motor, and strange to relate there were two three-wheel machines left, only one of them being horseless.

THERE is to be another Antwerp kilometre competition in the autumn, but this time the paved roads of Vieux Dieu will be abandoned for the smoother macadam of Heyst-op-den-Berg. I do not understand much Dutch or Flemish, but this name certainly sounds like "Haste-up-the-hill."

KING LEOPOLD'S love of the motor-car is not confined to the good roads of the Littoral. Bad as are the Belgian "paves," the royal car takes the King and Princess Clementine almost daily from the Palace of Laeken. Prince Albert, on the other hand, whilst waiting for his new car, which will not be delivered before the 1st of June, is busy perfecting himself in the use of his motor-tricycle.

THE Royal society, "Union Auto-Vélocé" of Belgium, under whose flag the Brussels Automobile Show is held, have decided to go one better and to organise for 1902 a much larger exhibition. They have also decided to hold a Whitsuntide tour, the route being through Libramont, Virton, the ruins of the Abbey of Orval, Florenville, Lacuisine, the castle of Bouillon, Paliseul, Libramont and back to Brussels.

THE latest idea from Paris is to furnish the police with very fast motor-cars with which to give chase to the delinquent who refuses to stop when called on to do so. The idea is comic indeed. Bobby on a bike was bad enough, but Mr. Peeler in goggles and a fur coat chasing a scorcher through the Bois de Boulogne and catching him up at the Porte de Suresnes, where he has to stop to get his petrol sheet initialled by the Octroi, is beyond description. On the question of scorching the A.C.F. has just decided to make an appeal to its members to moderate their speed, and above all to see that their mechanics drive prudently and at a reasonable speed.

THE dispute over the timing by chronometer of the kilometre race at Antwerp has prompted a Mr. Heirman to construct an automatic chronometer. A thin wire is stretched across the road at the start and also at the finish of the kilometre. The motor-car snaps the first as it passes it, and then by an ingenious mechanism starts the chronometer, which is stopped by the snapping of the second wire, and registers automatically the time occupied by the cars in doing the kilometre. The instrument has been thoroughly tested, and it is to be employed in the speed trials of the A.C.B. at Dieghem, on Sunday next, the 19th inst.

THE Austrian Count Carl Schonborn-Buckeim, who has just married Princess Theresa Dentici in Rome, went for his honeymoon in a 14 h.p. Benz, and amongst other feats climbed Vesuvius with his bride. The car took an hour and a-half to

reach the summit, over a bad road, and arrived safely, much to the astonishment of the Cook's tourist parties who had gone up by the funicular railway.

THE *Auto-Velo* is about to offer a Challenge Cup for light carriages, to be competed for annually. Each firm that wishes to compete must enter at least three cars, and the Cup will be awarded to the firm who has the best total average speed for the three cars. To be qualified to compete the cars must have at least two seats side by side, a free motor, and must weigh less than 12½ cwt. The race is to be 124 miles over an ideal racing road, nearly straight, and with only three turns and no villages on the way.

PANHARD AND LEVASSOR are beginning to deliver their 50 h.p. cars, some ten of which will take part in the Paris-Berlin race, driven by the best *chauffeurs* in the world—de Knyff, Charron, Girardot, Chauchard, Pinson, de Perigord, etc. The Baron de Crawhez, of Brussels, will also have one.

SERPOLLET in a 6 h.p. steam car has beaten Corlin on a 12 h.p. petrol car in a thirty-one mile race. Steam won by four minutes.

CHARRON, not satisfied with driving racing cars, has taken to riding racehorses; he made his first appearance last Wednesday week in the Paris-Delatre handicap. He is imitating the riding of Tod Sloan, but he did not score a win.

THE French Government have given their official sanction to the Paris-Bordeaux race, and already several big cars are making trial runs. Levegh and Charron are at work, but are keeping their secrets carefully; Girardot has not got his new car yet.

THE list of entries for the Paris-Bordeaux up to the present are as follows:—Charron representing the French Club, car entered by the German Club, car entered by the English Club, Levegh representing the French Club, car entered by the German Club, car entered by the English Club, Girardot representing the French Club, car entered by the German Club, car entered by the English Club. The above are the competitors for the Gordon Bennett Cup. There are twenty-one other entries which do not compete for the Cup, including six light cars and six motor-cycles. For the Paris-Berlin race there are already thirty-four entries, including Mr. C. Jarrott, Mr. S. F. Edge, and last, but not least, the Hon. C. S. Rolls.

ANOTHER fatal accident, in which a bicycle and an automobile collided, resulting in the instant death of the bicyclist in Paris, last Sunday, leads me to repeat the warning I gave in the *Journal* a few weeks ago to motor-car drivers meeting bicycles. There is no great danger in driving—both the motorist and the cycle rider rely on the powers of quickly swerving, and if by mischance they both happen to swerve in the same direction the result is almost sure to be death to the cyclist. Always slow up and keep well on your own side when you are meeting a cycle.

MICHELIN in his "Monday" in the *Auto-Velo* tells us to always keep pneumatic tires well inflated, if not, the outer covers will wear out quickly near the edges. Don't let the rim get rusty. The rust helps to rot the canvas and the rubber.

IT is quite uncertain yet whether the Mercedes will run in the Gordon Bennett Cup race or not. In the German preparatory trials last Sunday, Tisehbein won, and had a walk over. Scarisbrick on a 40 h.p. Benz threw up the sponge.

THE Justices of Tunbridge Wells last week inflicted a fine upon the driver of a motor-car, not for furious driving, but for failing to stay the speed of his car at the request of a gentleman out with a restive horse.

THE TRANSMISSION GEAR OF A MOTOR CARRIAGE.



A MEETING of the Cycle Engineers' Institute was held at the Exhibition at the Agricultural Hall, on Thursday last week, when Mr. Herbert Austin, of the Wolseley Company, read a paper on "The Transmission Gear of a Motor-Carriage." We have not space to print the whole of the paper, but give an extract therefrom below:—

"The motor itself has been generally considered the most important part of a self-propelled vehicle, but the idea is growing, and not without good reason, especially amongst makers, that the method of transmitting the power from the motor to the driving road wheels is perhaps even more important. This may be partly accounted for by the fact that the motor itself had been brought to a high state of perfection as a fixed engine, whereas the driving gear of motor-cars was, until a year or two ago, very little understood. It would appear to many at first sight, no doubt, a very simple problem to design an efficient means of conveying the power from the motor to the road wheels by utilising one of the many well-known forms employed in ordinary practice, but it is only after a year or two's experience that makers and users begin to appreciate the many drawbacks there are attached to the use of any of the systems at present employed. Each and every system has its good and bad points. It does not at present appear possible to obtain a system which embodies all the good points, and which has none of the bad ones, and one gets bewildered as to what good points to make use of and what bad points to put up with. Perhaps it will be best to give first a brief summary of what I consider the essential features of a perfect system (I use the term in a qualifying sense only) and then examine the various leading systems and see how far they comply with the requirements set forth.

"The following list of conditions must not be considered as arranged arbitrarily in their order of importance, as that is to some extent a matter of personal choice.

"(1) *Efficiency*.—By efficiency, I mean economy in consumption of power; or, in other words, the loss which results in conveying the power from one point to another. It must be obvious to anyone that (unless there is very good reason for it) it is folly cutting down in weight the vital parts of the rest of the carriage to make it light and easy to force along, in order to use an inefficient system of transmission which needs a much larger and heavier motor than would otherwise be the case to overcome the heavy loss which such a system may involve. I have placed this feature first, because everything on a motor-carriage has to be cut down to a very narrow margin of safety, dimensions being largely gathered from experience of what will only just take the strains each part has to stand, any allowance as a factor of safety being practically nil. Therefore, a perfect system should consume the very least amount of power possible in order that as much margin as practicable may be allowed in the strength of all vital parts, and not necessitate a larger motor or the use of more motive power than is really required for the work to be done at the road wheels.

"(2) *Adaptability*.—I mean its use without in any way detracting from or interfering with the other necessary adjuncts of a perfect road carriage. It is only reasonable to suppose that one might be very much disinclined to use what might otherwise be a very good gear, if it interfered very much with the comfort of the passengers or appearance of the car, or necessitated the placing of the motor and other parts in such positions as would prevent their being easily got at for examination and repairs.

"(3) *Simplicity*.—This feature is one which will appeal largely to the non-mechanical users of motor-cars, and even a mechanic's interest in an intricate and complicated piece of mechanism soon wanes when he finds out that each extra part is only so much more trouble, annoyance, and expense. It is an essential feature, which may, however, be easily carried to a point where it becomes a disadvantage, and is more to be considered in combination with other desirable features than possibly any other. Nothing is, for instance, simpler than having just one direct speed on to the driving wheels, but this is only possible with an electric or steam driven car, and is quite out of the question on a carriage driven by any internal combustion motor at present known. Simplicity no doubt means economy in first cost—that is, if it does not require a more expensive motor and adjuncts—and so will always be an important factor in cheap cars.

"(4) *Lightness*.—As pointed out in feature No. 1, lightness is a *sine qua non* of each and every part of a car, so that it must be carefully considered in deciding on what system to adopt. It will, no doubt, be more favoured by those wanting a very light car, than those who would be satisfied with a little more weight, and perhaps less expense and greater durability. To obtain the best results in this direction, aluminium must be used wherever practicable, and as this metal is still dear, and difficult to manipulate, it means some sacrifice on the score of cheapness, and consequently it cannot be adopted on low-priced cars.

"(5) *Durability*.—This is an increasingly important feature of every part of a car. A few years back, when the present automobile movement was in its infancy, no one was much concerned as to how long a car would last, but now that the first flush is over, users are becoming aware of the fact that what may be a cheap car in first cost may be a very dear one before it has run many thousands of miles. It does not follow that to be durable a gear must be very simple, although this is a generally accepted axiom, but its chief hope of a long existence, I think is to be looked for in the action by which the speed change operates

the material of which the various parts are made, and the way in which it is protected from the dirt and dust.

"(6) *Manipulation*.—This feature may be looked at in two ways. It may be considered purely as to the amount of effort or care required to operate the speed changes, or as to the general handiness in relation to repairs in out-of-the-way places, and attention and care in general.

"(7) *Cheapness*.—I have placed this feature last, because I mean by cheapness the first cost; its ultimate cost or cheapness in working coming, I consider, under the heading of durability. Looked at from purely a manufacturer's standpoint this feature would, no doubt, be placed much earlier in the list; and as years go on and competition becomes keener, it will assuredly be an important point, but at present it seems to me that many of the other features should receive preferential consideration, especially from a user's standpoint."

Mr. Austin then described at length the Panhard, Benz, Peugeot, De Dietrich, Renault, De Dion, and Wolseley types of cars, and concluded with a reference to the Hall hydraulic gear. A discussion ensued, in which Messrs. Craig, Boulton, Hall Bramley, and Staner took part. Votes of thanks were accorded to Mr. Austin for his interesting paper, and to Mr. C. Cordingley for the use of the room and for the supply of admission tickets to the Exhibition.

SELF-PROPELLED LORRY FOR MILITARY PURPOSES.



WITH a view to obtaining the best self-propelled lorry for military purposes, the Secretary of State for War offers three prizes—a first prize of £500, a second prize of £250, and a third prize of £100—for the three self-propelled lorries which shall be adjudged, after a series of trials carried out by the War Office Committee on Mechanical Transport, to be best suited to military requirements.

The trials will commence on Wednesday, 4th December, 1901, and will extend over a considerable period, so that the vehicles may be thoroughly tested. The exact nature of the trials will be determined upon by the above Committee. A general scheme will be drawn up and issued as soon as possible to all intending competitors, but the Committee reserve to themselves full powers to carry out any additional tests they may deem necessary, whether included in the general programme or not. The Committee reserve to themselves the power of rejecting any vehicle which does not comply with the requirements published herewith, or of suspending, at any stage, the trials of any vehicle which in their opinion has proved itself unsuitable. The decision of the Committee as to the comparative merits of competing vehicles will be final. Firms or individuals who intend to enter for this competition must send in their names to the Secretary, Mechanical Transport Committee, War Office, Horse Guards, Whitehall, on or before 1st September, 1901.

No vehicle will be admitted to the trials unless a fully dimensioned set of drawings and a specification, giving complete details of the lorry and trailer exactly as submitted for trial, together with a statement of the purchase price of the lorry and trailer, have been lodged with the Secretary, Mechanical Transport Committee, before the 4th December, 1901, the date of the commencement of the trials. A firm or individual may enter more than one lorry, but the conditions must be complied with for each separate lorry entered. His Majesty's Government to have the right of purchasing after the trials any or all of the competing vehicles at the price stated by the competitor.

All designs and specifications lodged will be considered confidential. Those of the vehicles that may be purchased will be retained for the purposes of the Government, but without prejudice to patent rights. Those of vehicles not purchased will be returned to the competitors after the trials. Certain firms have already been asked to send in designs for a lorry for the consideration of the Committee, and some have already communicated with the Committee. It has, however, now been decided to institute an open competition.

STATEMENT OF REQUIREMENTS OF SELF-PROPELLED LORRY FOR MILITARY PURPOSES.

1. The lorry to be capable of being used on rough roads, and to a limited extent across country. To be able to go wherever a country cart can go, and to be capable of being driven through an opening 7 feet 6 inches wide.
2. Nett load to be 5 tons, of which 3 tons must be carried on the lorry itself and 2 tons on a trailer; these weights are exclusive of fuel and water, all of which must be carried on the lorry.
3. Total platform area not to be less than 15 square feet for each ton of nett load.
4. The lorry platform and that of trailer to be fitted with removable sides and ends about 2 feet high.
5. The top of the lorry platform, when the lorry is ready for loading, not to be more than 4 feet 3 inches from the ground level, and that of the trailer not more than 4 feet.
6. The lorry, carrying its full nett load of 3 tons, and drawing a trailer loaded with two tons, to be capable—(1) Of a speed of 8 miles per hour on fairly level roads in fair condition; (2) of a mean speed of at least 5 miles per hour on average roads, up and down hill; (3) of taking its full load without assistance on an average road, up a slope of 1 in 8.
7. The weights should be so distributed that the lorry should always be under control on slopes up to 1 in 8, whether loaded or empty.

8. Proper arrangements to be made that no part of the machinery be liable to damage from mud or dust.

9. Any casings used must be easily removable.

10. In order to avoid damage to the lower portions of the machinery from touching the ground when going over rough country, or in the event of the wheels sinking into soft ground, all such portions must be strongly protected, and, except in the case of the driving gear, must not be less than 18 inches from the ground; the driving gear should be kept as high as possible.

11. The lorry to be capable of efficient control, and steering at all speeds and of reversing at low speeds, and of being worked and controlled by one man.

12. The lorry to be able to run for forty-eight hours without over-haul or cleaning.

13. The driving wheels not to be less than 4 feet 6 inches in diameter, nor less than 9 inches wide across the tires, which may be fitted with plain diagonal road-strips.

14. No restriction is placed on nature of fuel or class of engine, steam, internal combustion or otherwise, except that oils under 75 degrees Fahr. flash point (Abel's close test) must not be employed. In the case of steam engines, an alternative arrangement for burning solid or oil fuel is desirable.

15. In the case of steam engines the construction of the boiler must be such as will comply with the requirements of the Manchester Steam Users' Association.

16. No limit is placed on tare weight, but the total weight will be taken into consideration as stated in para. (c) below.

NOTE.—In considering the merits of the competing vehicles, special importance will be paid to the following points:—(a) Prime cost having due regard to efficiency. (b) Distance that can be travelled by the vehicle when fully loaded with 5 tons, with the fuel and water carried on the lorry (great importance will be given to this point). (c) Economy in weight. (d) Durability. (e) Accessibility of all parts. (f) Simplicity of design. (g) Ease of manipulation. (h) Absence of noise, vibration, and smoke.

FITTING UP A VOITURETTE.

AT Brompton County Court, on Friday last week, before Judge Stonor, Mr. Emil Adam Merkel, managing clerk to a firm of solicitors, and living at Catford, brought an action against the Metropolitan Motor Manufacturing Company, Limited, of Fulham, S.W., the claim being for the return of a motor-voiturette body, two new De Dion engines, four new motor-car tires, etc., said to be wrongfully detained by the defendants, or, in the alternative, the plaintiff claimed £49 as the value of the articles, and £1 as damages in respect of their detention. The defendants counter-claimed for £80 for work and labour done and goods supplied. Mr. E. M. Schiller, counsel, appeared for the plaintiff, and Mr. Vaughan Williams, counsel, for the defendants. Mr. Schiller explained that the plaintiff was connected with a firm of solicitors who numbered amongst their clients the Dunlop Company and several motor-car manufacturing firms. In August last the plaintiff bought from Mr. Underwood, one of the directors of the defendant company, the body of a motor-voiturette, and made arrangements with the Graphic Cycle and Motor Company, Ltd., for putting engines to the body and completing the car, the price estimated for the work being between £35 and £40. Shortly afterwards Mr. A. E. Creese, who had been in business on his own account, but was then manager and engineer to the defendant company, suggested to the plaintiff that his people would do the work at a lower figure. Subsequently Mr. Creese, after he had consulted his directors, arranged to complete the motor-car for £25 or £30. The body of the car was accordingly removed from the Graphic premises to the defendant's shop. In March last the plaintiff got a letter from Mr. Underwood, of the defendant firm, intimating that the car was practically completed; that the battery and coil, which the plaintiff had agreed to supply, were required; that the defendant's account to that time amounted to £80; and that they would be glad to receive a cheque on account. It was subsequently ascertained that the excessive amount of the defendant's charges was due to some friction which there had been between the plaintiff and a Mr. Johnson of the defendant firm. The plaintiff bore out his counsel's opening statement. About a week before the account for £80 was sent in, he (plaintiff) met Mr. Underwood, and said, "You are not going to charge me much more than £25, I suppose?" Mr. Underwood then replied, "I don't think so, but if any more, it will only be a trifle." When he asked for an explanation about the excessive charges, Mr. Underwood and another gentleman connected with the defendant firm, named Jackson, shrugged their shoulders, and pointed to Mr. Johnson, who declined to discuss the matter with him. Mr. Creese stated the price for doing the work, not only when he was in business on his own account, but also after he became manager to the defendant firm, and after—as he said—having consulted his directors. It was not a fact that Mr. Creese merely agreed for his people to do the work "cheaply and reasonably."

Mr. Joseph Farmer, manager of the Graphic Cycle and Motor Works, stated that he heard Mr. Creese say that his people would do the work in question for £25 to £30. Witness also heard Mr. Underwood say that if the price were more than £25 it would be only a trifle more. Mr. Walter Farmer, brother to the last witness, and director of the Graphic Company, corroborated as to Mr. Underwood's remark about the defendant's charges being only a trifle over £25, if over at all.

For the defence, Mr. A. E. Creese stated that he was now works manager to the defendants, and engineer, but was formerly in business for himself in Clerkenwell. When the question arose, he said, about the cost of finishing Mr. Merkel's car, he gave an estimate as to the cost of labour only, because it was first proposed that Mr. Merkel should supply all the materials. Moreover, the proposal at first was that the car should have one engine only, and be driven by a belt, whereas it was now fitted with two engines and made to be driven by a chain. When talking about the price, after he had become connected with the defendant firm, witness did not say anything about the cost being £25 or £30; what he said was, "We shall only charge for cost of materials and labour." As a matter of fact, he, in his capacity of manager to the defendant company, had nothing whatever to do with the cost of materials.

The Judge: In your own business, I suppose, you would have to give the price of materials as well as labour? The Witness: Yes, I used to do so, and I always lost over it. In answer to further questions, Mr. Creese said that on behalf of the defendant company he did not give estimates. The car in question was different from the type of cars made by the defendant company, necessitating different drawings and castings, and it would have been impossible to estimate its cost.

The Judge: My present impression is that the agreement was in regard to the labour, and that the price which may have been mentioned was not intended to include materials. It appears that what materials the plaintiff supplied were used by the defendants on the car, and what materials the defendants supplied were, I think, to be charged at cost price. I think that £45 would be a fair price for the plaintiff to pay. Mr. Schiller said that if his Honour took such a view of the case, he would submit that as the contract was over £10, and there had been no proper agreement accepting the contract, the plaintiff was entitled to offer to pay for the actual work done, and demand his goods back. He maintained that his client was entitled to the body of the car and the materials which he had supplied, and on behalf of his client he would consent to the payment of £30 for the labour. The Judge: But then there is the labour which the defendants have expended upon your materials. They have done the work and are entitled to be paid for it.

Mr. Schiller: But we have reason to believe that the car, when finished, will not go. Ultimately his Honour decided that the case should stand over for a fortnight, and if it was found that the car had been properly made, the defendants would be entitled to a verdict for £45, on their delivering the car to the plaintiff. If there was no appeal by the plaintiff, the defendants would have no costs.

FURIOUS DRIVING CASES.

AT Lewes Petty Sessions Frederick H. Hadfield, of London, was summoned for driving a motor-car furiously at Falmer. P.C. Potter said that on the 27th of last month he saw defendant go past Housedean Park, Falmer, in the direction of Lewes, at a terrific pace, he should say between twenty-five and thirty miles an hour. Witness at once stepped into the road, held up his hand, and, as the car rushed past, called out for the defendant to stop. Defendant stopped the motor-car some fifty yards further on. Witness went back, and defendant said he was going from Newhaven to London, and had been misdirected at Lewes. He added that "perhaps he was going a bit fast, but he wanted to make up for the time he had lost." He took out his purse and offered witness a sovereign. Defendant also said he was off to America in two days, and the police would not be able to find him. Defendant was sworn, and stated that he was going, at the outside, at fourteen miles an hour. As the machine was, it could not go beyond that speed. He did not offer the constable a bribe; it was the custom in South Africa, from whence he came, for the police to accept bail. He thought it necessary to offer the constable bail. He considered that the speed should be checked properly. The constable admitted knowing nothing about motor-cars. Defendant was fined £1, including costs.

AT the Chelmsford County Sessions, Auguste Teschard was summoned for driving a motor-car at a greater speed than twelve miles an hour at Ingatstone and other places. It was stated that the defendant travelled at nineteen miles an hour. The defendant, a Frenchman, through an interpreter, pleaded guilty to going at the speed mentioned, but said he did not know the English law as to the speed he could travel. He had that morning come over from Belgium to Harwich, and was on his way to London. A fine of 10s. and 19s. costs was imposed, and the defendant was informed that the last motor-car driver convicted at Chelmsford of a similar offence was fined £5, and that the Bench dealt leniently this time because of the defendant being a stranger and ignorant of the law.

AT Grimston Petty Sessions, before Mr. S. A. Gurney (chairman), Mr. R. C. F. Everard, and Captain Digby, R.N., Frank Morris, motor-car and cycle agent, King's Lynn, was charged by Police-constable Nichols with having driven a motor-car at greater speed than twelve miles an hour, at West Winch, on April 9th. Dr. Henry Calthrop Allinson deposed that he was driving to West Winch and met defendant coming so fast that he could not recognise him. Witness was in great danger, as his horse was shying. The car was going from twenty to twenty-five miles an hour, to the best of his belief. Cross-examined by defendant, witness said he had no animosity against motor-cars. Arthur Pollocks, groom to Dr. Allinson, said he was with him on the 9th April. He saw defendant on a motor-car, but could not say at what rate he was going. It was a dangerous rate. Cross-examined by

defendant: He had had no experience of motor-cars. If he saw one going ten miles an hour he should be able to judge the pace. Several other witnesses having given similar evidence Mr. Morris addressed the Bench at some length. He said he was endeavouring to carry on a legitimate business against which there was a deal of prejudice and opposition. He contended that he was not going at more than twelve miles an hour, having left Downham at twelve o'clock and arrived at Lynn at one. Sidney Eyre, Duke's Head, Lynn, deposed that on April 9th he left Downham with defendant at, he thought, about twelve o'clock, and got to Lynn soon after one o'clock. When they got to West Winch he saw Dr. Allinson. Witness could hardly judge the pace the car was going, but he did not think it was more than twelve miles an hour. J. H. Richards, Castle Hotel, Downham, deposed that defendant was at Downham on the 9th ult., and to the best of his knowledge he left his house at 12.5. The magistrates retired to confer, and on returning into court the Chairman said the Bench had come to the conclusion that the case was proved against the defendant. The Magistrates imposed a fine of £2 and costs £1 7s. 6d., £3 7s. 6d. in all. There was a further charge of the same kind by Inspector Bayfield against defendant for having driven at more than twelve miles an hour, at Castle Rising, on April 21st. Police-constable Fuller deposed that he was stationed at Castle Rising. On the 21st ult. he saw defendant coming from Babingley at 12.15. He was driving a motor-car at a terrific pace—more than twelve miles an hour. Thomas Harper, labourer, and Edward Porter, moulder, both of King's Lynn, gave evidence, and estimated the pace at from sixteen to twenty miles an hour. Arthur Alexander, a motor-car engineer, deposed that he was with defendant. The car was going from ten to twelve miles an hour. They followed a motor-tricycle, which they first saw at Babingley Bridge. He was sure the car was not going more than twelve miles an hour. They knew by the revolutions. Albert Vere, King's Lynn, deposed that he had experience in motor tricycles. He was travelling on the 21st ult. on a tricycle at about ten miles an hour, with a friend on a bicycle by his side. The car followed them to Castle Rising. The Bench retired, and on return the Chairman said there was a doubt, and the case would be dismissed, but defendant must be more careful. Defendant made application for costs in this case, but no order was made. The defendant then apologised for anything personal he might have said. The Chairman: I am glad to hear you say that.

THE DAIMLER MOTOR COMPANY, LIMITED, v. THE BRITISH MOTOR TRACTION COMPANY, LIMITED.

THE hearing of this action was concluded, before Mr. Justice Buckley, in the Chancery Division on Monday. The action was one by which the plaintiffs sought to restrain the defendant company from registering a new company which they proposed to form under the name of the Daimler Wagon Company, Limited. In delivering judgment, Mr. Justice Buckley said that to call a car a "Daimler" only meant that it had got a Daimler motor. The advertisements showed that people discriminated between a Daimler made by one firm and a Daimler made by someone else. Had such circumstances existed that the use of the name "Daimler Wagon Company" would be calculated to deceive people and make them think they were dealing with the Daimler Motor Company? It was said that people called the plaintiffs "the Daimler Company," and that if a "Daimler Wagon Company" was started his Lordship must infer that there would be deception. In the result he came to the conclusion that what the plaintiffs were trying to do was to get a monopoly of the word "Daimler." The plaintiffs had not made out that the proposed name was calculated to deceive. Whether it would deceive depended on the way in which business was carried on. The action must be dismissed with costs.

It is reported that a Calcutta firm contemplate running motor-cars between Chitpore, Sham Bazaar, and Cossipore to haul wagons loaded with jute.

MESSRS. ASHWORTH, KIRK, AND COMPANY, LTD., timber merchants, London Road, Nottingham, have just received delivery of a Thornycroft steam wagon.

THE American Great Northern Railroad is said to be about to establish a line of automobiles to carry oranges from the packing houses near Los Angeles to the seaports.

THE Daimler Motor Company has supplied three vehicles to a local syndicate which proposes to inaugurate a motor service between Ballina and Enniscroon, County Mayo.

THE Canada Cycle and Motor Company, Ltd., of Toronto, Canada, is building quadricycles and light petrol runabouts. The firm has built a number of motor-quads with mail boxes for the Toronto Post Office Department, which have been given a very severe test this spring, and which are said to have proved entirely satisfactory. Six of these machines are to collect the mail from street boxes and a larger petrol vehicle is to be used to carry the mail between the post office and the railway station.

THE Allgemeine Elektrizitäts-Gesellschaft, of Berlin, is introducing a universal controller for electric motor-cars, which comprises all measuring and switching apparatus, and also the lamp circuits. The apparatus is placed in front of the driver, and fits into a recess of the floor, the cylinder and its gearing being in a box, lying below the floor level. The cylinder can be set at eight positions; either the head light or the side lamps, or all three lamps may be switched on or off. The apparatus are designed for currents of 180 volts maximum, and are made in two sizes, for maximum intensities of thirty and of fifty amperes respectively.

COMPLETE and compact is "The Automoblist's Guide and Motor Tourist's Vade Mecum," compiled by Mr. Robert E. Phillips, F.R.S.S., and published by Messrs. F. King and Co., of St. Martin's Lane, at 3s. 6d. The careful compiler, who claims the honour of producing the first guide to automobilists published in this country, in a short preface pays a just tribute to the assistance rendered in such an arduous undertaking to all who have assisted him, and notably to Mr. Claude Johnson, the Secretary of the Automobile Club. As to the guide itself, it is of the pocket order, neatly bound in a stiff yellow cover, and contains all the information required by the motoring tourist concerning any part of the British Isles. The system of dispensing this information is brief and simple. Towns and villages are arranged in alphabetical order, the early closing day is stated, and a sign denotes telephonic service, and figures in brackets the distance from London. Figures one to six denote respectively, hotels, dealers in petrol spirit, repairers, electric charging stations, storage of cars, and distances to other towns. Capital letters and signs against the various names which appear imply still more. Thus T against an hotel indicates that the Cyclists' Tourist Club tariff is there in force. In similar wise is the nature of the petrol to be obtained at different dépôts made clear, as well as the capacity for charging small or large accumulators at repairers or electric supply stations.

TO CORRESPONDENTS.

All communications intended for insertion in this Journal or relating to Editorial matters should be addressed to THE EDITORIAL DEPARTMENT, MOTOR-CAR JOURNAL, 39 and 40, Shoe Lane, London, E.C. Letters must in all cases be accompanied by the name and address of the writer, as no notice will be taken of anonymous communications.

The Editors cannot undertake to return MSS. or drawings, although every effort will be made to do so in the case of rejected communications. Where such are regarded as of value, correspondents are requested to retain copies.

The Editors do not hold themselves responsible for the opinions expressed by their correspondents, or for statements and facts which do not appear in the editorial columns.

The Editors and publishers beg also to state that they will accept no responsibility for unsolicited contributions, even if used, unless payment for same is directly specified in forwarding, and the terms arranged before publication.

To insure insertion communications and contributions must be in the Editor's hands by Wednesday forenoon of the week in which the same are intended to appear. Disappointment may be caused by non-compliance with this rule, and to avoid this earlier receipt, if possible, is necessary.

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THE Motor-Car Journal.

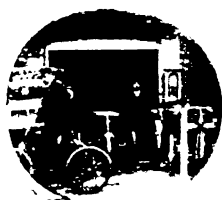
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COMMENTS.



AN important meeting of those interested in the motor-car industry was held at the Automobile Club on Tuesday, when the matter of supporting only one Exhibition was discussed at some length. There were but two resolutions brought forward, one to the effect that there should be only one Exhibition, and the other, that the one Exhibition should be held under the auspices of the Automobile Club; that the management should continue in the hands of Mr. Charles Cordingley; and that it should take place at the Agricultural Hall. These suggestions found favour with the meeting, and it may therefore be taken for granted that the Exhibition of the Automobile Club, with the support of the Automobile Mutual Protection Association, Ltd., will continue to be the recognised annual display of automobiles in this country. The fact that such a resolution was endorsed after twenty-one proxies in its favour were rejected seems conclusive on that point.

No Arena in 1902.

IN the course of the discussion reference was made to the arena, and the dust that was caused by the vehicles constantly running round. It was felt that the arena had served its purpose in creating public interest, and familiarising people with the easy running of cars. Therefore, in accordance with the widely-expressed desire of the trade, it has been decided to abandon that feature in future Exhibitions, a decision which will keep the Hall absolutely clear of dust and so facilitate the cleaning of stands. In this connection it may be mentioned that one or two of those present seemed to favour the Crystal Palace, and referred to the dusty state of the Agricultural Hall. The absence of the arena will, however, settle the dust question, for it has been demonstrated that in ordinary circumstances the Hall is as free from dust, if not more so, than is the Crystal Palace. Its floor is composed of wood blocks, which are less objectionable from this point of view than open boards.

Accessories will follow the Cars.

TOWARDS the close of the meeting Mr. Sturmev made a useful point in urging that at future meetings invitations should be limited to manufacturers, factors, and dealers in cars. It was rightly argued that the makers of accessories would support the Exhibition that had the cars; and if the manufacturers decided on adhering to one Exhibition the makers of accessories would, in their own interest, attend only that Show.

The Position of the Hall.

WITH regard to the Agricultural Hall and its position, the success of the Royal Military Tournament as a fashionable function is sufficient evidence. This, too, was proved during the recent Exhibition, when the row of carriages extended right round Islington Green on several occasions, while a double row of footmen waited at the entrance to the Hall. It is certainly not too distant from the West End, while its easy access from every part of London is another reason in its favour. Altogether, we are convinced no more favourable and convenient centre for a Motor-car Exhibition exists in London.

Dust Again.

ITALY has had its 1,000 mile Trial—from Turin by way of Florence, Rome, Perugia, and Venice to Milan—and about twenty cars went through the ordeal. Summing up the results of the tour, the *Popolo Romano* declares "motor-cars are not adapted for travelling in caravans; during wet weather the mud, and during dry weather the dust, prevents the machines from remaining close together." Apart from the phrasing of his conclusions, we are inclined to agree with the writer that a number of automobiles travelling in company is likely to arouse the dust; but not more so than a procession of other vehicles. During the 1,000-mile Trial in this country the inconvenience of travelling in Indian file was very apparent on dry dusty days, and the travel-stained appearance of many who took part in that event when they arrived at the end of the day's journey was owing to the vehicles running within easy distance of each other.

Curious Happenings.

WE have yet another reminder of the 1,000-mile Trial in some of the experiences of exhibitors at the Motor-Car Exhibition. Those who participated in the great event of 1900 will remember that tools went astray during the night, that water found its way into petrol tanks, that grease floated in the water of boilers, and that little mishaps occurred in the most mysterious fashion. Curiously enough these vexatious occurrences were repeated at the Agricultural Hall during the early days of the present month. Precautions were taken which appeared more than adequate to prevent any tampering with exhibits, but although watchmen were on duty in the Hall night and day, tools disappeared, tires were punctured, water trickled into the petrol supplies, and other strange happenings were discovered. Every day incidents of this kind were recorded, and Messrs. Roots and Venables had an interesting diary of annoyances. On Tuesday some unknown person poured lubricating oil into the paraffin oil of their motor; on Wednesday pieces of paper found their way to the oil tank, with the apparent intention of blocking the supply pipe; on Thursday a respite was given; on Friday the Salter spring was taken off the governor and a coil of wire substituted; on Saturday pellets of asbestos were dropped into the oil tank, with the result that

THE GENERAL AUTOMOBILE AGENCY, D. Farman, Man., Garage open day and night, all cars in stock, 160-164, Long Acre, W.C.

the motor was stopped when in the arena owing to one of the pieces jamming the oil feeder. Seeing that other firms had experiences of an equally irritating kind, it would appear that the spirit of Theodore Hook, with his tendency towards practical "jokes," has entered the automobile world. Its fun and reason are about as obscure as much of what is known as the "new humour."

Owners Wanted.

INTENT upon seeing the motors at the Exhibition, three persons left umbrellas in cabs outside the Agricultural Hall, and rushed within after paying their fares. One absent-minded man left his stick in the cab. It must be confessed, however, that similar neglect of property was shown by people leaving the Hall. One motorist left a box of cigars in a cab which he hired outside the Exhibition, and a stick was left in another vehicle engaged at the same place. Possibly other instances of carelessness could be given, but these have been brought to our notice by the Commissioner of Police of the Metropolis. The articles we have mentioned have been deposited at the Lost Property Office at New Scotland Yard, S.W., and the losers are requested to forward particulars of the property, the precise time and date of loss, and the journey taken in the hackney carriage, to the Superintendent of the Department without delay.

A Sad Note.

THOSE who took part in the Exhibition were delighted with the way in which the arena was conducted, and in last week's issue they gave public testimony to the unfailing courtesy and universal popularity of Messrs. Joy, Braddock, and Martin. This week we have to record the sad news of the death of Mr. Braddock. On the last day of the Exhibition he was as



active as ever, and in his accustomed health on the Saturday evening. On the Sunday night he took to his bed, and symptoms of pneumonia set in, which rapidly developed, with the sad result that he died two days later. He was an only son, and we would tender to his sorrowing parents the respectful sympathy of the many friends he made in the last week of his life.

Royalty and Automobilmism.

HER MAJESTY THE QUEEN is evidently as much enamoured of the motor-car as is the King. She has been using her electric victoriette on those errands of sympathy which have endeared her to the nation, and on Saturday visited the West Norfolk and Lynn Hospital, arriving unexpectedly on her car, attended by Sir Dighton Probyn and Miss Knollys. Not being content with being merely a passenger, she drives herself, and her example will undoubtedly do much to popularise motoring as a sport among ladies. We understand that the Queen's car has been going so well and satisfactorily that

she intends to make a present of a similar vehicle to her father, the aged King of Denmark. Thanks to the enthusiastic ardour of the British Royal House in regard to automobilism, motoring will soon become the common pastime of kings and queens and the non-motoring royalty will be quite a *rara avis*.

The Gordon-Bennett Cup Race.

HERE our next issue is published the 1901 Gordon-Bennett Cup race will be an event of the past. No definite information is available as to the English cars which will start, but a selection is to be made in Paris to-day, the 25th inst. When we visited the Napier establishment on Monday work was still being actively carried on on the three cars, which are all painted a bright scarlet. The 30 h.p. Motor Manufacturing Company's car, which Mr. Henri Farman is expected to drive, was, we hear, out for a trial trip last week end, and was expected to reach London from Coventry on Thursday evening. The cars of the Automobile Club of France are painted in blue, and those which are to represent Germany in white. Strangely enough, as little has been allowed to leak out with regard to the French competing cars, but we hear that Girardot has been for a trial spin on his car, on which he covered the 144 miles from Paris to Le Tréport in about two hours and ten minutes, or nearly an hour less than the Rapide train. As we go to press we receive a letter from the Hon. C. S. Rolls, in which he states that he has decided to withdraw from competing in the Gordon-Bennett race. "This decision I have felt compelled, to my great regret, to arrive at, owing to the fact that the car which I was to have driven (a 50 h.p. Napier) has not been completed in sufficient time to allow me to make the necessary or proper tests."

Reduction of a Toll.

TOLLS are a nuisance; and often an expensive one. To go over the bridge between Streteley and Goring motorists have been charged 4s.—a tax that was really an imposition. Casual wayfarers were disposed to pay and grumble; taking care to avoid that road in their future travels. But the toll became monotonous to firms like the Speedwell Electrical Motor-Car Company, of Reading, who had to drive a steam delivery van over the bridge once a week. They decided to do what they could to have this excessive charge reduced, and approached the Commissioners of the bridge on the subject. The complaint was regarded as a reasonable one, and was met in a reasonable way; and an immediate reduction from 1s. to 6d. per wheel per single journey has been made. The Speedwell Company deserves the thanks of automobilists generally. The next step is a further reduction to 3d.; and then—away with it altogether.

"The Old is Better."

"SIMPLICITY and reliability." Of course these are what we want in a car, from an economic point of view, and we found it of absorbing interest to wander round the Show in search of these elusive qualities displayed in the fascinating array of exhibits. But when the perfect electric car comes along, with indestructible accumulators giving 100 ampere-hours per pound, and we sit in it and press a button, knowing the car will do the rest, shall we be content? Or shall we not look back with a half regretful sigh to the shows and tours of the beginning of the century, as the old-time cyclist turns from the dull uniform perfection of a modern cycle exhibition to muse on the interest and variety of those of twenty years back, and on the early evolution of the cycle, with its frequent "sports" and "reversions to type"? No, those who are waiting for the perfect car will find when it arrives that it is not so much worth waiting for after all, useful though it be; the charm will have vanished when the feminine caprices of our present objects of affection have merged in the sober mechanical certainty of the "perfect car."

Automobilism in the Tropics.

AN automobilist who recently went out to Ceylon writes to say that petrol or its equivalents are obtainable there, and that he intends sending for a Benz car that he had been using before his departure. It has hitherto been generally supposed that only heavy-oil cars are suitable for tropical countries; but there seems no reason why light-oil cars should not be employed with a somewhat heavier grade of their usual fuel to suit the average temperature, except that some trouble might be caused by the variation thereof at nightfall. We should expect, however, that the question of cooling arrangements would acquire unwonted importance, and that radiators of the usual style would be found "reversible" in action under a tropical sun. This, by the way, suggests the question whether, under ordinary circumstances, black radiators have any appreciable superiority over bright ones, such as the Clarkson-Capel tinned coils. Their principal cooling efficiency must depend far more on convection than radiation, and it would therefore appear that it is of paramount importance that they should be out of the way of a possible coating of mud, even at the cost of their being a prominent feature in a car.

Municipal Motor- Cars.

WHILE not enamoured of the municipal enterprise that thwarts private endeavour, motorists will gladly recognise the forward policy adopted by the corporations of Burton and Derby in seeking powers to organise motor-car services in their respective towns. Why not? Corporations run buses and lay tram lines. Surely it will be better to utilise motor-cars, which have the advantages of the omnibus and of the tramcar combined with all the compensation in the way of economy that should delight the heart of a rate-respecting Councillor. It is significant that the only two applications for parliamentary powers come from the Midlands, where the people are already familiar with auto-mobiles. From thence the popularity of the municipal motor-car should radiate in every direction.

A Steam 'Bus Service in Ireland.

A NEW steam motor-bus, purchased by Messrs. McNeill, Limited, for service between Larne and Garron Tower, Ireland, had a very successful trial trip one day last week. The vehicle weighs some 3 tons 2 cwt. The body is built of oak, with mahogany panelling, and is fitted with glass sides, so arranged that they can be taken out in summer weather. The interior is tastefully finished, the seats are comfortably cushioned, and ample accommodation is provided for twenty passengers. The chassis was supplied by the Lancashire Steam Motor Company, of Leyland; while Stirling's Motor Carriages, Limited, of Glasgow, was responsible for the carriage work. A company of about eighteen assembled for the purpose of taking part in the trial trip. The journey occupied about an hour, and all along the route the vehicle attracted a great deal of attention. Those present expressed themselves highly satisfied with the run, and it is safe to predict that the bus will be greatly appreciated by tourists and others along the Coast Road. We understand that the Belfast and Northern Counties Railway Company have ordered a Thornycroft steam vehicle for use in and about Greenisland.

The Wolverhampton Automobile Club.

ON Saturday last the members of the Wolverhampton Automobile Club went for a run to Stourport, and the return journey was attended with an unfortunate incident. Between Himley and Wolverhampton several of the automobilists pulled up at the side of the road, and whilst they were stationary the mail that is nightly drawn by a pair of horses between Stourbridge and Wolverhampton came along. The driver of it seems to have had some suspicion that motor-cars were not the sort of things that his horses cared for, and he dismounted with the idea of leading them past the row of automobiles. However, the horses took fright, and burst away at the gallop, the

driver losing control. This was about ten o'clock, and the disconsolate driver was taken back to Wolverhampton in a motor-car by Mr. A. Jenks, of Wolverhampton. A short time after this, P.C. Young was standing on duty in Worcester Street, and was not a little surprised to see the mail van coming along without the driver. The constable promptly threw himself at the horses' heads and succeeded in pulling them up, but not before one of the front wheels had passed over his foot. The van was taken to the police station, and the postal authorities, being acquainted with the circumstances, took possession of it and the horses, with the result that the mails were soon despatched safely to the railway station, after an adventurous ride. Mr. Jenks states that the driver was in no way to blame for the running away of his horses.

A Silent Petrol Car.

ON the last day of the recent Exhibition considerable interest was displayed in a new car which made its appearance. Inquiries elicited the fact that the vehicle is one that has been built by Messrs. Wilson and Pilcher, a firm of engineers in Westminster. The other day Mr. Wilson kindly took us for a short spin on the new car, of which we are able to give a few particulars. Much attention has been devoted by the firm to the question of producing a quiet-running car, and they have succeeded, for it is undoubtedly one of the most silent petrol vehicles we have so far ridden on. The power is supplied by a four-cylinder horizontal engine developing 5 h.p. The



THE CLUB RUN TO GUILDFORD—A GROUP OF THE CARS AT GODALMING.

Photo by)

[Mr R. W. Buttemer.

cylinders are arranged in pairs opposite to one another, the crank shaft being centrally located. The cylinders are air-cooled, while water-jackets are fitted to the explosion chambers, the circulation being taken care of by a pump and radiator. The engine is well balanced, and is fitted with a governor. Four speeds forward and a reverse motion are controlled by a hand lever at the side. The power is transmitted through a clutch to the variable-speed gear box. The change-speed gear consists of a train of pinions constantly in mesh with corresponding spur wheels on the countershaft. The various pairs of wheels are made to drive the car by means of special friction clutches, and a feature is that, although all the pinions are always in mesh, only the actual pair that are transmitting the power are rotating. From the gear box the countershaft is connected direct to the rear axle through the medium of bevel gearing. The car is fitted with a comfortable body, with plenty of "leg" room; it weighs complete about 18 cwt., and has attained a speed of twenty miles an hour. This is the first experimental car the firm have turned out, but they are so satisfied with the results that the construction of a number of cars on similar lines, but fitted with four-cylinder engines giving 8 h.p., is to be taken in hand at once.

Weight Limit for Racers.

THE Automobile Club of France has decided that the forthcoming Paris to Bordeaux and Paris to Berlin races are to be the last run under conditions which do not limit weight. In all future events the Club will draw up regulations requiring as a qualification that cars, when fully equipped, but without passengers, shall turn the scales at less than 900 kilos. The modern racer, weighing from one to two tons, with 50 or 60 h.p. engines, will, it is probable, shortly be a thing of the past, and manufacturers will be confronted with the problem of developing a high rate of speed without that which has hitherto been considered an essential—weight in proportion. It is just possible that we shall see some startling revolutions in the construction of motor-cars before next year's big races.

The Scottish Automobile Club.

FAVoured with fine weather, the Scottish Automobile Club had a pleasant outing on Saturday last, starting from Edinburgh about 9 a.m. The route was by way of Eskbank, Gorebridge, and Galashiels to Selkirk, and home by Innerleithen and Peebles. At Selkirk the party mustered at the railway station at one o'clock, where their presence attracted a great deal of attention. Forming up in procession, the cars and their occupants proceeded to the residence of Mr. Steele, of Philiphaugh, who had kindly invited the Club to be his guests for the day. In all there were between sixty and seventy guests. After lunch, Mr. Macdonald, Chairman of the Club, proposed the health of Mr. Steele, whom he warmly thanked for his kind invitation, and for his hospitality. Mr. Steele expressed the pleasure it was to him to have them at his place, which he put at their disposal for the rest of the afternoon. Taking their host at his word, the company broke up into small parties and explored the house, which contains many pictorial and other treasures, especially of the carved art of Burmah, a country with which Mr. Steele was long connected. Edinburgh was safely reached by most of the dozen cars about half-past nine o'clock. Nothing sensational occurred on the return journey, except that all seemed to enjoy the splendid run down the hill from the top of the watershed to Innerleithen. The day's run was over ninety-miles, and the character of the country traversed was such as to try the mettle of the cars to the utmost.

The Liverpool Heavy Motor-Vehicle Trials.

THE following additional arrangements have been made in connection with these Trials, which commence on June 3rd. Admission to the Liverpool, Manchester and Blackburn depots will be by card of invitation or by badge. These may be obtained by visitors, on arrival, from the Hon. Secretary's office at the Adelphi Hotel, Liverpool. A limited number of motor-carriages will be provided to follow the runs. Seats (for which early application is necessary) may be booked at 15s. each per day. Tickets, transferable, available for the four days can be had at £3 each; all seats will be numbered. The Third Trials Dinner will be held at the Adelphi Hotel, Liverpool, on Monday, June 3rd, at 7 p.m. The Right Hon. the Earl of Derby will preside.

An Interesting Trip.

LAST year's experimental motor-car excursions met with so much success that the Compagnie Routière de France has decided once again to run an automobile thrice weekly from Paris to Fontainebleau and back, Mondays, Wednesdays, and Fridays. The car selected for this service, which, by the way, commenced this week, is a 15 h.p. Panhard, seating twelve passengers. Leaving Paris at half-past eight in the morning, Fontainebleau is reached at noon. Leaving Fontainebleau at half-past three, the starting point is reached at 6.30 p.m. The outward run is some sixty kilomètres, but the

homeward, which takes in the famous Fontainebleau Forest, is considerably longer. We should like to see this excellent example followed on our side of the Channel, and London as pleasantly linked with some of the historic objects and magnificent scenery which surround it.

THE AUTOMOBILE CLUB'S RUN TO GUILDFORD.

BY no means a bad muster of members attended the Automobile Club's run to Guildford last Saturday, although the pleasingly persistent fine weather of the whole week has made the Club run less of an opportunity than would have been the case if the day had been an isolated one where sunny skies were concerned.

There foregathered at Whitehall Court, Mr. Kenyon and lady, with Mr. C. Harrington Moore, in a 6 h.p. Darracq; Mr. Worby Beaumont, Mr. R. E. Phillips and Mr. W. D. Astell, on the 7 h.p. New Orleans of the last named; Mr. E. de Wilton on a 3 h.p. Ariel tricycle; Mr. J. Duff Gordon on a Mors Petit Duc; Mr. G. D. Barnes and sons on a small Peugeot; Mr. Claude Johnson, Mr. C. Cordingley and Mr. C. L. Freeston, on a 6 h.p. Darracq; and a Petromobile steamer. Other cars which found their way to Guildford were a 6 h.p. New Orleans driven by Mr. Orchardson, a 5 h.p. Bardon, driven by Mr. Baines, Mr. W. J. Peall and party on a 6 h.p. Daimler, and Mr. S. H. Pearce on an 8 h.p. Napier.

The cars, which left Whitehall at a quarter to three, did not all take the same route to Guildford, and, speaking for ourselves, we turned off at the south end of Putney Bridge, and made for Sheen House in order to obtain a supply of motor spirit, which, through the kindness of the Anglo-American Oil Company, was found to be on tap gratis. The drive through Richmond Park, after Sheen House was left behind, was most enjoyable, the trees just now boasting their greenest and freshest hues. While on the eastern fringe of the Park an approaching pair of spanking horses drawing a waggnette showed signs of friskiness, and our car was pulled up short. As the horses passed us we noticed that the whip was Mr. C. Arthur Pearson, who duly acknowledged the compliment.

On the rise to Esher village we overtook Mr. Kenyon's Darracq, stranded for the nonce by a broken sparking-plug. Later on, we met three stage-coaches in succession, and pulled up for each in turn, but only one of the three drivers had the grace to nod his thanks. As our car was running well on the level, but "bucking" somewhat on the hills, we turned into the White Lion yard at Cobham to examine the tremblers. Here we found the Hon. C. S. Rolls on his 24 h.p. Mors, with Mr. Staplee Firth, and Mr. Mark Mayhew and lady, on his 20 h.p. Panhard, who had all driven across from Iver, where Mr. Mayhew had been made a victim that morning at the altar of magisterial prejudice. It is noteworthy to record that one of the gentlemen on the bench did not agree with his colleagues, and that he was a lawyer! As the charge was one of driving to the danger of the public, and not the slightest attempt was made to show that any member of the public was endangered, the magistrates were clearly allowing themselves to be influenced by automobile hatred, and in their saner moments may regret that they did not heed the counsel of the one member of the bench who understood the merits of the case.

While we were waiting at the White Lion, Mr. and Mrs. Weguelin and party came past on a 12 h. p. Panhard. Shortly afterwards we took the road again, and found the drive along the picturesque road to Ripley very enjoyable. There was rather more dust than was pleasant, but the atmospheric conditions were perfect, and nature in her most attractive guise. At six o'clock we reached Guildford, gay with bunting in celebration of the local Volunteers' return, and drove into the yard of the Angel Hotel, where several other cars were already stabled.

A party of thirteen sat down to dinner, and of "petrol talk" there was, of course, no lack. The return journey was begun soon after eight o'clock, and, so far as we have heard, was characterised by no untoward incident.

A RUN ACROSS FRANCE ON A RACER.

By A. R. SENNETT.

AS the International contest is at hand in which we shall see pitted against each other hurriedly prepared racing carriages of British manufacture—the result of but three or four years of emancipation from legal lock-up—and “racers” the evolution of numerous ancestors dating long back, it may be of interest to mention a “run over the course” made by the Hon. C. S. Rolls and myself recently. For some years now I have paid periodic visits to the Continent, from the time one searched it for exhibits for our first exhibition, and it is pleasing to watch not only the material improvement being made in road travel without horses, but also the immense increase of popularity it every year attains. And this applies to every form of motor-propelled vehicles be it steam, electric, or petrol. For example, in this case, a thoroughly successful and very high speed run of several days’ duration upon a “Mors” racer of 24 h.p., during which the engines, although they had never been in use before, gave but very little trouble, one cannot but be impressed with the fact that material progress has been made in internal combustion

ravines through Châteaufort, to Limours. After this—if we are careful to bear to the right at the bifurcation 1·7 kilometres beyond—it is all plain sailing.

Having started not long before dusk we put up at this latter “place,” which seems to consist of two wayside inns, and having just put the car in the *remise*, an operation which occupied exactly three hours and added shades of darkness to the brow—and other parts—of “our” *chauffeur*—by which we mean one truly representative of Great Britain—which industrious mechanic our hostess referred to as *ton fils*, we supped off our dinner, having previously laved off a petro-oleaginous amalgam beneath an apparatus styled a *lavabos* consisting of a tin reservoir like a Benz carburettor slung upon the wall outside the Hotel de la Gare, and from the bottom of which issues a refreshing jet of truly microscopic proportions.

Leaving Limours and passing through Bonnelles, Rochefort, St. Arnault, and Ablis, there is nothing to prevent us keeping on “full steam ahead” until the picturesque towers of the venerable cathedral of Chartres loom up in the distance. We descend sharply into this old town, cross one side of it and ascend upon the other, during which racers will be within the “control.”

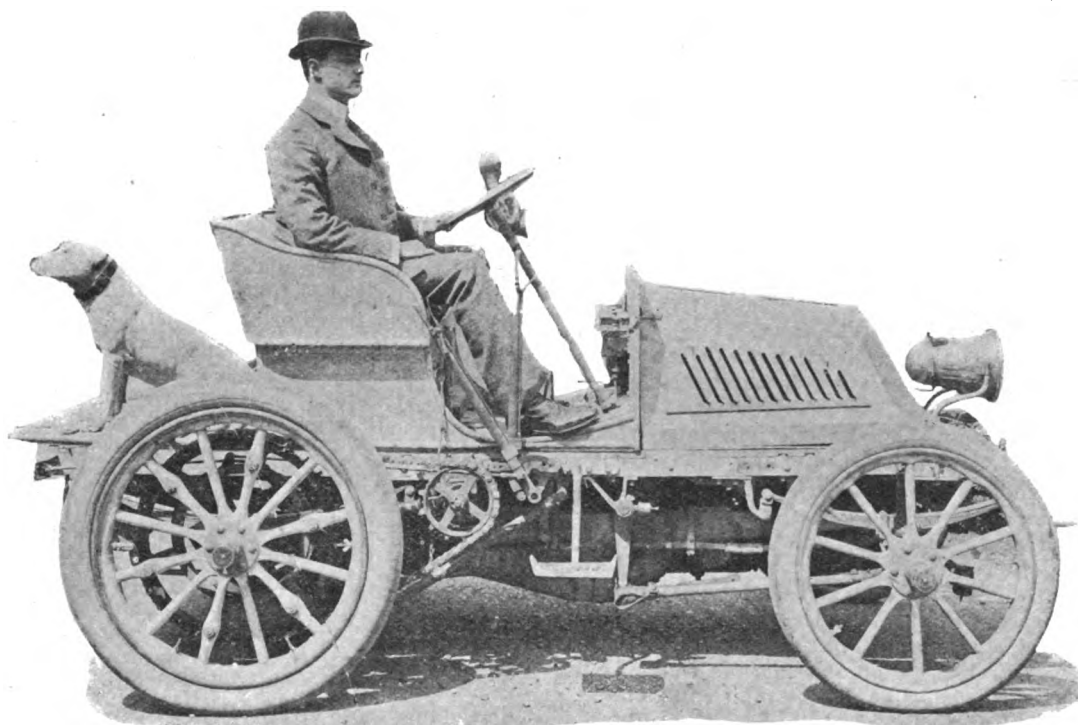


Photo by

THE HON. C. S. ROLLS ON HIS 24 H.P. MORS CAR.

[Argent Archer.]

motors and in their carburettors, their ignitions, and other details and paraphernalia attributant to them.

The race is to commence at a point—in our opinion an ill-chosen one—shortly beyond the level crossing and bridge which we pass over and under respectively about half way to Versailles. We think it ill chosen, for a check is almost immediately experienced at Versailles, out of which town of fountain fame and decayed regal splendour it is by no means easy to find one's way if we have not previously paid a visit there to make a note of the turnings, viz., on arriving at the end of the avenue leading up to the château, keep sharp round to the left—hugging the barracks—into the next avenue and leaving the latter by the turning going off to the right, down which road the electric tramway goes, and turning to the right again in passing under the railway arch at about which point drivers will probably find themselves using “bad French” *à cause du paré incroyable*. This is the point at which, in our opinion, for several reasons it would have been preferable to have placed the starting flag. Even from here it is by no means simple way-finding, to the stranger, for the first 25 or 30 kilometres, viz., passing through Buc, Toussus—where we must keep to the left—St. Remy, and the pretty little village of Les Molières, traversing one or two woody

Again *en voyage* we begin to appreciate the long straight stretches of the French roads and are led by them at high speed passing the villages of Thivars, Vitray, and Bonneval to the town of Châteaudun, thence through the villages of Cloyes and Pezou we run into the town of Vendôme. Through this town also, which is not an easy one to get out of, racers will probably be “controlled” and continue on their course. As for ourselves, however, having left Limours about nine o'clock a.m., and finding ourselves here just before noon, we took this opportunity of lunching comfortably at the Hôtel du Commerce.

We should imagine that in no part of Europe, except upon the plains of Lombardy and Piedmont, is such a perfectly straight and level road to be found as that we enter upon immediately after leaving Vendôme. This beautiful rectilinear and approximately flat highway remains staunch to the interests of the high-speed motorist until it descends into the interesting old town of Tours. Mounting again by a zigzag to the right after crossing the Loire, on leaving that town it continues its rectilinear course, but in a lesser degree, through the populous town of Chatellerault and thence on to the historic and high perched Poitiers. From Poitiers to Paris, about 330 kilometres, is a very pleasant day's run for a

THE GENERAL AUTOMOBILE AGENCY, D. Farman, Man., Garage open day and night, all cars in stock, 100-104, Long Acre, W.C.

high-speed carriage and one which we enjoyed immensely on our return journey. Leaving the scene of the historic battle at noon and allowing ourselves an hour for luncheon, we arrived in Paris about six in the evening.

Going to Bordeaux, however, we passed on through Poitiers, putting up for the night at the townlet of Ruffec. Here we "patronised" the hostelry bearing the somewhat grandiose title of "Les Ambassadeurs." We were at first puzzled to know why mine host—one M. Poste—should display upon his signboard his own name in lettering of imposing stature to the almost total occultation of the pronomen of his inn, for "Les Ambassadeurs" are allowed but a meagre measure of importance. The riddle was solved, however, on glancing across the road, when we discovered that the hotel favoured alike by cyclists and automobilists was the "Hôtel de la Poste." *Voilà tout !*

From Poitiers the route continues fairly straight, and but gently undulating all the way down to Mansle, from where we may date the "switch-back" portion of the track; from thence also we find it losing its characteristic straightness, whilst from Chevancaux—in passing through which, by the way, we must be very careful not to miss the quite narrow and easily overlooked turning diverging from the High Street, and for which we must look out on our left hand to lead us to Guitres. From this divergence the route becomes entirely changed in character, for it is now sinuous and—as our *chauffeur* remarked—"not a bit like a racing road." This type of road continues much the same through Guitres, a village, and Libourne, a town of some size—until it lands us *sain et sauf*, as we trust it may all the competitors in the "International" at the "Quatres Pavilions," the winning post, where will be found in waiting upon *les braves chauffeurs* a handsome *brunette* who, with an agreeable "*mélange* of pleasantry and dignity," informed us the cause of her coal black eyes and jet black hair was owing to her being a *Bordelaise*. From thence, having filled up our tanks at the cheapest rate on the road, we descend into a town of southern aspect and southern manners—our destination Bordeaux.

Slacking up in earnest, perhaps for the first time, as the grille of the Bordelaise Octroi loomed up before us in a long avenue and a blinding rain, each doubtless inwardly—but of course not outwardly—exhaling *un soupir de soulagement* that *le mauvais état des routes* had allowed us to complete our trip in peace instead of pieces, we cross the oft-quoted Gironde by a many-arched bridge and deliver up ourselves body and soul to finding the cock of the walk, or, as our French friends say, *le coq du village* of automobilists *l'Hôtel du Chapon Fin*. Here we give ourselves up to good fare and dissertation on a glorious run.

Fine though the *voie* is it is like the *voie* of life, full of surprises. These consist principally of those *bêtes-noires* of the *chauffeur* the *caniveaux*. Scarcely less dangerous, perhaps, brusque *coudes* suddenly making their appearance at the end of long straight stretches and which disclose, no sooner are their right-angled coigns negotiated, the grille of a level crossing. These grilles by their construction may even be a source of danger on straight stretches, from the fact that they frequently consist of thin vertical rods only discernible at a very moderate distance. There are one or two cases in which such grilles present themselves to the surprised driver, in descending a rapid pitch, not many carriage lengths after rounding the bend. An example of such a surprise—a veritable death-trap—is to be found a few kilomètres—perhaps eight or nine—on the Paris side of Barbezieux. There, in returning from Bordeaux and breasting a gentle rise at high speed, we instantly and without any warning came upon an exceedingly rapid descent near the beginning of which is an acute turn, less than a right angle, the bend of which is hidden from view, and were it not we doubt if any *chauffeur* could round the point at full speed without coming to grief over the steep embankment which forms his near side. Forewarned is forearmed, and we should endeavour to locate it by an old tower which stands to the right of the road as we ascend the hill leading to this queer eccentricity on the part of the *ingénieurs des ponts et chaussées*.

French roads are well marked by kilomètre posts, even to the hectomètres. Many, however, are badly kept and present that French error of being inscribed in figures far too small to

be conveniently useful. The smallness of the lettering upon direction posts and tablets, and the use of iron for these—as inapposite, as it is universal on the Continent—becomes annoyingly *en évidence* to the automobilist. One very disappointing feature of the kilomètre posts is that they do not always show the distance from Paris, but instead merely give their position in relation to the boundary of the particular Department in which they may be situated—a point of but little interest or value to the automobile tourist.

With regard to the trouble arising from rust upon the direction posts and notices, it is to be hoped that that much over-rated metal aluminium may have something to say; whilst in regard to lettering it may be mentioned that there are five principle kinds of roads. The most important, and that over which the race will be run during its entire length, being the *Routes Nationales*. These grand highways are kept in the most laudable repair as are also the *Routes Départementales* and the *Chemins de Grandes Communication*. The two remaining, viz.:—the *Chemins d'Interest Communs* and the *Chemins vicinal ordinaires* may vary greatly as to their upkeep, whilst the state of the *Chemins ruraux et particulier* may be anything, but the latter do not affect the motorist. The class of route on which we may be travelling is designated by the colouring of the board itself and its lettering, but this entails material loss of efficiency in them. We find, for example, white lettering on French grey a combination sadly wanting in definition, especially when the canker rust begins to assert itself. This idea of giving a distinctive feature to direction posts whereby one can tell instantly if one has inadvertently left, for example, our direct road upon a *Route Nationale* and wandered upon a *vicinal* way, is, *per se*, a good one, but it would be far better carried out by adhering to the old English custom of bold black-upon-white, with the addition of a coloured border to the board or band upon the post, such border or band signifying the class of road upon which the direction post, as the Frenchmen say, finds itself.

Time doubtless will bring with it improvements of this nature, modifications which will arise as the transition from slow to rapid common road transport proceeds, but it is to be hoped that improvement in regard to the "surprises" of which we have spoken may not long be delayed, more especially as concerns the *caniveaux*, since these could be improved off the face of the roads at small cost, and to immense increase of both comfort and safety in high-speed motor touring. The fact that these drains traverse without warning highways of otherwise almost perfect upkeep is as incongruous as their existence is annoying. For they are to be met with in places where everything else is conducive to high and exhilarating speeds, as, for example, in descending those lovely long and perfectly straight hills when we can look forward to 70 miles per hour as well as a good sound shaking up if such a surprise as a hidden *caniveau* should be met with near the bottom. This actually happened to us; the speed was magnificent, speech was impossible, when nearing the bottom and at that point when our *chauffeur's* "Ha! Ha!" was nearly due we flew over a *caniveau*; we say flew advisedly, for we both suddenly became aeronauts, and a good deal of daylight might have been seen beneath a certain portion of our anatomy, but alas! this airy flight was not to last, we both returned, and this with such a crash as our anatomies had never known, too great, indeed, for the seat, which, being burst in, deposited us safely but abruptly upon *les utiles*, a proceeding *utile, mais punible*. One of our engineer friends complains that a certain type of steam carriage is conducive to burnt anatomies, we can testify that racing cars are provocative of bruised *idems*.

Despite such slight drawbacks as these to which we refer, so inviting are the highways of *La belle France* that your British *chauffeur* leaves them with the greatest reluctance, and frequently, as in our case, he leaves behind him his much beloved automobile, with the resolve that he will be back as soon as possible to indulge in runs such as the British policeman cannot tolerate. With this longing for Continental runs we have very great sympathy; but we certainly have not with the fashion now becoming so prevalent of flavouring the British horseless vehicle industry with French sauce. To our mind it seems as unnecessary as it is unpatriotic to make use of a mongrel language

in regard to a sport which should have all its energies centred on its own growth and physical improvement. To have given to our club of horseless travellers the name of "automobile" was, we consider, at once courteous and diplomatic, although in our opinion the "Motor Coaching Club" would have had a better ring; but to continue a jumble of French and English we consider very undesirable. We confess to something in the nature of a shock on at first hearing that our Automobile Club was to have a *garage*—dreadful word; would not the English word store or the Anglicised *dépôt* have been both simpler and more natural? In places where motor-vehicles were only to be temporarily stored the term "running store" might have proved as intelligible as "running shed" has been for so many years in regard to railway locomotives. We are keenly looking forward to the expression of blank amazement which will overspread the countenance of the first British rustic whom we shall have occasion to greet with, "Where is the *garage*?" It is, indeed, mere affectation for the owner of a horseless vehicle—we beg pardon, a *chauffeur*—to inform one that he is about to construct a *fosse* in his coach-house—pardon *remise*. A "fosse" in common parlance means a ditch; let him put ditches in his coach-house by all means, but why should not the word—clear and terse—"pit" be good enough for a road stoker as it has so long proved itself to be for a locomotive engineer? If this sort of thing goes on we shall have our rural police, and yokels generally, giving their evidence somewhat in this manner:—"I was a zdandun wee Goiles near the 'bout' o' the *collin*—whot's got a 'rump rapid' and a 'coin brusker'—not more nor your meters vrom the *caniveau*, when I zeed the autimobyle rushin' down a blowin' es *tromp*, and I zes to Goiles, I zed, 'that theer *chuffer's* got 'er on 'er *catrionne weelesse*, and as zure as I ai't President Loubay, 'e'll ave a *contray tromp*; the *bon's* a bit *glissont* and if 'e tries *d'freining* 'is *wouture* 'e'll be in the *fosse* zoon as he comes to the *pavey*, another vive minits and that theer auto'll be 'n *punnee derapage*. 'll zettle 'er' I zes, 'so off ye goes for Dr. Zoorbones on yer *biygette*,' I zes, 'and zur 'nough!'"—"Thank you that will do," from his Honour.

On the other hand, that automobilism is synonymous with development and education is undoubtedly a fact, for on the Continent we find men, both well read and nobly born, undergoing courses of technical instruction the better to fit them as both *chauffeurs* and amateur mechanics; whilst contrary to what might at first be thought, automobilism is conducive to a higher standard of physical development. A good *chauffeur* should have conscientiously served his apprenticeship to his automobile, and in this he will find his hands—if he be not afraid to soil them—quite as useful and necessary and as capable of skilful application as they would be in "tooling" a "four-in-hand." Automobile nomenclature requires some study. Your motor is not to be put off with vague ambiguities, one cannot start a recalcitrant one on information received from a reply to such a question as "Now what am I to do? I have tightened the 'thing-me-bob' and loosened the 'thing-a-migig'; I am sure the 'what-is-it' is all right, and I have oiled the jigger on the 'what-you-may-call-em,' but still she won't go."

Certainly, four out of the five senses are not only required in motor driving but are thereby sharpened. Sight, the most indispensable of all, to a high-speed driver—a sense which, in this relation, must be inseparably welded to nerve and decision—is undoubtedly improved in its acuteness. As regards hearing, the working of a four-cylinder internal combustion engine to the man in the street merely makes a "— noise"; to a "stoker" it is rhythmic melody in the varying cadences of which he can at once detect if his ignition, his governing, his exhaust, and his throttlings are as they should be. The sense of touch is perhaps requisitioned as much as any, and this, too, is frequently quickened; your experienced *chauffeur*, for example, can tell instantly on placing his hand into that bag of myriad tricks beneath his *bonnet* if he has touched a leaky electric ignition or an incandescent tube. *Prima facie*, one would hardly expect the sense of smell to be requisitioned, the popular belief being that the motor's legacy in this regard is left *pro bono publico*; this is quite an error, for, sitting in his Promethean-propelled chariot, your *chauffeur* from time to time

makes an olfactory analysis—to the second place of decimals—of the relative percentages of "essence" to "lubricant" merely by the nasal aspiration of a sample of "smell" taken at will—or without it. In regard to this, perhaps, even the fifth sense—taste—plays some part.

Speaking of the development of the senses, may we here beg of our medical practitioners—for whom we are doing a good turn in providing them with an economical and pleasant mode of "doing their rounds"—that they will not turn such inventive talent as they may possess towards the development of a brand new set of diseases for us, and which they will probably brand as "automobile ataxy" (attacks-see). The *chauffeur*, being a man of much resource and small requirements, will willingly contrive to do without them.

We would, however, like to learn from our highly-respected "medicine men" if the intemperate imbibition of "sixty-mile air" is capable of producing intoxication, or possibly vibration-aberration. Like the Scotchman, we are a "wee bit worrit" about certain symptoms we have observed in "our" stoker after very long runs. For example, coming to table after "just feeling round the car"—an operation usually delaying dinner for three hours or so—he would—whether he felt himself to have been the horse we know not—on entering from the "stable" mutter something about the manger—*quelque chose à manger*—whereupon he would at once pounce down upon what he called his *horsey d'overs*. We tried gentle questioning, such as, Which is the best place for auto-clothing? To which, with an abrupt *sforzando*, he would *jeter à la tête*, "Beau-t'ful gardiner's daughter!" perhaps "Great magazine of love!" or "Good ma chère!" Yet there was always method in his mad, aerotoxication; for are not autocarts *en evidence* in Paris bearing the legends *Belle Jardinière*, *Grand Magasin de Louvre*, or *Don Marche*. One thing we can vouch for, this was not due to the *vain du payee*! the libation to Bacchus acting indeed merely as file and sandpaper to the acuteness of "our" *chauffeur's* ardour. Add to this, however, the soporific effect of a stream of super-oxygenated blood sluggishly dragging over his brain a burthen of *débris*, embers of the burning of two or three hundred kilomètres of forced draught, and one need not be surprised to read in "our" stoker's *figure* a desire to dream of prospective courses rather than to converse upon them.

At this stage we would venture to inquire, "When do we leave?" To which—in dulcet tone and *piano*—he would reply, "Lundi, Mardi, Mercredi, Jeudi." Then conversation would flag, and we would venture to ask, "When shall we go to bed?" To which, in *dolce* cadence—*diminuendo* to *pianissimo*—he would murmur, "Lundi, Mardi, Mercredi. Good-night, old chap."

(To be continued.)

THE new Romney Rural Council has decided to make a representation to the Standing Joint Committee of the County, calling attention to the excessive speed at which motor-cars travel, and asking them to instruct their constables to look into the matter.

MR. GEORGE TUFNELL, of 527, Leytonstone Road, Leytonstone, Essex, has been appointed an official repairer to De Dion Bouton, Limited, and to the Motor Manufacturing Company, Ltd. He informs us that he has a large stock of small parts, and has facilities for executing repairs to all kinds of motor-cars. He also stocks petrol, lubricants, etc., and can recharge accumulators.

FROM Messrs. Monk and Lonsdale we have received an intimation to the effect that they are in the habit of supplying petrol on Sunday mornings at their works, 105 and 106, North Road, Brighton. They further intimate that they are shortly moving to larger premises at 41, Waterloo Street, Western Road, where the wants of motorists will be attended to at all times—night, day, or Sundays.

MESSRS. ROSE AND COMPANY, of Castle Road, Southsea, have obtained a licence to stock petrol to the extent of 300 gallons for the use of motorists. That they have ample facility for storage and repairing was recently proved, as on the occasion of the run from London to Portsmouth they dispensed no less than 325 gallons of petrol, and did some repairing in a rapid and satisfactory manner.

CONTINENTAL NOTES.

BY "AUTOMAN."

THE A.C.B. kilomètre speed competition, with a flying start, took place near Dieghem, on Sunday, beginning at two o'clock in the afternoon. The road chosen is of macadam and rather narrow, quite straight; but it seemed to me not exactly level, and as it was covered with very small loose stones, three cornered and sharp looking, the conditions were certainly not of the best either for speed or for the welfare of the tires. The day was dry, but rather chilly and cloudy at intervals, with a great deal of fine dust. There were fifty entries, comprising motor-cycles, voituresses, light and heavy cars, and the competition was divided up into nine classes. About 500 yards was allowed for the flying start. There were nearly 3,000 spectators, and though the road was better cleared than at Antwerp, a serious accident was only just averted by the skilful driving of M. Roland, who was the winner of the record. Just as he was coming by at nearly forty-three miles per hour, an old woman started to cross the road, and would certainly have been killed had not Roland swerved at the risk of going into the ditch. Unfortunately the great event of the day did not come off, as neither the Baron de Crawhez's 28 h.p. Panhard nor the Baron

THE A.C.B. paper-chase took place in the Bois on Thursday, the 16th inst. M. Lucien Hautvast was the hare and started off at 7 a.m., assisted by the Baron de Crawhez. At ten o'clock the hounds, consisting of some twenty motor-cars, started from the Automobile Club, Place Royal, and took up the chase, following a false scent until turned back by the green confetti, which was the indication of the end of the deceiving trail. Mr. Van der Spek, on his 12 h.p. Belgian Daimler, arrived behind time, and seeing the returning cars, avoided the trap and got to the head of the pack; but he was not destined to keep his lead very long, for several fresh false scents completely changed the order of the pack; and finally M. Hubert Portier, member of the A.C. of Holland, in his 12 h.p. Pipe car, found the hare comfortably established under the trees near Everbergh. Count Racinsky, on a 7 h.p. Peugeot, arrived second, and M. d'Aubreby, on a 6 h.p. Belgian Daimler, third. The hare and hounds then proceeded to lunch, and completed a most successful day in a convivial manner.

AN important advance in the quick repairing on the road of motor-tires has been made by M. de Seunevoy, who has discovered that he can save a great deal of time and make a repair which is more permanent by winding round the inner tube a band of thin rubber, which covers the patch and holds it firmly



THE BELGIAN AUTOMOBILE CLUB'S KILOMETRE SPEED COMPETITION. M. WEBER'S "TORPILLE" CAR AND M. DE SMEDT'S DE DION VOITURETTE.

de Caters' 1901 type Mors were ready for the trial, and M. Miesse's 12 h.p. steam car, which, it is said, can do sixty-two miles per hour, did not come up to scratch. The best times were made by Roland, on an 8 h.p. Gobron-Brillié, 42.91 miles per hour; Van der Spek, on a 12 h.p. Belgian Daimler, 40.57 miles per hour; Paul Wilford, on a 16 h.p. Peugeot, 40.57 miles per hour. A 6 h.p. twin-cylinder Deschamps car, driven by M. Dratz, won the competition for cars weighing between 7½ cwt. and 12½ cwt., easily beating a 12 h.p. and a 6 h.p. Vivinus and a 6 h.p. Torpille, driven by the Baron de Crawhez, and doing a speed of 28.63 miles per hour.

THE A.C.B. are organising for July a fête in the Bois de la Cambre which has every appearance of being a brilliant affair. The Bois, situated quite close to Brussels, is a beautiful spot and an ideal rendezvous for outdoor sports of every kind. The fête will be inaugurated with a battle of flowers for motor-cars and bicycles, and there will be fencing, regattas, contests for boats with petrol propulsion, and balloon ascensions and competitions, and also water polo and other nautical sports. Talking of balloons, there seems somehow to be a kind of fraternal tie on the Continent between automobilists and aeronauts, for both the A.C.F. and the A.C.B. are the headquarters of the navigators of the air.

in its place. By the use of this method it is not necessary, says M. de Seunevoy in *La France Automobile*, even to wait until the solution is dry before the patch is put on; the solution can be spread on the tube and on the patch, fix the latter in position, inflate the tire slightly, wind the rubber tape round the whole, and replace the cover, inflate, and off you go. This system will, it is stated, apply not only to small punctures, but also to a hole as big as a franc piece.

THE Italian tour came to an end at Milan on the 11th inst. The start was made in showers of heavy rain and the finish in clouds of dust. The trip has been a difficult one, especially the part between Rimini and Bologna across the Apennines, where on the steep and dangerous hills more than one car was obliged to call in the aid of a team of friendly bullocks to help it on its way. A very sad fatal accident occurred between Bologna and Padua. A Florentine, named Le Chevalier Toniatti, whilst passing a smaller car on his 24 h.p. Panhard had the misfortune to run over a little girl. It seems that the child rushed suddenly across the road in front of the car, carrying a one-year-old baby in her arms. M. Toniatti was not going fast, but the accident was inevitable. The aluminium mud guard struck the little girl on the forehead and death instantly ensued. The baby had a miraculous escape and fell between the mud guard and the bonnet

and was seized by its clothes by a friend of the driver and hoisted safely into the car. This untoward event cast a gloom over an otherwise successful trip, and the distress of Chevalier Touietti at the terrible misfortune of which he was the cause secured him the sympathy of everyone.

ENGLISHMEN travelling to Switzerland in their motor-cars will do well to note that they must take with them a document certifying the name of the maker of the car and also that of the maker of the body, and giving the weight of each separately. I should recommend them to get this written in French on paper with the printed heading of the makers and signed by them, and giving the weight in kilos. They will have to pay about 1s. 1½d. per 100 lbs. on the car and 7s. 3d. per 100 lbs. on the body. If they have not a certificate of this kind it will be necessary to have the car weighed and to pay 7s. 3d. per 100 lbs. on the total weight. The weighing of the car will also very often necessitate delays and cause trouble. The amount paid will be refunded when the cars leave the country at any frontier station.

THERE are altogether eighty-seven entries for the Paris-Bordeaux race, amongst which I notice nine Panhard and Levassors; six Darracqs; five De Dion motor-cycles; four Renaults; three Mors; three De Dietrichs; three Mercedes; two Decauvilles and two Turgan-Foy cars. It is remarkable that there is not a single De Dion voiturette. From the *Auto-Velo* I gather the following curious calculations:—There will be 1,200-horse power on the road, consuming 132 gallons of petrol per hour, and the total value of the cars on the road will be £80,000.

FROM the latest information obtainable at headquarters, I learn that the German Automobile Club will run a Mercedes in the Gordon-Bennett Cup after all, but whether it will be exactly the Nice model or not is as yet quite unknown. It seems to me to be the dark horse in the race.

MICHELIN'S eleventh Monday in the *Auto-Velo* deals with the delivery in France of his tires, and does not interest the English reader; the subject seems to be about exhausted.

A PRIZE of 1,000f. is being offered by Prince Pierre d'Arenberg to the first alcohol motor-car to reach Berlin in the coming Paris-Berlin race.

THE tour of Holland, organised by the Dutch Automobile Club, will commence on June 4th and extend to June 7th. The days' runs range from 115 kilometres to 184 kilometres.

A COMPANY has been registered with a capital of £5,000, to acquire the motor-car agency business carried on by Mr. J. J. Mann, and to carry on the business of manufacturers and proprietors of, and agents for motor-cars, etc., under the name of Mann and Overton, Limited.

THE Worshipful Company of Coach Makers and Harness Makers of London is offering a scholarship of £25 for one year in connection with the Higher Technical day class in road-carriage building at the Polytechnic Carriage Building School, commencing Monday, September 30th next.

SOME forty or fifty motor-cars are expected at the motor meet at Ayscoughfee Hall Grounds on Whit-Monday. The Lincolnshire Automobile Club is a strong body, and includes some of the leading people of the county. The object of the meet is to demonstrate the capabilities of motor-cars and the ease with which they are controlled.

THE endurance test of the Long Island Automobile Club, held on April 20, was a severe one, as the weather was as bad as it could possibly be. Out of 25 entries there were 15 starters, and 10 completed the course. The Gasmobile and Haynes-Apperson vehicles were awarded highest honours, going through without a stop. The Holyoke was next, with one minute stop. The De Dion-Bouton, Darracq, Daimler and Electric Vehicle Company were also near the leaders. The De Dion-Bouton Company and the Electric Vehicle Company won the hill-climbing contest.

CORRESPONDENCE.

BELT TROUBLES.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I have a 9 h.p. Benz car, and the only trouble I have is with the belts, which, as soon as I have got the stretch out of them, break. I have tried both single and double raw hide and tan belts, also canvas and rubber Balata belts, but all to no use. I cannot use a wider belt than 2 inch. I should be glad to have the experience of those who have had the same trouble; also as regards belt fasteners.—Yours truly,

R. E. L.

MOTOR-CARS V. MOTOR-CARRIAGES.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—For some years I have been looking forward to the time when I could do away with my horses by purchasing a motor-carriage. It seems, however, that the craze is still to bulp motor-cars for speed and long distances. There are thousands like myself who would be prepared to buy a reliable motor-carriage for the ordinary uses of every-day life. The design of most motor-cars is more like a fire engine. What is wanted is a motor-carriage on the lines of the landau, a vehicle elegant to look at and that could be open or closed at the will of the user, so that in sunny weather it could be open and in rainy weather closed. In my case I do not want to go from John o' Groat's to Land's End in so many hours. I merely want to go shopping, drive to the station, or take a drive into the country, as I would do with my horses, at eight to twelve miles an hour. I want my engineer to sit on the box as my coachman sits when driving me in my landau, so that he would be in his proper place and not one of the carriage party. Enthusiasts may prefer to drive themselves, I do not. Now I have outlined what is required I have no objection to you giving my name and address to any firm who think they can supply my requirements.—Yours truly,

MOTOR-LANDAU.

THE CONSUMPTION TRIAL.

TO THE EDITOR OF *The Motor-Car Journal*.

DEAR SIR,—We notice in your issue of the 11th inst. a remark to the effect that the New Orleans car was the most efficient in the consumption test held on May 2nd. This is incorrect, as the inclosed figures show. Efficiency of the motor cannot possibly be governed by the weight of the passengers carried, as if anyone chooses to have a light frame and stick an egg-box or two on it for seats, he could easily increase its carrying capacity far beyond what would be practicable with a substantially and comfortably built car. It was extremely annoying to us to find, in spite of all our precautions, that the sealed cans of petrol we purchased should have contained water. This led to our having to take off the petrol connections on the first ascent and lose some of the petrol in trying to get rid of the water. In future, care should be taken that observers know the road, as our car was taken some distance out of the proper course on the outward journey, and did, probably, thirty-four miles instead of thirty-one.

Our car, which was one of last year's pattern, kindly lent to us by Mr. Barside, of Halifax, as you will see from the enclosed figures, was the most efficient on the outward journey, and on the three trials was practically equal to the 6 h.p. Daimler, whose journey on the return was made, if the figures are correct, on quite 30 per cent. less petrol than the outward journey. As the speeds of the cars varied so much we think the hill test the best guide, as each car then did its best.—Yours faithfully,

H. AUSTIN.

1. 6 h.p. Daimler.—Trial A, 1'30 gallons per ton; trial B, '879 gallons per ton; trial C, '355 gallons per ton; total—2'534 gallons per ton.
2. 5 h.p. Wolseley.—Trial A, 1'145 gallons per ton; trial B, 1'062 gallons per ton; trial C, '369 gallons per ton; total—2'576 gallons per ton.
3. 24 h.p. Daimler.—Trial A, 1'133 gallons per ton; trial B, '944 gallons per ton; trial C, '555 gallons per ton; total—2'632 gallons per ton.
4. 7 h.p. New Orleans.—Trial A, 1'334 gallons per ton; trial B, 1'133 gallons per ton; trial C, '427 gallons per ton; total—2'894 gallons per ton.

5. Ariel Quad.—Trial A, 1,546 gallons per ton; trial B, 1,146 gallons per ton; trial C, 474 gallons per ton; total—3,166 gallons per ton.
 6. 8½ h.p. Decauville.—Trial A, 2,000 gallons per ton; trial B, 2,026 gallons per ton; trial C, 733 gallons per ton; total—4,759 gallons per ton.
 7. 5 h.p. Decauville.—Trial A, 2,64 gallons per ton; trial B, 2,794 gallons per ton; trial C, 597 gallons per ton; total—6,031 gallons per ton.

RACING CARS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I am obliged to Mr. Edge for his letter in your issue of 11th inst. pointing out error in Mr. Mayhew's notes, which, of course, puts quite a different complexion on the matter. Mr. Edge was also good enough to mention the weight of the new 70 h.p. motors for the Napier cars. It would be interesting if he would supplement this with the weight of transmission gearing, cooler, and battery; also total weight of water and fuel carried, and how far same is estimated to carry the car at top speed.

He also states that he thinks no steam engine and boiler can come anywhere near the result obtained by the Napier motor, and on this point I should like to draw attention to what has already been done in the way of light steam machinery where light weight was of utmost importance. In the year 1894, Sir H. S. Maxim made a steam plant for a flying machine, consisting of a water tube boiler, oil fired, and ordinary two-cylinder compound engine; the weight of boiler was 1,000 lbs., and taking the actual results obtained from it there was steam enough produced to develop 750 h.p. if used in a quadruple expansion engine. Mr. Maxim's two compound engines weighed 644 lbs. for the two, and if designed as one quadruple expansion would certainly not weigh double that, or even near it but; to be well on the safe side, I will say 1,000 lbs. for the engine, which means that the engine and boiler alone weigh 2,000 lbs. for 750 h.p., and this corresponds to the motor, carburettor, battery, and transmission gear of explosion engine, no transmission gear being required for a steam engine, and weight per h.p. as follows:—

Steam engine and boiler 750 h.p. 2,000 lbs., equal to 2.7 lbs. per h.p.; steam engine and boiler 70 h.p. 250 lbs., equal to 3.5 lbs. per h.p.; Napier motor without transmission gear, carburettor, or battery 70 h.p. 700 lbs., equal to 10 lbs. per h.p.

It should also be remembered that with a steam engine direct coupled to driving axle a much larger percentage of the power would be transmitted to the wheels.

In the above comparison I have allowed more weight for the smaller steam engine. A condenser is required in each case and also a certain amount of water, but not having the weights for Napier motors I can make no comparisons, but may say that the weight of water carried by the Maxim boiler was very small.

The above is taken from actual experiments and known facts, and what was done in 1894 can be done better to-day, and I am still of opinion that if the greatest power be required for minimum weight then a steam engine and boiler stands far and away ahead of anything else at the present day, and I only wish some racing man, who has the necessary means and courage, would come forward and have a car got out on the lines I indicated in my last letter, and if speed be his object he would undoubtedly get it. — Yours truly, STEAM.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I had meant to reply to "Steam's" letter earlier only I could not find time to do so. It is all very well for "Steam" to cry down petrol cars, but can he produce anything better in the way of steam? "Steam" did not observe that the Serpollet car was "left" on the hills, which strikes me as a somewhat important point. As regards weight Mr. S. F. Edge has clearly replied to "Steam," so there is no more to be said on that point. I should recommend "Steam" to go and see over Messrs. Napier's works. If I remember aright "Steam" is the gentleman who, some time back, made some disparaging remarks about the Daimler motor and Panhard gear. I may be mistaken, however—very possibly I am—in which case let "Steam," whoever he is, consider the statement withdrawn.— Yours truly, R. A. COBB.

AN OBSTINATE VOITURETTE.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—With reference to the unpleasant circumstances connected with the motor of your correspondent, G. W. Grabham, M.D., I would suggest that he remove the gas valve, test compression of spring, then the condition of valve stem; if he finds the latter to his satisfaction, let him remove one coil of spring; then test motor. If no improvement takes place, remove more; the valve is too heavy for a low velocity.—Yours truly,

H. LAMBERT.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Referring to Dr. G. W. Grabham's obstinate voiturette, I had a De Dion car which served me in just the same manner, when I first had it, and finding everything in good order I tracked the trouble to the sparking plug, which I took out, bringing the points together till they were just about 1-32in. apart. After replacing the plug I did not have the slightest trouble; the car would take any hill. If G. W. Grabham, M.D., will try this I think he will find his troubles ended; if this does not cure it, I should be pleased to help him.— Yours truly,

C. J. CATHERY.

THE STREATHAM-CLAPHAM JUNCTION SERVICE.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—When Streatham first heard it was to have a motor-car service to Clapham Junction, officially stated to run at ten minutes' interval, and at twelve miles an hour, there were thoughts of good things, especially amongst the local business folk. But they were sadly deluded, for while waiting for one they heard that the cars ran at half-hour intervals, were well filled, and that the twelve miles an hour was much appreciated. After waiting 1½ hours, however, they return home, appointments cancelled, to condemn the new locomotion entirely as unreliable. As an advocate of mechanical traction I am sorry to see this sort of thing bring the new type of locomotion into disrepute.— Yours truly, C. H.

PETROL AT BRIGHTON.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Some time ago I read a letter in the *Motor-Car Journal* warning motorists against going into Brighton because petrol was not obtainable there on Sunday. I may say I was there on Sunday last and had no difficulty whatever in obtaining it at Mr. J. Miles', 1, Trafalgar Court, Trafalgar Street. I found his assistant most obliging. He informed me that they always had a good stock of petrol and best lubricating oil and were anxious to do all in their power to oblige motorists going into Brighton. I stored my car at the King and Queen Livery and Bait Stables. It was a good place, and the charge was only 1s. for the night. I hope this information may be useful to some of your readers.—Yours truly, H. SEAL.

MR. S. F. EDGE writes referring to the device for showing the circulation of the water in Mr. Stanton's car, mentioned in our last issue:—"I would like to point out that this arrangement of a tap on the dashboard is embodied in every standard Napier car turned out, and has been, ever since the first one was manufactured. On the larger carriages we make arrangements for this water to run into the water-cooled brake drums, to keep these filled."

THE French Department of Public Assistance has asked the Paris Municipal Council for a transformation of the existing type of city ambulance into the automobile type. The innovation is due to the initiative of Dr. Martin, who has called attention to the very long time frequently required for transporting invalids from their homes to the hospital. Trials have already been made, showing that the time could be materially reduced.

FLOTSAM AND JETSAM.

—❖—
By "FLANEUR."

EARL ROBERTS has added to his many moving experiences that of being concerned in a motor-car accident, the result of which was that the driver of a restive animal was injured to a degree necessitating his removal to a hospital. Knowing how general is the rule that mishandling the reins is the prime cause of incidents of the frightening of a horse when motor-cars are about, I wrote to the gallant Field-Marshal, and asked him whether the rule or the exception was to be reported in this case. His lordship, with the ready courtesy for which he is famous, replied at once to my interrogatories, but assures me that "in this case no blame whatever was attached to the driver of the cart."

THIS is satisfactory so far as it goes, and we may all feel sorry for the injured driver who has fallen a victim to the waywardness of his quadruped. The consequences of the accident, however, might have extended to others, including Earl Roberts himself, and one cannot but enquire anew how much longer the use of ultra-nervous or half-broken animals is to be permitted on the roads, and whether some means cannot be found of making horses pass an examination before being driven on the public highways. Of course it is easy to understand how a fairly reliable horse may be slightly fluttered at the sight of something strange, but when an animal becomes absolutely ungovernable the matter is altogether different. Until good reason to the contrary is urged I shall continue to emphasise the point which all automobilists, to my thinking, should insist upon, and that is that when we meet a restive horse its owner has probably had many previous displays of the animal's ungovernable nature, and has no right to expose others—whatever he is inclined to do as regards himself—to the possibilities of accident through its perversity.

HUMAN nature in France appears to be prone to the same weaknesses as in England, where motor-cars are concerned, and despite the length of time that automobilism has been in vogue, there are still to be found those persons who are never so happy as when giving vent to the prejudices in which they are steeped. *La France Automobile* laments this week the fact that a motor-car may be observed proceeding at a moderate pace, and none of the bystanders appear in any way concerned, but that if any unexpected incident occurs the cry of excessive speed is immediately raised. A member of the staff relates an actual occurrence of this sort of which he was recently an eye-witness at Croix de Noailles. He saw a car, coming from Achères, suddenly swerve aside, and at the same time stop by the aid of the brakes, to avoid a cyclist who recklessly crossed the road from a side alley without looking where he was going.

"EIGHTY an hour!" cried a voice in the crowd, which at once surrounded the car. The journalist investigated; he found the car to be a 12 h.p. Panhard, and the change-speed lever was reposing in the second notch. This meant an outside speed of thirty kilometres (eighteen miles)—and the man in the crowd had cried out "eighty!" Small wonder that our contemporary should remark that in every case of accident one ought to place upon the evidence of witnesses "a large—very large—allowance for exaggeration."

Is it not singular that the owners of fast cars in this country have up to now made no attempt to do a rapid journey from John-o'-Groat's to Land's End? A steam car, it is true, has gone over the ground in eleven days, and a small petrol-driven voiturette has done the distance a shade more expeditiously. But these performances are enough to make a cyclist laugh and weep in turn, considering that G. P. Mills rode the distance on a safety in three days five hours and some odd minutes, including the crossing of various ferries. Of trade-assisted record-breaking I have no great opinion, but if an amateur like the Hon. C. S. Rolls, on his 24 h.p. Mors, were to drive right through, a performance might be accomplished which would simply

stagger the public, and impress them with the power of the motor-car in a way that nothing has so far succeeded in doing.

It would be perfectly feasible to observe the *convenances* in the towns encountered on the route, and still complete the distance in remarkable time, for there are long stretches of comparatively deserted, yet finely-surfaced, road, in which the car could travel on its accelerated fourth. Perhaps the speediest way to do the journey would be for the car to carry more than one skilled driver, so that the highest possible speed could be maintained without a strain upon the nerves of one individual, as turns of five hours each, or so, might be taken by the respective drivers. The distance would be rather over 900 miles, as detours would require to be made in order to avoid the ferries. With proper arrangements in advance as to supplies of petrol, water and food, and a careful scheduling of the route, the existing "end to end" record might easily be reduced by one half, and probably considerably more, instead of standing in an apparently unassailable position.

THE way old friends come up smiling in the motor-car world is occasionally amusing; it is certainly unsafe to regard a car as "gone under" by reason of its obsolescence. There was the little "Eureka" car, for example, with only a 2½ h.p. air-cooled motor to carry itself and its passengers. Since the 1,000 Miles Trial we have seen little of it; but lo! it now blossoms forth with a water-cooled motor, of increased power. Then there was the Clément-Panhard voiturette, with its very original type of body and—save the mark—tube ignition. Why did the Commandant Krebs, of Panhard fame, commit this apparently fatal error with a car so light, and therefore so easily overturned?

ERROR or no error, however, the car is again to the fore, but is now the *voiture légère* Clément, and is provided with electric ignition. The affix Panhard is no longer used, but the body is unchanged, in the smallest pattern, at least. Motors of from 4 h.p. to 6 h.p. are fitted, according to the number of seats. Another circumstance to be chronicled in this connection is the vitality of the quadricycle. So under-powered was this type with an air-cooled motor that it seemed doomed to extinction; yet now it is going stronger than ever with water-cooled engines of increased power. Even the great firm of Peugeot Frères are now pushing a four-wheeler, with 2½ h.p. motor, water-cooling, lever for starting from the seat, two-speed gear, easy access to the valves, clutch in the hub instead of crank-bracket, etc. It is put forward as a bid for the populace—*le véhicule démocratique par excellence*.

MESSRS. DUGGUA BROTHERS, of 18, 19 and 20, Raleigh Street, Plymouth, inform us that they now hold a stock of petrol grease, etc., which may be obtained by motorists at any reasonable hour.

FROM Messrs. Davies, Kent, and Stewart, of 41, Berners Mews, W., we have received a revised catalogue of their electrical accessories. We note that prices are in many cases reduced, and discounts increased.

WHILE Lord Roberts was driving in a motor-car near Walthamstow last week the noise caused the horse in a baker's cart to bolt, and the driver was thrown out and seriously injured. Lord Roberts had him lifted into his car, and drove him to the hospital.

A MEETING has been called for Tuesday next, in the Religious Institution Rooms, 200, Buchanan Street, Glasgow, in connection with the proposed establishment of a branch of the Automobile Club for the West of Scotland. The Right Hon. Sir J. H. A. Macdonald will preside, and everybody interested in the movement is cordially invited to attend.

THE motor-car which Mr. Arthur Vernon, of Amersham Hill, Bucks, purchased at the recent Exhibition appeared in the streets of the town on several occasions last week, and excited a good deal of interest and admiration. On Thursday of last week Mr. Vernon took the Mayor (Mr. Walter Birch) and one or two other gentlemen for a short trip on the car in the direction of West Wycombe.

AN IMPORTANT TRADE MEETING.

ON Tuesday last at the Automobile Club, with Sir Edward Jenkinson in the chair, a meeting was held to consider the future of automobile shows, as regards the number to be held annually in London, the place or places, and management of such shows. Incidentally it may be mentioned that at a meeting of the Automobile Protection Association held at the Agricultural Hall during the recent Motor-car Exhibition, the subject was discussed by a large and representative body of those principally interested as exhibitors. On that occasion there was absolute unanimity in favour of a resolution passed recommending that only one exhibition be held annually, and the one exhibition be held as heretofore—under the control of the Automobile Club (managed by Mr. Charles Cordingley)—and at the Agricultural Hall. To appreciate the present situation, it must be understood that owing to the growing interest taken in the motor-car movement there are now some half-dozen exhibitions about to be exploited, one being that of the Crystal Palace and Motor Traders' Co-operative Show, billed for February next, at the Crystal Palace. Though the manufacturer, who is principally concerned, realises the advantages which undoubtedly accrue from a well-organised and well-managed show, he is for obvious reasons indisposed to patronise each and every exhibition proposed. On the other hand, he is fully alive to the fact that he may lose ground by not being represented at some quite unimportant exhibition. It was in the hope of arriving at some definite and combined action in the matter of future shows that the Automobile Club called the meeting of automobile manufacturers and agents, who gathered to the number of some fifty on Tuesday last; but unfortunately with no definite result, beyond a spirited discussion, and the disclosure of some interesting facts concerning previous shows. On the motion being put to the meeting at an early stage—"That the manufacturers and agents here represented recognise that the Automobile Club held the first purely automobile exhibition in this country, has been, and is, the recognised authority to hold trials of motor-vehicles, and to give certificates therein, has rendered, and is rendering great service to the automobile movement of this country, they therefore consider the Automobile Club the proper authority to control exhibitions in this country, and seek that the Automobile Club should continue that control," there arose a dissenting voice. The owner of the dissenting voice objected to the word "control" on the ground that it was not fit or proper for a collection of business men exhibiting at a show to be controlled by a sporting club. An amendment which substituted the milder term "supervision" for the offensive word "control" was accepted. Mr. Friswell, who spoke strongly in favour of but one show, and that on the lines of the last, moved, "For one yearly exhibition only, to be held at the Agricultural Hall, under the present management, and under the patronage of the Automobile Club," and stated that he held twenty-one proxies in favour of his motion. Mr. Johnson also mentioned that as Secretary to the Automobile Club he had on the table over thirty letters from members who were unable to attend the meeting, expressing the same wish as to future shows. The question of proxies led to a division, resulting in their disqualification by a very small majority. Though attention was called to the fact that no less than six gentlemen voted for one firm represented, the count of hands held good. Proxies being voted out of order, an adjournment with a view to enabling interested parties, absent on that occasion, to vote at a future date was mooted. Further discussion of the various aspects of shows, past and projected, arose, in the course of which Mr. Johnson stated that the first Automobile Exhibition was held in this country by the Automobile Club, and resulted in a loss of £1,700. Since Mr. Cordingley had undertaken their organisation and management he had paid the Club £200 a year for its patronage, and it was hoped by this means to ultimately wipe off that loss. Mr. Cordingley stated that the first of the shows held under his management at the Agricultural Hall had resulted in a loss to him, the

last in a small profit; also that he had entered into a contract with the owners of the Hall to hold shows there annually for some years. On the question of the Club's liability to Mr. Cordingley, Mr. Staplee Firth stated that it had entered into a contract for one show a year, terminable at six months' notice on either side. There were four more years to run. The offer of a share in the profits made by the promoters of some of the proposed shows to intending exhibitors appeared to appeal to some present, but the possibility of profits accruing to unknown and unproved organizers was generally doubted. Mr. Johnstone, of Messrs. Lucas, called the attention of the meeting to the fact that the promoters of the National Show had, when approaching him on the subject of exhibiting there, stated that the Daimler Company and Motor Manufacturing Company had already secured their stands. Speaking on behalf of the Daimler Company, Sir Edward Jenkinson said that the statement was absolutely false, and Mr. Gretton denied the statement as far as the Motor Manufacturing Company was concerned. Mr. Sturme expressed an opinion that at future meetings to discuss shows, only manufacturers of and agents for motor-cars should be represented. Makers of parts and accessories would, he was sure, exhibit where the complete cars were to be seen. Finally, a long discussion was brought to an end by a resolution to postpone the meeting till such a date as the Automobile Club might fix, and a vote of thanks to the Chairman.

A NUMBER of summer resorts in America are planning automobile floral parades among their new attractions.

MR. CYRIL OWEN, of Bishop Street, Coventry, has secured the Midland agency for the Locomobile steam cars.

MR. D. H. CHALK, High Street, Fareham, is now keeping a stock of petrol. He is also able to undertake any necessary repairs.

THE Canadian Post Office Department has purchased two motor-vehicles, and will use them for collecting the mails in Ottawa.

THE British and Colonial Motor-Car Company, Limited, have taken up the sole agency for Europe for the "Ophir" steam car described in our last issue. Samples of the car can be seen at the company's depot at 14, Baker Street, W.

THE Board of Agriculture has notified the appointment of one of its inspectors, Mr. A. E. Brooke-Hunt, as its representative at the forthcoming Trials of motor-vehicles for heavy traffic. This makes the fifth Government Department which will be represented.

FROM Messrs. Morgan and Wright, of Chicago, U.S.A., we have received a clearly illustrated booklet containing instructions for the simple process of fitting their solid rubber vehicle tires to the wheels of motor-cars. Tools and appliances required are comparatively few, and their method is certainly worth consideration.

THE American Daimler Manufacturing Company, at Steinway, N.Y., which has heretofore confined its motor-vehicle output to delivery wagons, announces that it will produce during the coming summer a Mercedes type touring carriage with 16 h.p. motor equipment, and capable of a sustained speed of forty miles per hour.

THERE is a good opening at Warsaw for an india-rubber tire for carriages which will not splash as the ordinary tires do, especially on wood pavement. If the municipality can get hold of a really non-splashing tire which fulfils also other necessary conditions as to cost, etc., they will, according to a consular report, make its use obligatory.

FOR the first time, the Australian Royal Agricultural Society this year included motor-cars at its show, held at Sydney. Eight cars and three tricycles competed in the arena, the highest prize being given to a Renault voiturette. The Woods and the Winton Automobile Companies, of America, secured several medals, including one for the best and most varied display. A first award was won by the Austral Cycle Agency in the motor-cycle class for a De Dion tricycle.

THE Motor-Car Exhibition at the Agricultural Hall.



(Continued from page 207.)

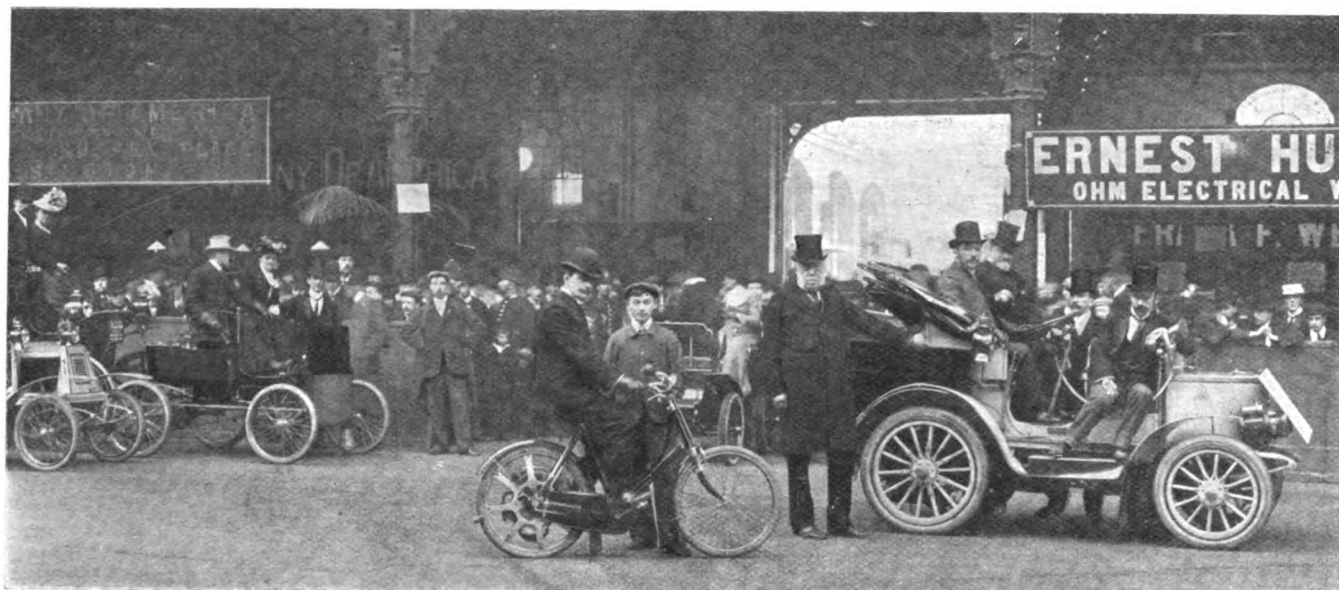


Photo by]

THE ENTRANCE TO THE ARENA.

[Argent Archer.

THE International Motor-Car Company, of 76, High Street, Marylebone, London, W., was another concern making a very large display. In addition to three or four of their well-known International cars on Benz lines to seat two and three persons, the company showed several of their "Charettes." To deal first with the former, we noticed a 4 h.p. two-seated phaeton having belt transmission and three speeds, and a $3\frac{1}{2}$ h.p. four-seated doctor's car on similar lines, but having three speeds and a reverse motion. Close by was a 6 h.p. four-seated phaeton; the motor has two opposite cylinders, the pistons of which work on to a common crankshaft; and the cranks work in an oil-containing case. Three speeds, by means of belts working on fast and loose pulleys, are provided, as also a reverse motion. A feature worthy of notice is the arrangement of the pedal controlling the hand brakes, the belts being all shipped on to the loose pulleys on the application of the brakes. The car is fitted with cycle-type wheels and solid rubber tires. Steering is controlled by a hand-wheel, so placed that the driver may sit either on the right or left side. The car, which weighs complete about 14 cwt., can attain a speed of twenty miles per hour. The International Company also staged several of the "Charette" cars, which appear to be meeting with a good reception at the hands of motorists. One of the cars was a three-seated "Spider" fitted with a $3\frac{1}{2}$ h.p. vertical engine, similar to that already described in the *Journal*. They have, however, recently introduced a car on similar lines, but fitted with a vertical engine, having a cylinder 4 in. diameter by 4 in. stroke, and developing 5 h.p. The motor is provided with electrical ignition, and has a water-jacketed cylinder, the circulation being on the thermo-syphon system with radiator. Two speeds forward and a reverse motion are provided, the power being transmitted from the motor (placed under a bonnet in the fore-part of the frame) by belts to a countershaft at the rear, and thence by gear wheels to the back live axle. The reverse motion is obtained by a slack belt, which can be tightened at will by the depression of a jockey pulley. The road wheels are of the cycle type, shod with pneumatic tires; ample brake power is provided, while the

steering is controlled by a horizontal hand wheel, around the column of which the various control levers are grouped. The motor-bonnet is hinged so that it can be lifted up to give ready access to the motor and its connections. Storage accommodation for water and petrol sufficient for an eighty-mile run is provided, and the car, which weighs complete about 8 cwt., can attain a speed of thirty miles per hour on good roads. Altogether, the International Company made a business-like show, and the way one of their "Charettes" was handled in the arena by a lady attracted a good deal of notice.

Steel channel frames for motor-cars exhibited by Messrs. Rubery and Co., of Darlston, combine lightness with strength. Specimens of channel sections, bent to every conceivable angle and curve, were also on view. A complete voiturette frame constructed on this principle has light steel angles for the body, and sides of woven corrugated brass wire, nuts and joints being conspicuous by their absence throughout. The "Castle" lock-nut is an ingenious contrivance which enables a pin to pass through the top of the nut and thus hold it in place. The stand was an interesting one, more particularly to the makers of motor-vehicles.

Some handsomely-finished cars were to be seen on the stand of the Progress Cycle Company, Limited, Coventry, foremost among which was a four-seated car with Mulliner body and hood. The motive power is supplied by a De Dion $4\frac{1}{2}$ h.p. water-cooled motor; a water-circulating pump and radiator being fitted. Two speeds are available, the car being able to attain a speed of twenty-two miles per hour. Steering is controlled by a horizontal hand-wheel, while the cycle-type road wheels are shod with 3 in. Dunlop pneumatic tires. In running order the car weighs about $6\frac{3}{4}$ cwt. Close by was a car of similar construction fitted with two speeds forward and one astern. The front seat of this car is pivoted, so that it can be reversed to enable all the passengers to sit facing forward or *vis-a-vis* fashion. The radiator in this car is fitted in the fore-part of the frame, and close to it is the water tank, which has a capacity of $4\frac{1}{2}$ gallons. Travellers should be interested in this car, which has been specially designed for their use, provision being made for the carrying

of a portmanteau at the front and also one at the back. The front one can be removed and a seat fitted in its place. The car is driven by a $3\frac{1}{2}$ h.p. water-cooled De Dion engine which gives a speed of twenty-four miles an hour. The exhaust on this car is claimed to be more silent than that of any steam car, the principle on which it works being quite novel. It forms a scavenger and increases the power of the engine 25 per cent., forming at the same time an absolutely silent exhaust. Another feature is the ease with which the motor can be started. We having set the engine going by merely a half-turn of the handle. The Progress Company also exhibited an example of the new two-cylinder vertical motor made by the Forman Motor Manufacturing Company, of Coventry. The engine, which is built on the Panhard and Daimler principle, is guaranteed to give 6 h.p. on the brake running at a speed of 850 revolutions per minute. The bore of the cylinders is 80 mm. by 110 stroke; the engine is fitted with a patent automatic oil feed. Manganese bronze bearings are fitted in the crank chamber, and anti-friction metal in the connecting rods. All working parts are hardened, and every part is made interchangeable to standard, so that there is no trouble in refitting parts. The engine can be fitted with electric or tube ignition, or both. The Forman Company have just taken over the old Simplex Gear Case Works, in Day's Lane, Coventry, and are laying down a plant to turn out the Forman motor in large quantities.

One of the largest, and certainly one of the most varied, displays was that of the Autocar Supplies, Limited, 66, Great Russell Street, Bloomsbury, London, W.C. The first vehicle met with was a nicely finished Renault car, with *tonneau* body, and $4\frac{1}{2}$ h.p. water-cooled De Dion motor. Adjoining was a Milwaukee steam car, which has already been described in another part of our Show report. A new steam-car was to be seen in the Britomobile, the boiler of which is fitted with a burner for the consumption of ordinary paraffin instead of petrol, and a patent condenser for returning the condensed water to water-tank. A car of French construction, new to this country, is the Malliary, of which a *chassis* was shown. There are a number of interesting points in the vehicle, [but as we hope to deal with them in a later issue we will only remark that it is fitted with a single vertical cylinder water-cooled engine, of $5\frac{1}{2}$ h.p. Three speeds forward and reverse motion, controlled by one handle, are available, the power being transmitted from the gear box by a longitudinal shaft and bevel gear to the live back axle. The Autocar Supplies, Limited, are introducing the Vinot-Deguingand car into this country under the name "La Silencieuse," and had an elegantly finished *tonneau* (Fig. 1) of this type on their stand. As a very complete description of this vehicle was published in our issue of January 19th last only a few particulars need now be repeated. The motor is of the two-cylinder vertical type, and is made in two sizes—5 and 7 h.p. The cylinders in the 5 h.p. engine have a diameter of 85 mm., the stroke being 130 mm.; the 7 h.p. engine has 84 mm. cylinders, by 161 mm. stroke, the normal speed in both cases being from 750 to 800 revolutions per minute. The inlet and exhaust valves are contained in the same casing, one above the other, in such a way as to be readily accessible. Both the cylinders and the explosion chamber are water-jacketed. The circulation is maintained by a small pump and radiating coil. Dynamo electrical ignition is employed. The engine is located under a bonnet in the fore part of the frame. On one end of the motor-shaft is carried a wide pulley, the power being conveyed by a single belt to a fast and loose pulley on a short countershaft at the rear of the differential shaft. Four speeds forward and a reverse motion are provided. The variable speed gear consists of a train of spur wheels on the countershaft, any one of which can be made to mesh with corresponding pinions on the differential shaft. The variable gear, which is controlled by a single hand lever at the driver's side, works in an oil-containing case of aluminium. From the differential shaft to the rear axle the power is conveyed by the usual duplicate set of sprocket wheels and chains. Provision is made for taking up any slack or wear of the latter. No friction clutch

is employed, the motor being thrown out of gear by means of a foot-pedal, the depression of which ships the driving belt on to the loose pulley. A foot-pedal actuates a band brake on the differential shaft, while there are band brakes, operated by a hand lever, on drums attached to the hubs of each of the rear wheels. Steering is controlled by an inclined hand-wheel, while the wheels are of wood, 32 in. diameter, shod with pneumatic tires. The 5 h.p. car weighs complete about 10 cwt. Another car new to England, but which has become very popular in France, is the "Hautier" (Fig. 4). This vehicle is very similar in general respects to the Renault and Darracq, the motor being placed under a bonnet in the fore part of the frame, the crankshaft and change-speed gearing being set at right-angles to the axles, and the power transmitted to a "live" rear axle by a universally-jointed longitudinal shaft. The main differences between the Hautier carriage and other makes of this popular type are to be found in the motor, the clutch mechanism, the universal joints, and the steering gear. The frame of the car is made of channel steel forged in one piece, bent to the desired shape and welded. The cross-tubular stays carrying the mechanism are welded to square ends, which slide into the grooves where they are bolted, and, while giving the necessary rigidity to the frame, the cross pieces can be easily removed with the machinery. The motor (Fig. 2), is of the vertical two-cylinder type. Above each combustion chamber there is a secondary chamber, V, of about one-third the volume. The secondary or expansion chamber is closed at the top by a milled head, which can be easily removed. In the centre of this fits a small cylindrical valve, X, kept under tension by a spring which acts upon it underneath. The cylindrical valve is connected by a rod with the valve which closes the bottom of the explosion chamber. The valves are operated by a cross piece which presses equally on the top valves by a rod and cam. When, therefore, the rod is in a vertical position, the cam presses down the cross piece and closes the top valves and opens the bottom ones, thus putting the secondary chambers into communication with the main combustion chambers. By pulling down the rod the cross piece rises under the action of the springs, the top valves open to allow of the products of combustion escaping, and the bottom valves close. In this way the compression in the cylinder can be varied at will. When the valve is closed the compression in the combustion chamber of course reaches its maximum, but when both chambers are put into communication it is attenuated by about a third. Both tube and electric ignition are fitted, and to explain the effect of the varying compression the action of the gases in an incandescent tube requires to be recalled. When the products of combustion are expelled from the cylinders there is always a certain quantity of burnt gas in the tube, and a fresh charge cannot be ignited until it has been sufficiently compressed to force the burnt gases into the end of the tube, so that the fresh explosive mixture may reach the hot metal. By varying the compression it will be obvious that the time when the fresh charge reaches the hot end of the tube may be advanced or retarded, this being possible by means of the secondary compression chamber. M. Hautier claims that his motor will run at any speed from 1,000 to 1,500 revolutions a minute, and that the power of the two-cylinder engine can be varied from four and a half to seven horse-power. Another point of interest in the motor is the mechanism for operating the exhaust-valve rods, A. A cam, G, engages with a rocking part, E, and causes it to move backwards and forwards as the projection on the cam comes into contact with each of the small rollers on the rocker. A similar motion is imparted from this rocker to a lever D, which is pivoted between the two valve rods, and which alternately lifts the one and the other of these. Coming now to the transmission gear, immediately behind the motor are the friction clutch, the progressive speed gear, and the change speed gear. The last named is composed of two trains of fixed and loose spur wheels. They are always in mesh, and are arranged for three speeds forward and a reverse motion. The loose wheels are keyed by sliding clutches, and in order to avoid any noise and shock in keying the wheels, and, at the same time, obtain any intermediate speed, M. Hautier has applied his progressive gear. Just in front of the gear box the shaft carries a

pinion running between two satellites which gear into the toothed inner circumference of a drum. The principle consists in graduating the speed of the shaft by resistance on the drum by means of a band brake. When there is no resistance on the drum the shaft turns at a normal speed, but by gradually increasing the resistance the speed of the shaft is lowered, and

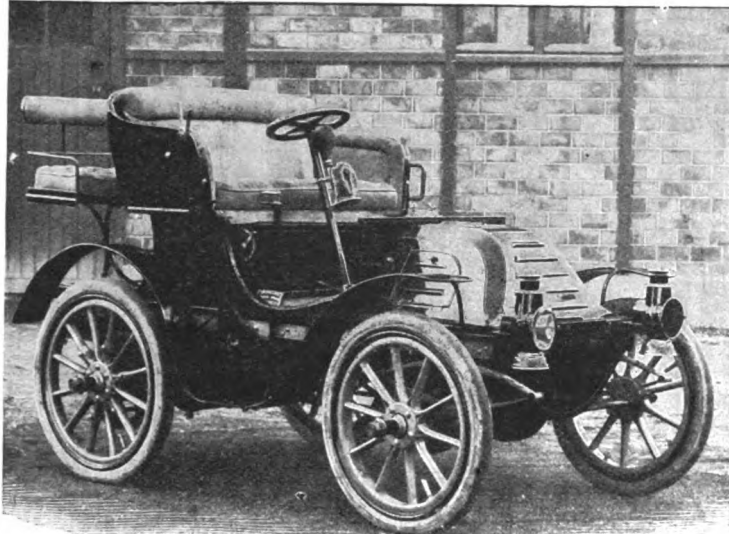


FIG. 1.—“LA SILENCIEUSE” CAR.

stops when the resistance on the drum is equal to that on the shaft. In a word, it serves exactly in the same manner as a band brake, with the difference that the intervention of the satellites greatly diminishes the periphery speed of the drum as compared with the diameter of the shaft pinion. There is thus

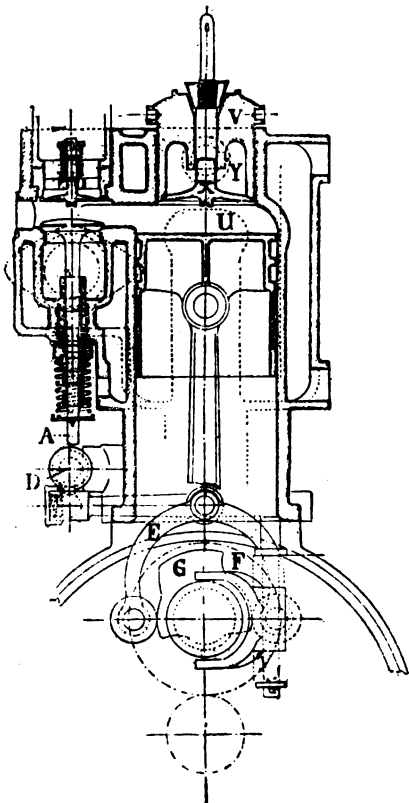


FIG. 2.—SECTIONAL ELEVATION OF HAUTIER MOTOR.

comparatively little friction and an absence of any liability of the band brake on the drum becoming hot. The loss of power through such friction is also a negligible quantity, because, as the brake is applied, the motor slows down, and there is consequently no waste of energy. The advantage of being able to

brake upon the change speed shaft by a system which allows of what may be termed an elasticity in resistance, without wear and tear upon the parts, and with no appreciable loss of power, is seen in the fact that the speed of the shaft can be graduated as desired between any two fixed speeds until the sliding clutch falls easily and quietly into the

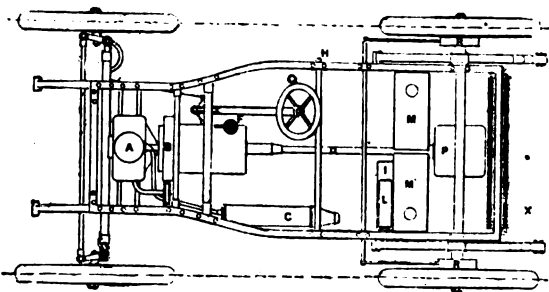
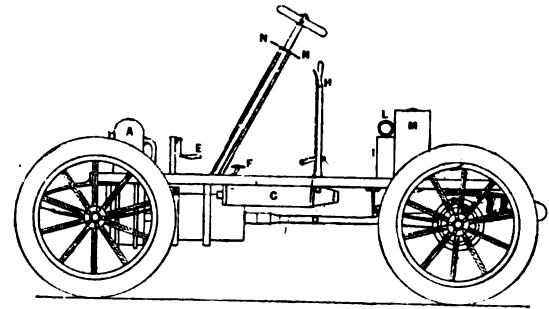


FIG. 3.—PLAN AND ELEVATION OF HAUTIER CAR.

loose wheels. There is also the further merit of permitting the vehicle to travel at any intermediate speed. Power is transmitted from the change speed gear to the balance gear on the rear axle by a shaft carrying at each end a connection of square section and tapering away slightly from the middle. The largest section fits easily into the square ends of the change speed shaft and the balance gear shaft, which receive it. But as

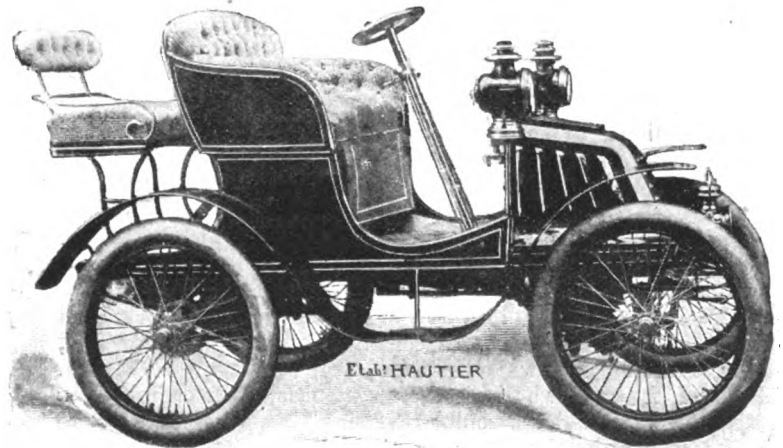


FIG. 4.—THE HAUTIER CAR.

the connection curves away from the centre it is free to move at a large angle each way. This angle is much bigger than is possible with the usual universal jointed shaft, while the system has the further advantage of allowing the shaft to be easily taken out in a few seconds. The water and petrol tanks are carried underneath the seat, and the radiator is placed behind so as to get the full benefit of the air which rushes in at the back of the vehicle. The steering wheel is mounted in such a way that it may be inclined to any angle to suit the driver, and fixed to that position by a bolt. The relative positions of the parts are seen in Fig. 3, where A is the motor, B is the progressive clutch (worked by the pedal, F), C the exhaust box, D the jointed shaft between

the change gear and the differential gear, P, M, and M' the water and petrol tanks, and R the side band-brakes. The motor and transmission gear being mounted on an independent frame, any type of carriage can be fitted. Fig. 4 shows a spider with 32 in. wood wheels and pneumatic tires. Another new petrol car is that known as "La Comfortable." This is fitted with a 8½-h.p. single-cylinder motor running at 900 revolutions per minute. Four speeds and reverse are fitted, the transmission being effected by a universally jointed shaft and bevel gearing to the rear axle. Of motors, samples of the "Abeille," "Buchet," and Aster were shown, while a special feature is being made by the company in supplying bodies of all types. Amid a big array of Ashton valves and other fittings for steam cars we noticed a new non-float feed carburettor to which we hope to refer in an early issue.

One of the leading attractions in the Minor Hall was the travelling caravan "Quo Vadis," exhibited by Messrs. Turgan and Foy, of Rue Carnot, Levallois, Paris. The vehicle, of which we give illustrations in Figs. 5 and 6, has, as is well known, seen much travel, having been taken by M. Turgan across France, and afterwards for a long tour in Algeria. The caravan is a very complete affair, fitted up complete with electric light, cooking arrangements, sleeping accommodation for two persons,



FIG. 5.—THE TURGAN-FOY STEAM CARAVAN.

and other conveniences. The frame, which is of strong construction, is carried by springs upon the front and rear axles. It is fitted with a cab in front, and the vertical boiler is placed between the driver and the main body of the car. The boiler (Fig. 7) has 10 square metres heating surface, and weighs about 13 cwt. The working steam pressure is 210 lbs. per sq. in. Coal is used as fuel, 6 cwt. being carried in bunkers at the front, said to be sufficient for a run of 60 miles. The water-tank has a capacity of 600 litres of water, which will run the vehicle for a distance of about 20 miles. A couple of feed-pumps are provided, as also an injector, while there is a large condenser on the roof. Each of the rear wheels is driven by means of a chain from a separate compound horizontal reversing steam-engine, access to which is afforded by doors on the sides of the vehicle. The cylinders are respectively 90 and 170 mm. bore by 120 mm. stroke. The normal engine speed is 600 revs. per minute, the engines developing 22 h.p. each. By this arrangement no mechanical change-speed gear is necessary, while, should one of the engines break down, the other is sufficient to propel the car home. The complete vehicle weighs about 4½ tons loaded. The maximum speed obtained from trials has been fourteen miles per hour. At a speed of ten miles per hour the vehicle has ascended a gradient of 7 per cent. Hand and pedal brakes are fitted, steering is controlled by a horizontal hand-wheel, the road wheels are of strong artillery type, with wide steel tires. We now come to the Turgan-Foy light cars (Fig. 8) of which three were shown—a 6 h.p. four-seated "Limousine," a 6 h.p. three-seated spider, and a 4½ h.p. three-seated spider.

The small engine has air-cooled cylinders with water-cooled heads, while the 6 h.p. motors have water-cooled heads; otherwise the general arrangement of the cars is identical, so that one description will suffice. First of all we have a two-cylinder motor placed under a bonnet in the fore part of the frame, and as this engine differs in many respects, both as regards construction and pose, from the ordinary type of petrol motor, a few brief details concerning it may not be out of place. The

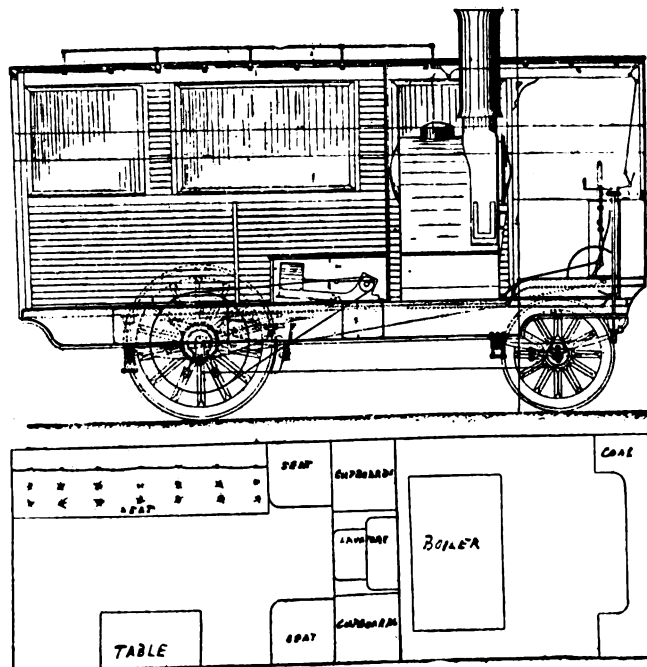


FIG. 6.—SECTIONAL ELEVATION AND PLAN OF TURGAN-FOY CARAVAN.

two cylinders are horizontal and are disposed end to end, the crank shafts being vertical. Each piston works upon a separate crank shaft, both of which gear with a common central shaft, which they drive at half their own speed. The central vertical shaft carries a large fly wheel of the cycle wheel type, with heavy rim. By this disposition the constructors claim to have largely overcome the vibration difficulty, and the absence of the usually-employed horizontal crank shaft certainly saves the carriage springs from the jar arising from each downward impulse of the piston. Electric ignition is adopted, while the water

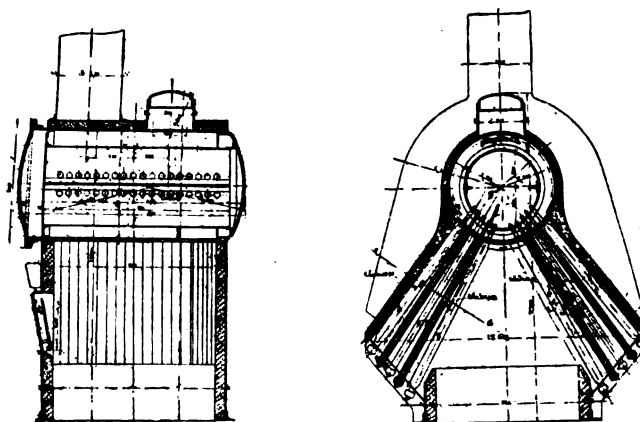


FIG. 7.—THE TURGAN-FOY BOILER.

circulation is maintained by a pump and radiator. The normal speed of the motor is 800 revolutions per minute. The engine transmits its power by bevel gearing to the clutch shaft, which is in the centre line of the car. The clutch, of which a section is given in Fig. 9, is of a special kind. The spring tends to wedge the two shells against the casing. To disengage

the clutch the collar to the right is moved longitudinally along the shaft into the position shown, acting against the spring. Four speeds forward and reverse are provided, the change speed gear being of the Panhard type. The counter-shaft from the gear box is connected by bevel gearing to a cross-shaft from which two chains, one at each side, transmit the power to the differential rear axle. A section of the combination

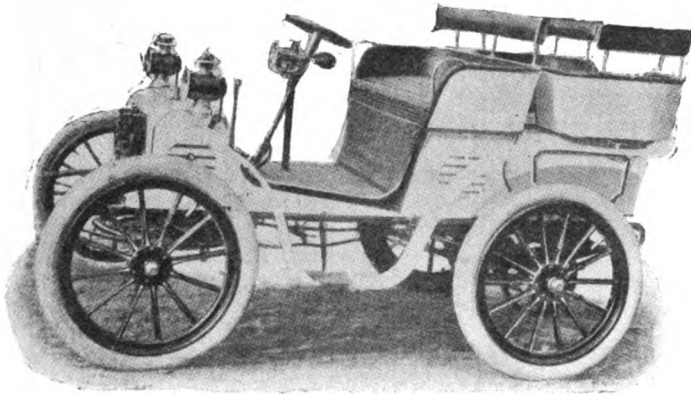


FIG. 8.—THE TURGAN-FOY TONNEAU.

double-acting band brakes and differential gear is given in Fig. 10, from which it will be seen that the chain wheels are fixed to the sleeves carrying the planet wheels. The lever, seen at the bottom, can be made to draw the two arms together; these are pivoted and act upon the brake shells, thus causing them to retard the planet wheels when the brake is applied. Steering is controlled by an inclined hand wheel, while provision is made to start the motor from the driver's seat. The frame of the car is built up of steel tubes; the wheels are of the artillery type shod with pneumatic tires. The 6 h.p. car weighs between 10 and 11 cwt., and can attain a speed of thirty miles per hour.

Messrs. Roots and Venables, of 100, Westminster Bridge Road, S.E., had on view their well-known heavy oil motor-car. This is a two-seated vehicle, fitted with 3 h.p. horizontal motor using ordinary petroleum oil, in contradistinction to petroleum spirit. The cylinder is water-jacketed; the storage tanks having a sufficient capacity for oil and water for a journey of about five hours. Two speeds are provided—two and fourteen miles per hour. The countershaft is chain driven, while the connection between the countershaft and the rear road axle is also by chain gearing and friction clutches. The low-speed chain is provided with a spring jockey wheel to take up

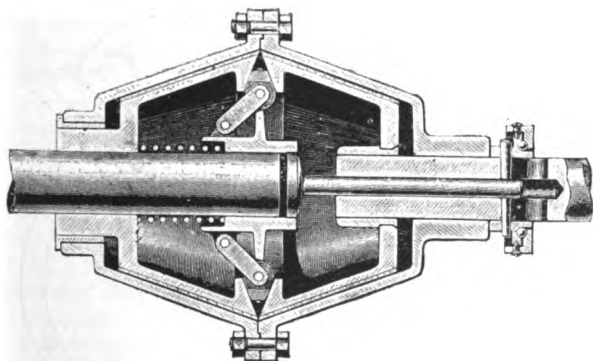


FIG. 9.—SECTION OF DOUBLE CLUTCH.—TURGAN-FOY CAR.

any slack, while for a similar purpose the rear axle is so arranged as to be capable of being moved on the springs. A feature of the Roots' car is the water condensing coil, which consists of a series of copper tubes fitted round the fly-wheel in such a way that the latter works within the coil. The car weighs, complete, about 6 cwt., and is fitted with cycle-type wheels and solid rubber tires.

Heavy petrol-vehicles formed the exhibit of Messrs. G. F. Milne and Company, Limited (Motor Department), Balderton Street, London, W. At one end of the stand was a portable petrol or alcohol motor of ten h.p. suitable for driving threshing machine and other farming machinery. The engine, a single cylinder one of the horizontal type, is fitted with Simms-Bosch magneto ignition, and will appeal to agriculturists in countries where

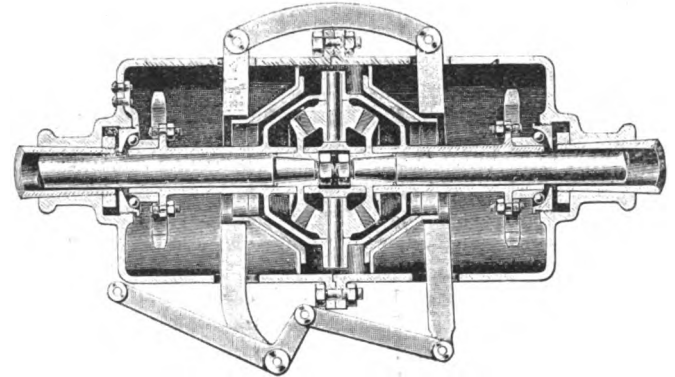


FIG. 10.—SECTION OF REAR DIFFERENTIAL AXLE.—TURGAN-FOY CAR, SHewing DOUBLE BAND BRAKE.

coal is difficult to obtain. Next we saw a couple of two-ton lorry frames of strong construction mounted on artillery wood wheels with iron tires, driven by an 8 h.p. vertical two-cylinder motor set in the fore-part of the frame. The engine is fitted with Simms-Bosch ignition, and provided also with a marine-type cooler and induced draught provoked by means of a fan driven off the engine-shaft in the rear of the cooler, only a half-gallon of water being carried. The change speed gear is on the Daimler or Panhard system, the longitudinal shaft extending to the rear of the frame, where it drives by bevel gearing a cross shaft, on the end of which are pinions gearing with internally toothed wheels bolted to the rear road wheels. The countershaft, differential gear, etc., are carried on an auxiliary radius frame depending from the frame proper. The braking power of these two vehicles is particularly efficient, taking the form of a double block locomotive brake on the driving-shaft, and two screw-down block brakes on the tires of the rear wheels.

Naturally considerable interest was evinced in the exhibits of Messrs. Panhard and Levassor, which were to be found in the Minor Hall. They were content to show two carriages, both of which were of the highest order of workmanship. The graceful

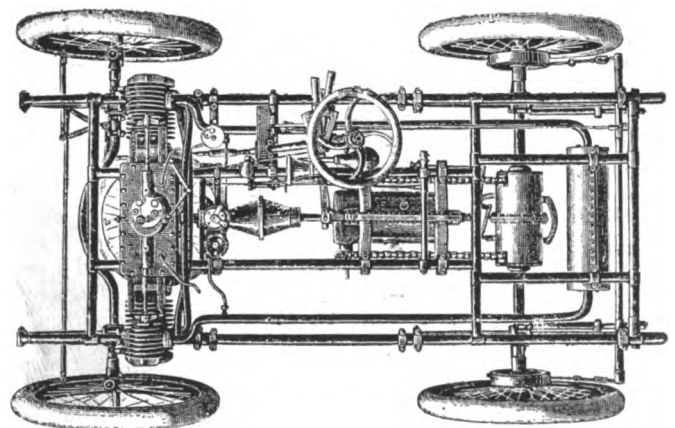


FIG. 11.—PLAN OF TURGAN-FOY CAR.

outlines of the cars and the fine finish were certainly noteworthy. The 7 h.p. light carriage is of the standard type, with a balanced two-cylinder motor, water-cooled by means of a pump and a radiator in front of the bonnet. There are three speeds and reverse all actuated by one lever, and a foot-brake on the differential acting whether advancing

or reversing. The band-brake on both rear wheels is operated by means of a lever. The steering is non-reversible with worm gearing. Electric and tube ignition are provided. The carriage body is also by Panhard, and is upholstered in dark green padded morocco. The dark green woodwork picked out with white lines is smart and artistic in effect, and altogether the car has a most taking appearance. The other vehicle exhibited was an 8 h.p. Panhard, on the firm's well-known lines, with *tonneau* body. There is plenty of room for passengers and baggage—an important point to which some makers hardly give the care in design that would be welcomed by users.

A couple of interesting cars were shown by the Metropolitan Motor Manufacturing Company, Ltd., of 116, Bayonne Road, Fulham Cross, Hammersmith, W. To deal first with the two-seated car, the features are to be found in the motor and the simple transmission gear. The frame (Fig. 12), which is constructed of channel steel, is supported on the axles by semi-elliptical springs. The rear axle runs in Mossberg roller bearings. The motor (Fig. 13), which is carried under the bonnet in the fore part of the frame, consists of two separate vertical cylinders which practically form two distinct motors. Each cylinder is cast in one piece with its water-jacket, and with a projecting flanged bracket. The crank chambers are made open at their external sides, but are fitted with cover plates which allow of easy inspection. The cylinder covers consist of flat plates which are provided with inlet and exhaust valves. The valves are thus in direct communication with the cylinders. The covers are secured in place upon the cylinders by bolts, and

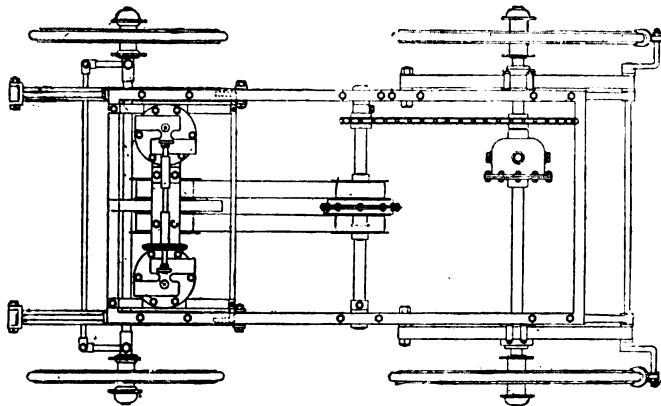


FIG. 12.—PLAN OF METROPOLITAN MOTOR MANUFACTURING COMPANY'S CAR.

can be taken off by merely slackening the bolts. A cam-shaft is mounted in bearings above the cylinders, and it carries cams which press directly upon the caps of the exhaust valves. The inlet valves are operated automatically in the usual manner. Variable electrical ignition is employed, a shaft carrying a cam which makes and breaks the primary circuits of the induction coils. The upper cam-shaft is driven by two pairs of bevel wheels, through an intermediate vertical shaft, from the crank-shaft. In order to render this gear silent, a raw-hide wheel is used on the lower end of the vertical shaft and the bevel wheel on the cam-shaft is composed of mahogany with a metal boss and metal-toothed ring. The crank-shafts are coupled together by a central fly-wheel, on each side of which is fitted a belt pulley. The diameter of the cylinders is $3\frac{1}{2}$ inches, the stroke being 6 inches. The motor develops from 7 to 8 h.p., the normal speed being 750 to 850 revolutions per minute. The cylinders are water-jacketed, the circulation being maintained by a pump. The general arrangement of the transmission is shown in Fig. 12, while Fig. 14 gives a side view of the variable-speed gear. A rocking lever, which carries a pulley in bearings at each end, is mounted freely about the counter-shaft. One pulley is placed on each side of this rocker, and these two pulleys are connected by belts with the two pulleys on the motor shaft. Each of the rocking pulleys is attached to a pinion wheel, both pinions being continually in mesh with a toothed wheel keyed to the counter-shaft. The pinions connecting the two pulleys to the counter-shaft have different gear ratios, so that when one pulley is working the counter-shaft is driven at twice the

speed obtained when the other pulley is transmitting the power. The belts are of such a length that both are

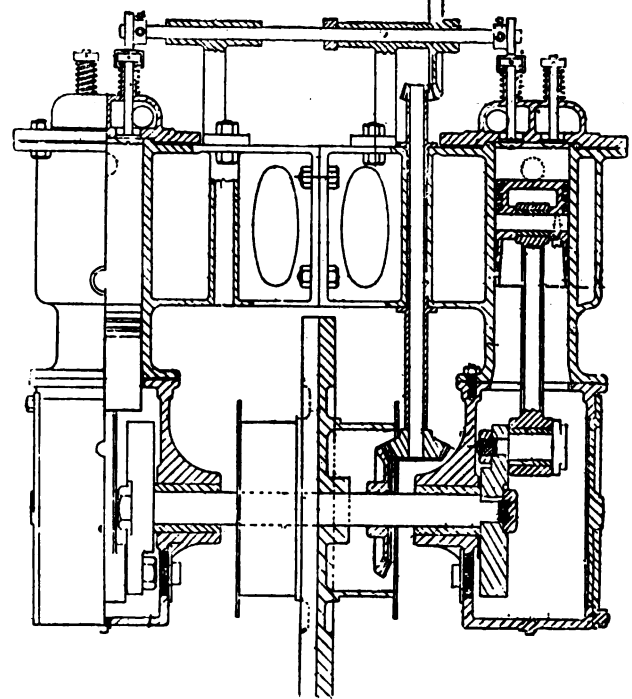


FIG. 13.—SECTIONAL ELEVATION OF METROPOLITAN MOTOR MANUFACTURING COMPANY'S MOTOR.

slack when the rocking pulleys are in their mean position. In order to tighten either belt, it is only necessary to

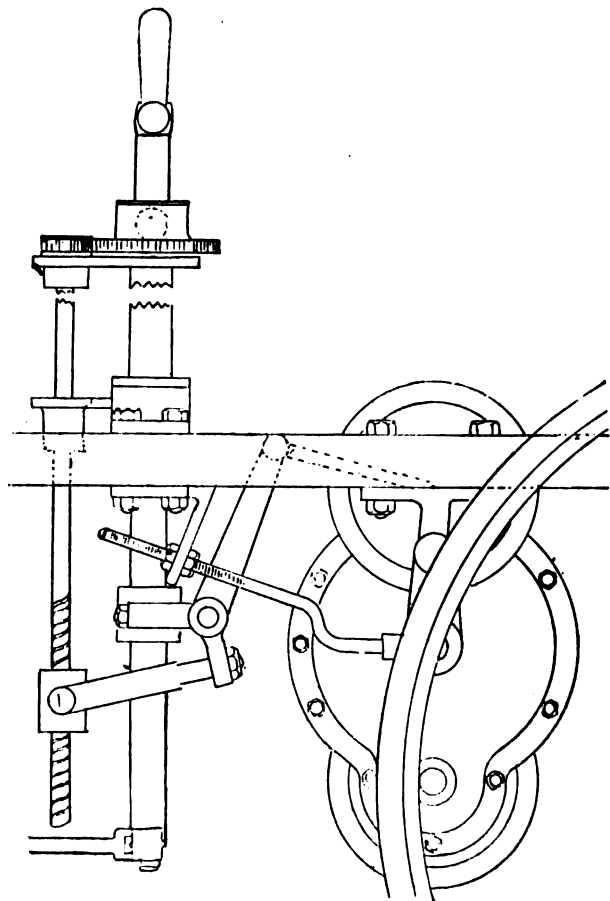


FIG. 14.—THE METROPOLITAN MANUFACTURING COMPANY'S CHANGE SPEED GEAR.

rock the lever about the counter-shaft, which is done by a system of levers and a screw shown in Fig. 14, the driver rotat-

ing a concentric sleeve about the steering pillar, in one direction or another, according to which speed he requires. The gearing is easily manipulated, and a point to which attention is drawn is that any reasonable stretching of the belts does not interfere with its action. Either of the belts can easily be taken up when required, since they can be brought out in front of the car after they have been shipped off the rocking pulleys. The rocking lever in reality consists of a gear case which completely encloses the gear wheels. From the countershaft a single chain transmits the power to the rear differential axle. The road wheels are of the cyclo type, 36 in. and 28 in. diameter, and are fitted with solid rubber tires. The car complete weighs about 12 cwt. The second car was fitted with a roomy *tonneau* body, the back part of which is built high. The engine is of the same power and type as above described; generally speaking the transmission mechanism is on similar lines, but slight modifications have been introduced. Two speeds forward and a reverse motion are provided, and these can be instantly thrown out and the engine disconnected by slackening the driving belts. From the countershaft a couple of chains transmit the power to the rear axle. Inclined wheel steering, two pedal brakes, cycle type wheels, and solid rubber tires are other details of the car, which can attain a speed of twenty miles per hour and which weighs complete about 14 cwt. A part of this stand was occupied by the Creese Motor Starter Company, Ltd., of Blenheim Grove, Peckham, S.E., who exhibited a car the Daimler motor of which was fitted with their electrical starting gear. As we hope to deal with the arrangement at length in a later issue, we will only mention that by means of the device the driver of a motor-car fitted with an engine having two or more cylinders can, without leaving his seat, instantly start his engine at any time by simply depressing one of two or more buttons corresponding with the number of cylinders. This is done by a very neat electrical fitting by which the electric current is short-circuited to the sparking plug of whichever cylinder happens to contain the compressed charge ready for explosion when the engine is stopped. This is accomplished by means of an indicator, which enables the driver to immediately observe which button to depress, and consequently to fire the charge in the cylinder containing it, and so restart the motor.

The Simms Manufacturing Company, Limited, 55, Southwark Park Road, Bermondsey, made a big display of the Simms 3 b.h.p. air-cooled vertical and 3½ b.h.p. water-cooled vertical petrol motors. All are fitted with the Simms-Bosch magneto-electric ignition and with Simms's timing gear, by which the time of the ignition can be advanced or retarded, thus enabling the speed of the motor to be altered at will, the maximum being about 2,200 and the minimum about 200 revolutions per minute. By means of a constant level float-feed attached to the engine the supply of petrol is rendered entirely automatic, no regulation of mixing valves being necessary. It may be noted here that the cylinder and head of these engines are cast in one piece; the valves are arranged one above the other, the induction valve being self-contained, and so fitted that it can be readily removed. The 7 h.p. water-cooled engine described in a recent issue was also to be seen on this stand. The cylinder has a diameter of 110 mm. by 100 mm. stroke. Other exhibits on the stand included a Simms-Bosch magneto igniter arranged to give the ignition spark in four cylinders one after the other. A new form of rotary magneto-ignition apparatus for four-cylinder engines was also shown, in which the sleeve is rotated instead of the armature.

A vehicle which comprised a number of interesting features was the "Hallamshire," exhibited by Messrs. Durham, Churchill, and Company, of the Hallamshire Works, Trent Street, Athercliffe, Sheffield. The car, which is fitted with enlarged *tonneau* body, has a frame of channel steel and wood, supported by springs on artillery wheels shod with Clipper Michelin pneumatic tires. Power is supplied by a 7 h.p. Simms water-cooled single-cylinder vertical engine, set on the right-hand side of the car forwards. The motor is provided with Simms-Bosch magneto ignition, while the water circulation is on the thermo-siphon arrangement, a radiating coil being fitted in the fore-part of the car. On an extension of the engine-shaft is fitted a pair of

Champion friction clutches. On each side of the latter is fixed a pinion keyed to the clutch sleeve, the right-hand pinion giving a speed of eighteen miles an hour, and the latter a speed of eight miles per hour. Above the engine-shaft is carried an intermediate shaft furnished with three pinions, the outside wheels meshing with those already referred to, and the central wheel conveying the power at either speed to a toothed wheel keyed on a sleeve on the countershaft. This sleeve carries a central chain wheel, which is connected to a large sprocket surrounding the differential gear on the rear live axle by a 1½ in. pitch roller chain. The intermediate shaft already mentioned and the reversing gear-wheel shaft are both slung on links, which are controlled by a rocking lever, the actuation of which instantly and smoothly throws the reversing gear into action; the gear wheels giving the forward motion are always in mesh. A feature of notice is that the gear wheels are fitted with fibre discs at the side to ensure a quiet drive. The change of speed and reverse are obtained by the use of one lever only. By simply removing three nuts the whole of the gear box can be slid out from the front of the car in case of necessity. A pedal-applied band brake is fitted to the countershaft, double-acting band brakes on the rear wheel hubs, applied by pedal, being also provided. The steering is controlled by a sloping hand wheel. The front end of the frame is mounted on a central pillar, with a strong spiral spring permitting the wheels and axles to follow the curvature of the road without any corresponding deflection of the body. The steering connections are also so contrived that the rods can rise and fall with the axle, notwithstanding which the centres remain constantly fixed. Tubular radius rods are fitted to the frame to maintain a constant distance between the two chain wheels, while provision is also made to take up any slack in the driving chain. The motor bonnet is of aluminium; 4½ gallons of water are carried in a tank in front of the dashboard; the petrol tank is located behind the dash, and has a capacity of 5 gallons. The *tonneau* body, with which the car is fitted, will seat six persons; the weight complete is 11 cwt. The car is geared to a top speed of 18 miles per hour, it having been built for use in the hilly Peak district. A patent *tonneau* body, called the "As You Like It," was also to be seen. In the rear portion of this body the angle seats can be placed at will at either the back or forward angle of the rear portion, the seats themselves being secured to the bottom of the car by pivoted rocking links. With this arrangement the rear passengers can sit either facing the engine or as in a wagonette. Samples of the now largely-used Champion friction clutches were also shown on this stand. The male and female members of the clutch are held in engagement by means of springs, and taken out of engagement by means of the usual collar and lever. These are made in various sizes, and for reverse as well as forward driving. We may add that a Champion clutch has been supplied for use on one of the big 50 h.p. Napier racing cars.

A type of car well known in France, but new to England, was to be seen on the stand of Messrs. De Dietrich and Company, Luneville—a phaeton on the Amedée-Bollée system, a description of which was given in our issue of March 9th last. The engine is of the two-cylinder water-cooled horizontal type of 11 h.p. at 500 revolutions per minute. The power is transmitted by means of a long 5-inch belt off a pulley on the engine-shaft to a countershaft set well in rear of the back axle, upon which the change speed gear is mounted, and from which the drive is taken from the ends of the countershaft by means of bevel gear and driving rod to bevelled tooth wheels bolted to the spokes of the rear road wheels. The change speed gear, which is of the Panhard type, set transversely, has toothed wheels of very large diameter, presenting ample wearing surface. Four speeds forward and one reverse are provided, the gear shaft being also fitted with a ratchet arrangement to prevent the car running back on a hill. The belt is shipped from the fast and loose pulley by means of a pedal, and the sparking, throttle and change speed levers are all set conveniently beneath the steering wheel on the vertical steering column. The dashboard, which is of S-shaped form, forms the petrol tank, and a set of flanged radiating pipes similarly curved in front serves as a radiator, the

circulation being on the thermo-syphon system. The reversing lever is placed handily at the right side of the vehicle, and there is ample band brake power in the form of a wide drum of large diameter on each rear driving wheel, and a pedal-applied band brake on the countershaft. The car shown, which has been purchased by Sir John Campbell, has, we are informed, attained a speed of thirty-two miles per hour, and has carried nine people up the test hill in Richmond Park on the third speed.

The stand of the Motor Car Company, Limited, 168, Shaftesbury Avenue, London, W.C., was the centre of a large crowd of spectators all the week. Attention was principally devoted to the well-known "Decauville" cars, of which two sizes—5 and 8½ h.p.—were shown. The larger car (Fig. 16) has a frame of tubular construction, in the forepart of which is fixed the motor, consisting of two vertical cylinders of 3¾ in. diameter by 4 in. stroke. The normal speed is 950 revolutions per minute, and the maximum 1,400 revolutions. The cylinders form one solid casting, and the water circulation is obtained by a pinion pump placed in front of the motor. The ignition is electrical, with a neat form of positive contact ignition, a circular metal box being secured to the frame of the motor, and carrying a couple of swivel arms which are brought into

from accumulators. No belts or chains are used in the transmission, the engine being geared by means of a friction clutch and bevel gearing to the rear axle. Three speeds—roughly, 6, 12, and 20 miles an hour—are available, but the speed can be graduated between these by means of the variable ignition.



FIG. 16.—THE DECAUVILLE 8½ H.P. CAR.

Four band brakes on drums upon the rear axle are fitted, two of which bands are actuated by a pedal, and two by a hand lever. The motor is arranged to be started from the driver's seat, a hand-wheel being provided to the right for that purpose. Fig. 15 shows the improved "Eureka" car, which is now fitted with a 3½ h.p. water-cooled "Aster" motor, the water circulation being on the thermo-syphon system by means of a reservoir containing nearly two gallons of water, and fitted with radiators. The speed-changing gear is of the "Panhard" type, giving three speeds—7, 13, and 20 miles per hour—without advancing the ignition. The change-speed gear is enclosed in an aluminium case, and all the wheels run in grease. A friction clutch with reversed cones is fitted, which permits of an easy changing of the speed wheels. A Longuemare carburettor is employed. A pedal placed in the footboard of the car actuates the friction clutch. The speed change lever is fixed on the steering tiller, and has five positions, three being in gear and two constituting dead points. The latter are placed between each speed. The body is carried on suitable springs on the rear wheel axle, and all vibration from the engine is isolated from the rider's seat, which is extremely comfortable. The placing of the engine in the front of the car also is claimed to always ensure a good draught of air around it, thus aiding in keeping it cool. The mechanism is also readily accessible, as on a tricycle or quadricycle, and although the car may not be one of the best for heavy

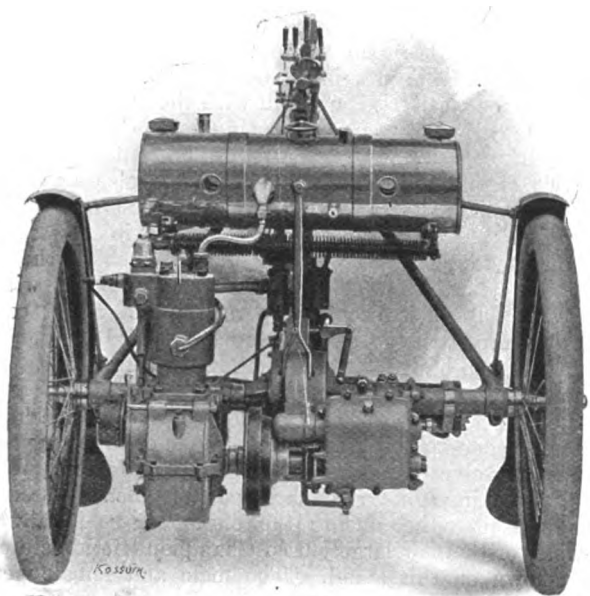


FIG. 15.—FRONT VIEW OF "EUREKA" CAR.

contact with one or other of the platinum-pointed screws by the action of a cam cut on the half-speed shaft. The transmission is on the lines of that adopted on the "Darracq" and "Renault" cars, except that the change-speed gear box, operated through a clutch and longitudinal shaft, is located near the rear axle. The secondary shaft carries a bevelled pinion actuating a bevel wheel fixed upon the back axle. The variable gear is adapted to give three speeds forward and one reverse motion. The speed-changing cogs are placed in a hermetically-closed aluminium box. The three speeds are 8 miles, 17 miles, and 28 miles per hour, calculating at an average of 1,000 revolutions per minute of the motor. Steering is controlled by means of a screw and worm thread, commanded by an inclined hand-wheel. Both foot and hand brakes are fitted. All the parts on which strain is likely to be occasioned, as well as the bearings, are in mild steel. Fig. 17 represents the plan of the 8½ h.p. "Decauville" car, the motor and transmission being entirely mounted on an independent frame any type of carriage body—spider, phaeton, *tonneau*, or omnibus—can be fitted. We next examined a 5 h.p. "Decauville" car, of the type which some months ago ran a distance of 1,000 miles without a stop. This vehicle is driven by a two-cylinder petrol motor of 5 h.p., electrically ignited

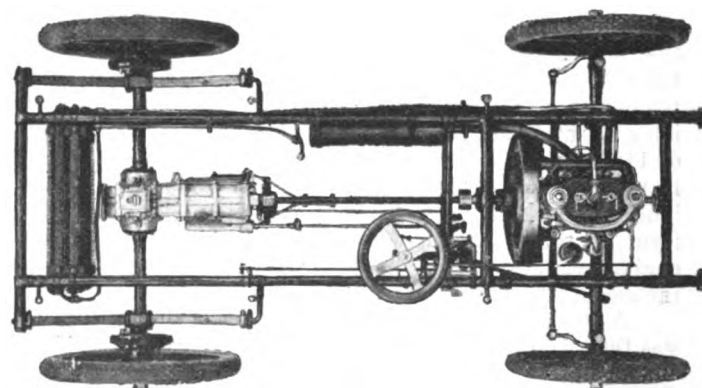


FIG. 17.—PLAN OF DECAUVILLE 8½ H.P. CAR.

work on wet or stormy days, it is a great improvement on its predecessor, and will carry its two passengers at a good speed up any hills that may be encountered, while its ease of manipulation and accessibility of parts render it peculiarly useful to those commencing to use motor vehicles. Cycle-type wheels

shod with pneumatic tires are fitted. Of interest to users of acetylene lamps was a new generator, for which several advantages are claimed.

An interesting contribution to the exhibition was made by Mr. E. A. McLachlan, of 55, Brighton Road, Stoke Newington, N. On his stand was a two-seated petrol car fitted with a vertical water-cooled motor of $3\frac{1}{2}$ h.p. The frame is of angle steel, and the car has a special form of carburettor and electric ignition. The car, which is designed for tradesmen, commercial travellers, and the like, has 30 in. wheels with solid rubber tires of $1\frac{1}{2}$ in. cab section, and the vehicle has two speeds, two belts, and a chain at the side comprising the transmission. The body is supported on springs, the steering being by lever. The vehicle has a water capacity for 100 miles, and carries petrol for half that distance. Two brakes are fitted—a hand brake on the tires and a foot brake on the countershaft. This automobile was among the lowest-priced vehicles in the exhibition, and attracted much attention. Mr. McLachlan also exhibited a new single-cylinder engine of $2\frac{1}{2}$ h.p., a feature of which is the large inlet and exhaust valves, which are placed over one another. The provision of $1\frac{1}{2}$ in. passages does away with any risk of choking. The motor is watercooled. The crank chamber is of aluminium, and the fly-wheel is heavier than usual. Another feature of this display was McLachlan's petrol rudder motor. The cylinder is 2 in. diameter with a 2 in. stroke. The cylinder walls are air-cooled, while the head is water-cooled. The connecting rod is a long one, and is placed in a hollow tube. The screw is driven direct by a balanced crank working in a chamber, and has a reversible feathering propeller. Both the motor and the rudder and propeller gear are on one frame, and the petrol reservoir, the battery and coil, and the carburettor are in one metal case, the total weight of the complete apparatus being about 60 lb. The motor has a capacity for working for eight hours, and can be fixed to any boat without requiring any alteration in its construction. A small $\frac{1}{2}$ h.p. electric rudder motor was also shown. Specimens of a $1\frac{1}{4}$ h.p. petrol motor for bicycles, with a cylinder 2 in. diameter and 2 in. stroke, were also on view. This is of the air-cooled type, and has a speed of 1,800 revolutions per minute, the total weight being about 20 lb. The phosphor bronze fly-wheel has grooves which are first tinned, and then filled in with lead. A speed of twenty miles an hour can be attained with this engine. The "Lithanode" accumulator, sparking coils, etc., were also displayed, and the "Lithanode" 4-volt cells for De Dion engines. A new circulating pump, lighting accumulators, boiler, and engines for steam cars and casting were also on view at this stand.

A Pick voiturette and the Compin spring seats for motor-vehicles formed the attractions on the stand of the Langley Motor Company, of Park Square, London, and 521, High Road, Bruce Grove, N. The voiturette is fitted with a $3\frac{1}{2}$ h.p. water-cooled De Dion motor. This is carried on brackets to the rear of the driving axle, which it drives by gearing enclosed in a case. Two speeds forward are available. The engine is thrown in or out of gear, and a free engine obtained, by the action of a lever which projects up to the back seat of the car. The steering wheels are carried in bicycle-type forks linked together by the steering rod. Laminated spring extensions of the two longitudinal frame members are provided to which the steering sockets are attached, the result being a capital spring for the body. Among the other features of the Pick voiturette is a funnel-shaped channel or scoop with a wide opening to the front. By this means a current of air is drawn to the cylinder in the rear. The air, throttle, and sparking levers are to the left hand of the driver, regard having been paid to his convenience in this direction. Wheel steering and electric ignition have been provided, and a pedal controls the band brake on the countershaft, while another pedal connects with the tire emergency brakes. The Compin spring seats, which were also shown by the Langley Motor Company, have already been subjected to the test of experience in France, where they have been adopted by the Metropolitan Railway of Paris, and the Paris, Lyons, and Mediterranean Railway. Briefly described, the seats are constructed

of spring blades of tempered steel, properly bent, and arranged transversely; one of the extremities of each blade is made to work in a groove on the front of a light wooden frame, the other end being left free. This free end is provided with a gun-metal eyelet, or guide piece, which slides on a polished steel pin fixed to the back of the frame. Around the pin, between the free end of the blade and the side of the frame, is a small spiral wire spring which causes the blades, after the pressure, ceases to return to their original position. It is claimed that this method of construction secures comfort, cleanliness, lightness, strength, and durability—at the same time reducing vibration on a motor-car to a minimum.

The principal exhibit of Messrs. Linford and Willson, Bell Barn Road, Birmingham, was an 8 h.p. petroleum-spirit motor, the cylinders of which are set opposite to one another, with a central crank shaft. Special attention has been paid to the accessibility of all the parts. The connecting rods and pistons can, when the big ends are disconnected from the crank spindles, be withdrawn from the cylinders through the opening in the crank chamber, thus obviating all necessity for breaking joints of any kind. The induction valves are detached, with the sleeve, in which they are contained, by merely loosening two bolts, the exhaust valves being similarly arranged. The silencer is fitted immediately below and parallel with the opposite cylinders, so that lengths of exhaust tubing are entirely obviated. The water joints are independent of the gas joints, and the water circulation has been carefully considered. The normal speed of the engine is from 700 to 800 revolutions per minute. Samples of shafting, hubs, and axles made to specification were also shown, together with a strong and well made centrifugal pump.

The Sirene voiturette has achieved so much distinction in this country that Mr. E. W. Hart, of Luton, found its presence on his stand a sufficient attraction to the public. Upholstered and painted in dark green, white and chocolate, the cars shown were certainly of striking appearance and excellent finish. The features of the car are already well known. It has three speeds forward and a reverse. The motor gives 5 brake h.p., and over-heating is prevented by its nominal speed being only 800 revolutions per minute. Two automatic sight-feed lubricators are provided, and there is also a special lubricator for the crank chamber. Electric ignition, wheel steering, two powerful brakes, and a miniature Panhard gear with a direct drive constitute other points which conduce to the splendid hill-climbing capacity of the Sirene.

The National Gas Engine Company, Limited, of Ashton-under-Lyne, and 75A, Queen Victoria Street, London, E.C., exhibited their National (improved Otto) gas engines. One of these, the "L.E.," is capable of developing 5 e.h.p. and of generating a sufficient current for 50 16-c.p. incandescent lamps. Such an engine is admirably adapted for recharging the batteries for motor-cars, and might also light a country house. Type "N" has double the power of "L.E.," and type "V" develops 43 e.h.p. All three engines are fitted with patent air filters, and continuous lubrication at both ends of connecting rods. There is also a patent piston pin adjustment, by which the wearing surface is much increased, and the tendency to wear correspondingly diminished. The adjustment is of a very firm and rigid character. The side shaft is of a strength sufficient to ensure the steady running to which reference has already been made, which is further facilitated by the character of the wheels employed in transmitting the motion to the governor spindle. These wheels are of the skew gear type, preventing irregularities due to wear and admitting of a very strong construction. As the governor works in a vertical position the great advantages of the dead-weight with the spring are secured, and any alteration in the speed of the engine that may be required can be made without stopping it. The exhaust valve, seating, and spindle guide are part of the main casting, thus ensuring durability and preventing damage from overheating, as well as the fear of broken joints.

The exhibit of Messrs. Barriquand and Co., 27, Avenue de la Grande Armée, Paris, consisted of a four-cylinder vertical

water-cooled motor of the Daimler type made by Messrs. Eldin and Lagier, of Lyons. The engine is fitted with centrifugal governors, operating through two conical collars on a second shaft carrying arms and rollers, which cause the exhaust valves to remain closed when an excessive speed is attained. The cylinders are 110 m.m. diameter by 150 m.m. stroke, the power developed being put at 20 h.p. The engines, which appear to be well finished, are fitted with tube, electric, or magneto ignition at the desire of the purchaser.

It has been known for some time that the Bassett Motor Syndicate, of 10, Dorrington Street, Brooke Street, Holborn, London, E.C., has been at work on the construction of a new car in which the Bowden wire mechanism has been most ingeniously adapted to control the application of the brakes, the advance ignition, the exhaust valve, the throttle, the change gear, and the steering, a considerable reduction in weight being the result. The car, of which we give a general view in Fig. 18, is fitted with a 4 h.p. Schwanemeyer water-cooled motor of simple construction, and of which a description was given in our issue of May 26th, 1900. The motor, transmission gear, and rear axle balance gear are formed in one set of mechanism, all contained and arranged inside one aluminium oil chamber, no chains, belts, or bevel gear being employed. The motor has an auxiliary exhaust greatly facilitating the work of the scavenging stroke. The main exhaust is fitted with a speed governor, regulated from

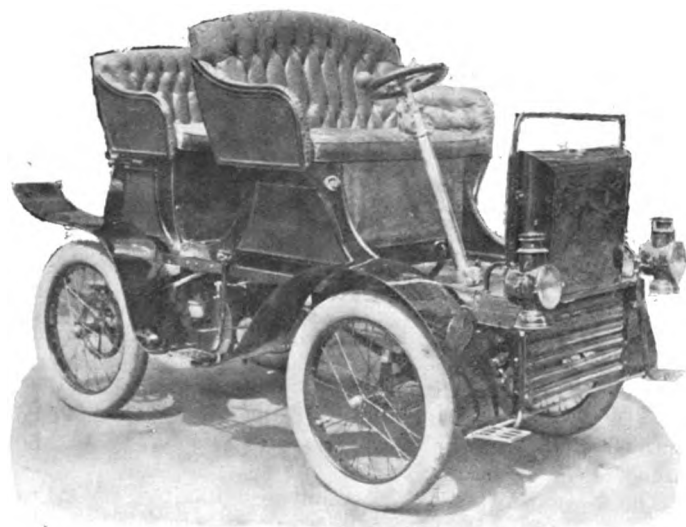


FIG. 18.—THE BASSETT CAR.

the steering column. Electric ignition is adopted. All important revolving and reciprocating parts of the motor are fitted with roller bearings, reducing friction to a minimum. Two speeds are provided and are operated by one lever and Bowden wire acting on internal friction clutches, coupled to the rear axle balance gear, all gears being constantly in mesh. Powerful band brakes are fitted to the hubs of each of the rear wheels, and are applied by a lever under the right foot. The handles controlling the electric ignition, exhaust regulator and carburettor, also the levers working the change-speed gear and band brakes are all operated by means of the Bowden flexible mechanism; no cranks or rods being used, there is consequently nothing to work loose or rattle. The water cooling is effected by a centrifugal pump (driven direct off the fly wheel) forcing water around cylinder and through a radiator suspended at the front of the car. The rear seat and the portion of the floor to which it is attached is hinged or can be entirely removed for the purpose of oiling or inspecting the motor, and as the whole of the driving mechanism is self contained and forms part of the main axle, it is particularly easy of access. Three-and-a-half inch Grappler pneumatic tires are fitted on 28-inch equal-sized road wheels. By the arrangements they have adopted, 80 per cent. of the power developed is said to be conveyed to the road wheels, the makers claiming this to be the highest efficiency that has so far been attained.

The Ariel Motor Company, Limited, Bournbrook, Birmingham, exhibited a sample of the well-known "Ariel" 2½-h.p. motor-tricycle and the new pattern convertible quad, provided with 3 h.p. "Ariel" motor. The quadricycle has been improved,

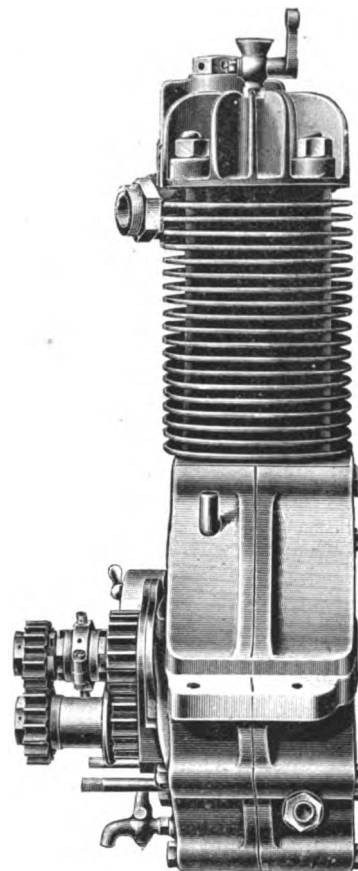


FIG. 19.—THE ARIEL MOTOR WITH TWO-SPEED GEAR.

the motor being provided with a water-cooled head, and a two-speed gear. The water is passed through a flanged radiating pipe to one end of a long cylindrical tank behind the seat. The middle division of the tank contains the lubricating oil, and the other end the petrol. The "Ariel" two-speed gear is illustrated in Figs. 19 and 20. A is the motor shaft, a square portion of which carries a clutch sleeve, B. On this shaft A are also two pinions C and D, which may revolve freely on the shaft, or either can be held at will by the sleeve B, by means of jaw clutches. Parallel with the motor shaft A is a counter shaft E, carrying pinions F and G, both keyed to the same sleeve, which revolves freely on the counter shaft E, both pinions F and

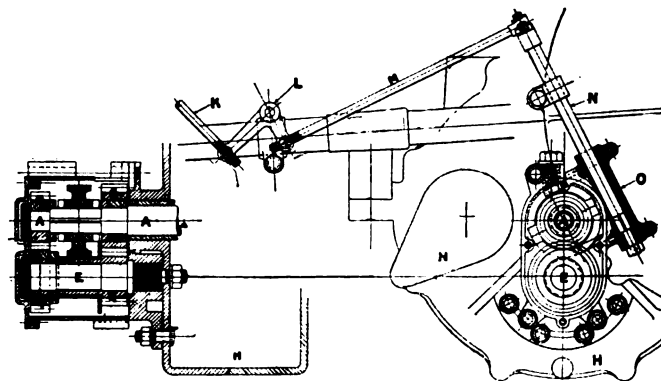


FIG. 20.—DETAILS OF ARIEL TWO-SPEED GEAR.

G being always in mesh with the pinions C and D on the shaft A, the pinion C driving the large spur wheel on axle of tricycle or quadricycle. It will be seen that when the sleeve B holds pinion C, the motor is driving direct on to the large spur wheel on the

back axle; this, being the largest pinion, therefore gives the high speed. If, now, pinion D is connected to the motor shaft A by means of sleeve B, pinion C revolves freely on shaft A, but is driven by D, through F and G, thus giving the slow speed. When sleeve B is midway between the pinions C and D, the motor is disconnected, so that the machine can run down hill by gravity alone. All the pinions being constantly in mesh, it is a very easy matter to change the gear, pinions C and D running only at a slight variation of speed, the change being effected with little or no shock. The gear is entirely enclosed in a grease-containing chamber, bolted on the side of the engine-crank chamber. On a stand was also to be found a motor and combination tank, as fitted to frames of tricycles and quadricycles, with battery, induction coil, exhaust pipe and necessary tubes. All the parts which are comprised in a complete "Ariel" motor were shown, the workmanship of the latter being particularly noticeable.

M. Latil, 15, Boulevard Rabatau, Marseilles, exhibited by means of a well-executed drawing, the *avant train* or motor fore-carriage he has lately introduced. The motor, either a $3\frac{1}{2}$ or 5 h.p. "Aster," is carried in front of the forward axle, to which it transmits motion through a variable speed gear of the "Panhard" type, giving three speeds forward. The front wheels serve both for driving and steering purposes. The ordinary shaft is provided with universal joints arranged with their centres in the lines of the steering centres. The car, of which we hope to give a complete description in a later issue, is adapted for three persons.

Up in the Gallery were to be found Messrs. Cox and Yeman, of 184, Brompton Road, London, S.W., and of billiard-table fame. The specimen of the firm's art there exhibited was a table in oak, with panelling, chimneypiece, overmantel and furniture *en suite*, an exact replica of a 1606 room in old Bromley Palace. Messrs. Cox and Yeman devote special care to architects' plans. The above was a very fine specimen, both of design and workmanship. The adjacent billiard room for the use of members of the Automobile Club during the Exhibition was also fitted up by Messrs. Cox and Yeman.

An exhibit of their Grappler tires for motor-tricycles, motor-quadricycles, heavy and light motor-cars was made by the New Grappler Pneumatic Tire Company, Limited, 27 and 28, Clare Street, Dublin. They also showed a specially strong Grappler. One of the advantages claimed for this tire is that it can be repaired in case of accident, being hand-built, and not vulcanised and made harsh. It is built "to shape," and when inflated the cover and tube are normal, and not distorted. The tire will stand a great air pressure, and it is said to be impossible to blow it off the rim, while at the same time it is easily detachable.

Messrs. W. H. Wilcox and Co., of 36, Southwark Street, London, S.E., exhibited special semi-rotary motor pumps, for circulating the water into the cooling chambers of motor-cars. These have been adopted on the Daimler and various other pattern motor-cars with the greatest success, and have a large sale. The Penberthy patent injector for feeding the boilers of steam motor-cars was another of the firm's specialities largely in use and on view at its stand. The size of the injector, which is very small, renders it particularly adaptable to the requirements of the motorist, a very high pressure being obtained in spite of its Lilliputian dimensions. Their patent wire-bound hose, suitable for filling the boilers of steam-cars, was also on show. It is strong, durable, and exceedingly flexible; having no rubber in its composition it does not deteriorate or perish like rubber hose. A selection of all kinds of stores and sundries suitable for the manufacture of motor-cars was also on view.

To those whose interests lie in the making of motor-cars an inspection of the many exhibits made by Messrs. George Hatch, Limited, of 5, Upper Thames Street, London, E.C., must have proved instructive. Here every variety of tool and appliance capable of being used directly or indirectly by the "trade" was to be seen in its most up-to-date form.

(To be continued.)

HERE AND THERE.



AMONGST the licences recently granted at Brighton for omnibuses was one for a motor-omnibus to carry about twelve persons, to ply on such route within the borough as may from time to time be agreed on by the Watch Committee.

MESSRS. JAMES AND BROWN are now settled in their new premises at Hammersmith, 78a, Queen Street, close to the bridge. They have storage accommodation for about twenty vehicles, and are in a better position than ever for undertaking repairs.

THE twenty-second annual race meeting of the Chichester Cycling Club will take place in the Priory Park, Chichester, on Whit Monday. Included in the programme is a three miles motor-cycle race, three prizes, value £3 3s., £2 2s., and £1 1s., being offered.

WHILE a military band was marching through the streets of Brussels recently, a carelessly-driven motor-car charged into and knocked over the bandmaster. The musicians immediately put down their instruments, closed round the vehicle, and gave the driver a sound thrashing.

MR. J. T. NIBLETT, of 16, Coleraine Road, Blackheath, sends us particulars of an improved traction cell, which he is about to place upon the market. Small dimensions, light weight, mechanical strength, and high rate of discharge, are amongst the advantages claimed, which should commend it to the votaries of electricity as the propelling power of motor-cars.

MESSRS. ROOT AND CLARKE, of Station Road, Herne Bay, have been appointed official repairers to the Motor Manufacturing Company, Ltd., and Messrs. De Dion-Bouton, Ltd. The firm has large showrooms, and undertakes all kinds of repairs. Petrol and accessories are also stocked; as will shortly be a small motor-car of a new pattern which the firm is building.

AT a meeting of the Bexhill Urban District Council, the promoter of the scheme for running a service of motor-cars to outlying districts, referred to recently, divulged some interesting particulars. The cars are to be 12 h.p. Daimlers, and will be supplied by the Daimler Motor Company. Each of the four will carry fourteen passengers, and in the season it is proposed to convey visitors to such places of interest as Hurstmonceaux, Pevensey, Canterbury, Rye, and Tunbridge Wells.

A FIRE occurred last week at Glasgow which completely destroyed the works of the Mo-Car Syndicate, Ltd. The premises consisted of a brick building, ninety feet square and two storeys high, with five shed roofs running east and west, and a lesser building sixty feet by forty feet. The former was used as a workshop and manufactory, and the latter as a pattern loft and offices. As well as the premises, much valuable machinery was destroyed, and the total damage is estimated at £10,000 to £12,000.

MR. LOUIS SINCLAIR, M.P. for Romford, Essex, against whom a summons, taken out by the City Police, for driving a motor-car to the common danger of the public in the City, was dismissed recently, was on his way to the House of Commons at the time of the alleged offence, and being indignant at the action of the police, made a note of the names of the three constables who gave evidence against him. As a result the whole matter was considered by the City Commissioner of Police, and the three constables were highly commended and granted an extra length of leave to their usual annual holiday.

ONE of the most complete motor tire repair outfits ever designed has lately been introduced by the Dunlop Company. The outfit consists of a square tin box about $8\frac{1}{2}$ by $8\frac{1}{2}$ inches, $4\frac{1}{4}$ inch deep, and contains everything that can be needed for the roadside repair of the largest tires. The outfit comprises: Two 1 lb. tins of the best solution, one packet of patches and plugs, tire cleaner, two tire detachers, roll of prepared rubber in tin tube, roll of prepared canvas in tin tube, scissors, two small spanners, spare valve, two spare clamps, and one piece of masticated rubber for filling up cuts, etc.

It is reported that a motor-car service is to be started between Harrogate and Knaresbro'.

MESSRS. FRISWELL AND CO. inform us that petrol, lubricating oil, grease, etc., may be obtained from their West End depot, 1, Princes Road, Holland Park, W., at all times, Sundays included.

THE start of the Automobile tour in Ireland has been altered from August 12th to August 8th, as it was found impossible to get accommodation in Waterford on the 12th, owing to the Trammore races.

MESSRS. DONSWORTH BROS., of 11, Princes Road, Hull, are keeping a stock of petrol and motor accessories. They are official repairers to De Dion-Bouton, Limited, and the Motor Manufacturing Company, Ltd.

By an unfortunate error, the wrong illustration was inserted in the Locomobile Company of America's advertisement in our last issue. The car shown was a four-seated one, Style O5, the price being £300, not £160, which is the price of the company's two-seated car, Style O2.

THE Hozier Engineering Company, Limited, are exhibiting at Stand 92, in the Grand Avenue, Glasgow International Exhibition. They are showing one of their four-seated phaeton-pattern cars, fitted with New York tires, and also a gear box with the top of the lid cut out so that the change-speed gear can be inspected.

As a motor-car belonging to Messrs. Clamp, of Colchester, was being driven up North Hill, Colchester, one of the driving chains came off, and the car began running down the hill. The driver applied the brakes without success; then, with ready resource, steered for some large barrels standing outside a shop, scattering them in all directions, but effectually stopping the motor-car.

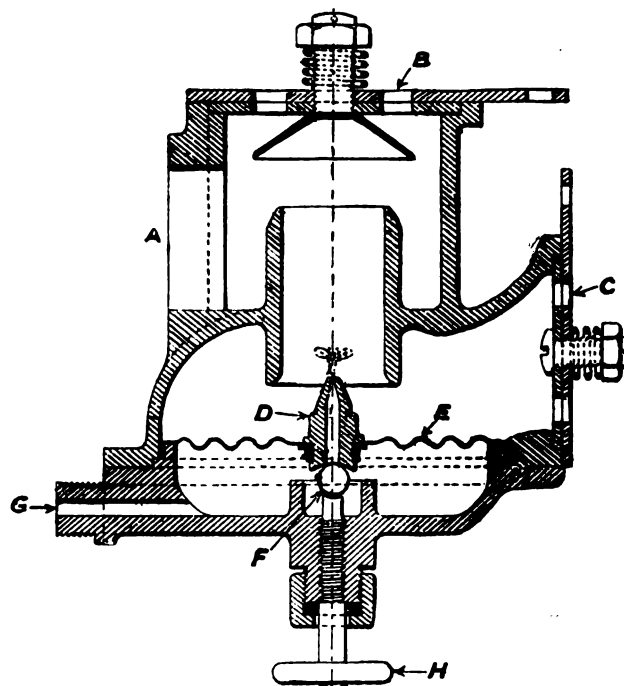
THE British Automobile Commercial Syndicate, of 97 and 98, Long Acre, London, W.C., in forwarding their current monthly price list, call attention to the large selection of motor-cars held at their London and Paris depôts, ready for immediate delivery. At the garage which the Syndicate has established motor-cars can be stabled, cleaned and oiled at a small weekly charge. The Syndicate also undertakes to supply qualified engineers.

A MEETING was held at the Town Hall, Preston, last week for the purpose of forming a local committee, to make arrangements for the reception of the vehicles which will be in competition on Friday, June 7th, in connection with the Liverpool Self-Propelled Traffic Association. It was resolved after some discussion that the waggon should enter Preston from Blackburn, go by way of Newhall Lane, Stanley Street, Park Road, Ormskirk Road, and rest for half an hour in the Covered Market. The journey will then be resumed to Liverpool, via Cheapside, Fishergate, and Fishergate Hill. All the arrangements were made, and Major Little promised to give every help on the part of the Police.

As already announced, the English Motor Club have decided to hold a Hill-Climbing Competition at Tilburstowe, Surrey, on Saturday, June 15th. Acting on the experience gained from last year, it has been decided to divide the competing vehicles into the following classes, viz.:—(1) Bicycles; (2) tricycles up to 3 h.p.; (3) tricycles above 3 h.p.; (4) quads up to 3½ h.p.; (5) light cars up to 7 h.p.; (6) cars (two-cylinder) up to 9 h.p.; (7) cars (three or four cylinder) up to 16 h.p.; (8) large cars (two, three, and four cylinder) above 16 h.p. In order to make the competition most interesting, and to give every motor-vehicle entered a fair chance of winning, it has also been decided (1st) to frame a handicap in each class, giving three certificates to the winners; (2nd) to frame a general handicap of the whole of the entries, giving three certificates in the order of merit of each class; (3rd) to award a certificate in each class to the motor-vehicle doing the actual best time in the said class; (4th) to give a gold medal to the motor-car or cycle doing the actual best time in the whole competition. After the contest a dinner will be held at the Clayton Arms, Godstone.

THE BLAKE NON-FLOAT FEED CARBURETTOR.

IN our last issue we referred to Mr. F. C. Blake, of Hammersmith, having brought out a new carburettor, noticeable on account of the absence of the usual float feed. We are now able to give a section of the apparatus. It will be seen that the lower portion of the device is partitioned off by a flexible diaphragm, E. The diaphragm carries a centre nozzle, D, which fits down upon a ball, F. A set screw, H, allows the position of the ball, F, to be adjusted, and the ball itself forms a valve which normally prevents the petrol, supplied through the pipe, G, from issuing out of the nozzle, D. Two adjustable air inlets, B and C, lead into the apparatus, the one (B) providing auxiliary cool air to the motor through the passage A, and the other admitting air to be carburetted by passing round the nozzle, D. A shield prevents the petrol from escaping through the air inlet, B, the shield also serving to mix the fresh air with the carburetted charge. The inside of the carburettor is left rough, in order to afford a large retaining surface for the liquid petrol. When the motor is making its suction stroke, the partial vacuum

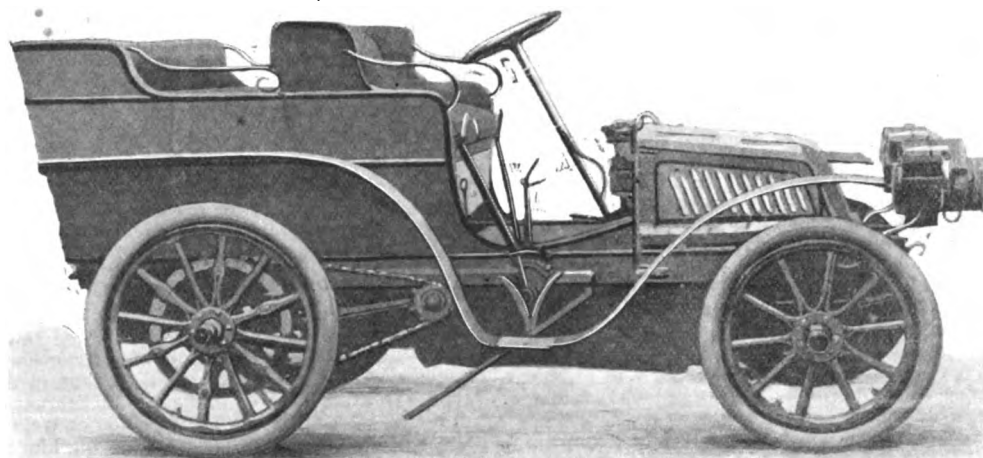


formed in the carburettor causes the diaphragm, E, to rise, and permits some of the petrol to escape through the nozzle, D. The entering air then mixes with it and carries it to the explosion chamber of the motor. At the end of the suction stroke the diaphragm returns to its normal position, and in so doing it pumps a jet of petrol through the nozzle. This second discharge forms an evaporating film over the walls of the carburettor and is ready to be taken up by the air during the next suction stroke. Mr. Blake has fitted the carburettor to his own car, and he informs us that he is thoroughly satisfied with the results obtained from it.

MR. WALTER MUNN has been appointed Secretary to De Dion Bouton, Limited, in place of Mr. Charles Jarrott, who has recently resigned.

THE Electric Ignition Company, of Highgate Square, Birmingham, has forwarded us a pamphlet entitled, "A Few Words on Electric Ignition." The few words explain very clearly, with illustrations, the system of ignition followed by the company. Appended is a catalogue and price list of the company's sparking-plugs and some other appliances indispensable to the motorist.

The New Mors 10-h.p. Car.



HEREWITH we are able to illustrate a new 10 h.p. Mors car which is being introduced into this country by the Roadway Autocar Company, Ltd. The general arrangement follows the lines adopted on the well-known Mors 10 h.p. car recently described in the *Journal*. The new vehicle has, however, a longer wheel-base, and is fitted with a tonneau body having accommodation for six persons. The taking design of the vehicle and the reputation of its makers are strong points which will recommend the new car to the patronage of motorists.

FURIOUS DRIVING CASES.

BEFORE the Brighton Borough Bench, Eugene Chamery, of Hove, a French subject, was summoned for driving a light locomotive on King's Road on the 16th inst. at a greater speed than was reasonable, having regard to the traffic. Mr. J. K. Nye defended, and pleaded not guilty. Police-constable William Peckham said he saw defendant driving a motor-car on the front at the rate of about eighteen or twenty miles an hour, about seven o'clock in the evening. He stopped him, and through an interpreter defendant said he was only going ten or eleven miles an hour. Police-constable Lilywhite and a retired military officer both estimated the rate at which defendant was driving at twenty miles an hour. Mr. Nye, for the defence, submitted that the evidence for the police was more or less by guess, and showed variation. The car was not going at a greater pace than twelve miles an hour, it being regulated in such a way that it could not exceed that speed. Defendant was sworn, and said that on the evening in question he drove two gentlemen from King's Gardens to the New Club. The car was then so regulated that it was going at fifteen kilometres. Frederick Ricketts, who was in the car on the evening in question, said they were certainly going not more than ten miles an hour. A fine of 40s. and costs, or twenty-one days' imprisonment, was, however, imposed.

AT St. Neots Petty Sessions, S. D. Begbie, of Willesden, was charged with driving a motor-car upon the highway at Buckden at a greater speed than twelve miles an hour, on 29th April. Defendant did not appear, but Superintendent Freestone proved the rate of travelling—900 yards in one minute. The Bench inflicted a fine of £8, and costs, 16s.

AT the Bradford City Court, Mr. Grahame White, manager of the Yorkshire Motor-Vehicle Company, was summoned for furiously driving a motor-car in Lister Park on Sunday, 21st April. The defendant did not appear, but it was stated that he told a constable that he was not driving at more than eight miles an hour. Mr. H. Hankinson, Deputy Town Clerk, said that during the "church parade" on the day named the defendant drove his car up the drive leading from Manningham to Heaton and back again at the rate of fourteen or sixteen miles an hour, the people being scattered in all directions. The defendant had been previously fined for furious driving, and the Stipendiary now inflicted the maximum penalty of £2 and 14s. costs, regretting that he could not fine the defendant £10.

AT Ruthin Police Court, Chancellor Bulkeley Jones presiding, Mr. Grahame White was summoned for furiously driving a motor-car at Ruthin on 4th April. Defendant did not appear. Police-constable Howells said the defendant drove the car through Well Street, Ruthin, at the rate of twenty or twenty-five miles an hour. Had anyone come out of a cross road, there would have been no chance of escape. Alun H. Williams, clerk to the magistrates' clerk, said the motor-car passed his house at a terrific rate. The Bench imposed a fine of 40s. and costs.

SIDEY SHAW, Rowfant, was summoned for furiously driving a motor-car at Three Bridges on the 3rd inst. Defendant pleaded not guilty. Police-constable Cobby said about 10.45 a.m. on the day in question he was on duty at Pound Hill, Three Bridges. He heard a motor-car coming in the distance. As it neared witness he found that it was going at a very dangerous pace. Witness put up his hand, but defendant took no notice. He should say the motor was travelling at the rate of twenty miles an hour. Peter Denman, Pound Hill, Worth, an old man, spoke to seeing the motor-car pass the four crossways very fast. He had only seen one or two motor-cars altogether. He should say that the pace exceeded twelve miles an hour. The Rev. D. L. Secretan, Curate of the parish of Worth, described the pace as fast. He had no idea as to what the pace was; that was difficult to say. Defendant contended that his car could not go more than ten miles an hour, as it missed its explosions one in every three. The Bench dismissed the case, the Chairman remarking that he hoped the defendant would in future drive at a moderate pace.

AT Birkenhead William Beckett Hill was summoned for driving a motor-car on the Chester road at a speed dangerous to the public. Mr. M'Masters, who appeared to defend, applied for an adjournment pending civil proceedings; but the Bench decided to hear the evidence as to speed. Joseph Hesketh, cab driver, said he was walking his horse and cab through Bromborough Village on the evening of the 1st inst., when he saw a motor-car coming towards him at a terrific rate. He signalled for the car to slacken off a bit, but instead of that it ran into witness's horse. He was sure the car was going at least twenty miles an hour. Both shafts of the cab were smashed in the collision, but he could not say whether the horse put one of its feet on the car, nor whether the shaft struck the lady in the motor. Three other witnesses said the speed of the car was twenty miles an hour. Mr. Hill stated that he did not travel more than eight miles an hour, and he gradually slowed down, and stopped the car. Other evidence was adduced that the speed of the car was not at all high. The magistrates said that they had nothing to do with the collision, but they were satisfied the speed of the car was too great, and they imposed a fine of 10s., with 10s. costs.

BEFORE the County magistrates at Coventry, a machinist named Henry Cantrill was summoned for driving a motor-cycle, in the Birmingham Road, "to the common danger of passengers," on 10th May. Defendant pleaded not guilty. Police-constable Vale said that on the day in question he saw the defendant near Pickford's Brook riding on the "flat mile" from Coventry at a furious rate, which witness estimated as between twenty and twenty-five miles an hour. He stopped the defendant, who said that he had been sent out by Messrs. Bayliss, Thomas and Co. to test the capabilities of one of their "Excelsior" motor-bicycles. Answering the defendant, the officer said that defendant stopped when called upon. He (the constable) estimated the speed by timing him for

500 yards. Police-constable Vale, in answer to Alderman Hill, said it was possible to time a rider with accuracy on this straight stretch of road by the aid of the telegraph poles. The defendant said that he was riding "an old crock," and he could assure the Bench he was not going more than twelve miles an hour. The Chairman said the Bench were very unwilling to put restriction upon the trial of these machines, but this was a wrong place to try one. A fine of 10s. and costs only would be imposed.

At Bristol Police Court, Lawrence P. Still was summoned for driving a motor-car "in a furious and improper manner, to the common danger of the public." Mr. Douglas Metcalfe represented the defendant. Detective Slade stated that on the 30th of last month he observed the defendant driving a motor-car from Southampton Parade to White Ladies Road. On reaching the latter thoroughfare several people had to run in order to get out of the way of the car. Witness subsequently visited defendant, and asked him if he remembered being in White Ladies Road on the evening in question. Defendant said he could not have been there, as he was at Filton with a lady. Subsequently he admitted that he might have been in White Ladies Road. The Chief Constable said that on the night in question, about 7.15, he was crossing White Ladies Road, when he observed a car sweeping down upon him at such a pace that he had to "skip" out of the way as well as he could, and was very nearly caught. The car was going very fast, and it was being driven most recklessly, as not the slightest deviation was made to avoid him. He could not inform the court who it was driving the car. Plain-clothes officer Saunders corroborated Slade's evidence. Fredk. Fielding, cab driver, who recognised the defendant, said the pace was from ten to twelve miles an hour. Mr. Metcalfe contended that the case was one of mistaken identity; that defendant could not have been in White Ladies Road at 7.15. The defendant said that he started from Charlton on the night in question at 7.5. A lady who had accompanied him in his car alighted at the bottom of Blackboy Hill. He then drove down White Ladies Road, keeping in front of a tram-car, and then turned into Southampton Parade. He made a purchase in this thoroughfare, and then proceeded up Cotham Hill and passed through Aberdeen Road to White Ladies Road. He followed behind the tram-car up White Ladies Road. The pace at which he was travelling did not exceed eight miles. The magistrates were satisfied that it was a case of mistaken identity, and the summons was accordingly dismissed.

At Iver (Bucks) Petty Sessions on Saturday last, Mr. Mark Mayhew, L.C.C., of Rehampton, Surrey, was summoned for driving a motor-car to the common danger at Denham, on April 28th. Evidence was given by a constable that the motor-car came down a hill at a terrific pace; he put up his hands, and the driver pulled the car up after going sixty yards beyond him. Mr. Staple Firth, of London, who appeared for the defendant, contended that there was no case for him to meet, as no evidence had been given that there was a person on the highway. The Bench held that a *prima facie* case had been made out. Mr. Firth said he should appeal to the High Court on the ground that there was no evidence of persons being on the highway in danger. A fine of 10s. and 8s. 6d. costs was imposed, but a stay was granted pending decision of the High Court.

TRACTION-ENGINE OR MOTOR-CAR.

At Aberdeen J.P. Court last week the Speedwell Motor-car and Cycle Company, Limited, Aberdeen, were charged with having, on 5th April, driven a locomotive along West Hutcheon Street, and also with having, on 11th April, driven a locomotive along Rosemount Place, without having the requisite number of persons in charge, there being only two persons instead of three. Mr. Rennet, solicitor, who appeared for the company, stated that the whole question was whether this motor-lorry was a light locomotive or not. It was averred that it emitted smoke and vapour, and the company held that there was no smoke, and wished to get an experienced man to examine the machine in order to be able to say whether there was or not. The Procurator-Fiscal said he might also inform Mr. Rennet that he was to prove that one of the locomotives was shod on the wheels the very same as an ordinary traction-engine. Mr. Rennet asked that the case be adjourned for a fortnight. It was a matter of great importance to the company, because if it was held that this was a locomotive it would practically mean that they would have to stop carrying on business. The Fiscal objected to such a long delay, unless a guarantee was given that the machine was not to be used. It was agreed to adjourn the case for a week.

Donald Donaldson, the driver of the machine, was charged with driving a locomotive along Hutcheon Street West and Rosemount Place on the dates specified during hours in which locomotives were prohibited by the bye-laws of the city. Accused pleaded not guilty, and it was explained that the same question arose here as in the previous case. It also was adjourned for a week.

A FATAL ACCIDENT.

A MOTOR-CAR accident occurred last week at Knaresborough, near Harrogate, resulting in the death of Frederick George Oxby, of Doncaster. The car, which has been running between Harrogate and Knaresborough, was making the journey to the latter place, and running down hill into the town, when the driver applied the brakes. They failed to act, and the

tires came off the front wheels. The deceased jumped out of the car, unfortunately in the opposite direction to which the vehicle was travelling, and his head coming into violent contact with the kerbstone, he was instantly killed. At an inquest subsequently held some evidence was given as to the brakes on the car not being in accordance with the requirements of the Light Locomotives Act. The Coroner remarked that it seemed a case in which there was serious liability on the part of someone, and adjourned the inquest.

IN THE MIDDLE OF THE ROAD.

Mr. J. PALETHORPE, a gentleman residing in Birmingham, was summoned at Halesowen for contravening the Light Locomotives on Highways Order, 1896, by failing to keep a motor-car on the left side of the road when meeting a carriage on the 29th ult. It was alleged that the defendant drove the car on the centre of the road instead of on the near side, with the result that Major F. D. Lea-Smith's horse shied, and the carriage went into the hedge, some slight damage being done. Mr. Baker said the defendant had driven several thousand miles, and had been awarded a gold medal for proficiency. The Bench held that an offence had been committed, and fined defendant £3 10s.

A COLLISION CASE.

At Wellington County Court, George Downes, a plumber, of Newport, sued H. Caley for the sum of £26, for damages in respect of alleged negligence on the part of the defendant in driving a motor-car. Mr. Elliott (Newport) stated that early in February his client, while driving in a trap with his son in the direction of Wellington from Newport, met the defendant in a motor-car approaching him at a rapid rate. He raised his hand to the defendant, and called out to him to stop, as his horse, at the sight of the car, became restive; but instead of doing so, the defendant continued at the same pace and crashed into his client's trap, which was damaged considerably. The cob took fright and ran away, the plaintiff and his son being left in the road where they had been thrown. Downes suffered from shock, for which a claim was made, and the incident had had such an effect on the cob that it had not been so manageable since. Mr. Littlewood repudiated all liability on behalf of his client, stating that the car did not belong to him, and though an occupant, he was not in charge of it. A controversy ensued as to what course might be pursued in view of Mr. Littlewood's statement, and an adjournment of the case for the particulars to be amended was suggested. Ultimately Mr. Littlewood consented to the driver of the car, John William Kidd, works engineer at the Castle Car Works, being added as a defendant, and Mr. Elliott proceeded to state the law relating to the use of light locomotives on highways. Mr. Kidd denied that the plaintiff signalled to him to stop, and said it was not until the horse got abreast of the motor-car, whose speed had then been reduced to six miles an hour, that it became restive. Then it swerved suddenly round, and backed the trap into the motor-car. This evidence was substantiated by Mr. Caley, by Mrs. Caley, and a witness named Haddock, a pedestrian, who was passing at the time. His Honour, in summing up the case, said it was the first of the kind that had come before him. Motor-cars had as much right on the highways as traps, but those in charge were expected to take special precautions to avoid accidents, seeing that horses were so liable to be startled by them. In this case he did not think the driver of the car could have done more than he appeared to have done, and he believed the plaintiff was under a wrong impression about giving as clear a signal to the driver as he had stated he had done. Judgment was given for the defendants.

AN inquest was held recently on the body of a Lincolnshire farmer. Deceased was one of an afternoon motor-car party, and on returning at night he was missed. Nothing further was seen or heard of him till next morning, when his body was found in the mud of the river Whitham. A verdict of "Found drowned" was recorded, and the incident has gone the round of the press headed, "Strange Motor-Car Fatality."

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THE Motor-Car Journal.

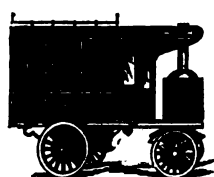
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COMMENTS.



AT the dawn of automobilism in this country more stress was laid on its future value from a business than from a pleasure point of view, and special expectations were raised among circles interested in heavy goods traffic, which have hardly yet been realised. It is true that great advances have been made in this direction, which it may be hoped will be brought prominently before the business public by the forthcoming Liverpool trials, but the rapid strides in popularity of the motor-car for passenger purposes make its tardy spread for industrial ends noticeable by comparison. Though the development of heavy goods wagons has been undoubtedly impeded by the weight limit, this has had little injurious effect on those of more moderate capacity, and a mistaken conservatism alone has prevented their wider use, while the proposition that these latter should be encouraged at the expense of the more ponderous vehicles is at least capable of being maintained with some reason from the point of view of the road authorities. Light, fast traffic should have the prior consideration on the road, and it is precisely this traffic which is best served by the automobile; heavy manufactures may require the 5-ton wagon, but the opening up of country districts and the economical conveyance of their products is a problem to be solved by the aid of such motor-vehicles as do not sacrifice speed to large capacity.

The Reading Automobile Club.

ON Saturday last, the 25th ult., some of the members of the Reading Automobile Club started upon a tour to Wells, Glastonbury, and Cheddar. The trip was highly appreciated by all taking part, and was marked by the most conspicuous absence of any trouble to the cars, which practically required no attention whatever from start to finish. Good fortune favoured even the tires, the puncture fiend having apparently availed himself of the holiday season wherein to take a rest from his ingenuity. The most exciting incident of an "accidental" nature was contributed by one of the Vice-Presidents of the Club inadvertently cooking his sandwiches upon the exhaust pipe. His appetite and enthusiasm prompted him to sample the delicacies, but both faltered before the various flavours of exhaust, lubricating oil, and ham fat in a state of dissolution. The tour was in every way an unqualified success, and the members taking part in it returned refreshed, though dusty, after a capital ride through beautiful scenery.

The Dust Nuisance: a Competition.

IN connection with the dust question, which has been alluded in several of our recent issues, we are able to announce that the Committee of the Automobile Club has decided to offer a prize of 100 guineas and a diploma for a practical method of removing or alleviating the nuisance of dust arising from motor-vehicles fitted with pneumatic tyres. The trial will be held as soon after August 1st next as the Committee are in possession of particulars of devices which, in their opinion, might be effective.

The Lincolnshire Automobile Club.

TO-DAY (Saturday) the members of the Lincolnshire Automobile Club will hold a run to Revesby. In order to avoid the inconvenience of too many cars running in company members will meet at the Red Lion, Revesby, at 4.30. After tea, at 4.45, Revesby Abbey will be visited, by permission of Mrs. Stanhope, and the road for Lincoln taken about 7 o'clock. The Lincoln contingent will leave headquarters at 1.30, proceeding *via* Horncastle, and returning *via* Tattershall and Metheringham. The Club will also hold a run to the "Dukeries" on Wednesday, June 12th, and will take in Edwinstowe, Welbeck, Clumber, and Thoresby. The Lincoln contingent will leave headquarters at 9.45, *via* Tuxford. Luncheon will be taken at the Royal Oak, Edwinstowe, at 12.15, and tea at the Normanton Inn, at 5.30.

Southampton's Municipal Motor-Car Service.

AT the meeting of the Southampton Town Council last week the report of the deputation appointed to deal with the question of motor-omnibuses was read and adopted. The deputation had visited Nottingham, where the assistance of the Chief Constable was sought. The latter assured them that the public appreciated the service, that the cars had been kept fairly well on the road, and that they need have no anxiety as to the results of such a service as a feeder to the tramway system. The deputation were satisfied with the information they gathered in Nottingham, and felt no hesitation in proceeding to Coventry and finally placing the order with the Daimler Company for three cars, to be delivered about the middle of July. Of these three cars the deputation advised the Tramways Committee to keep two on the road and one in reserve, by which means each car will be kept in a perfectly efficient state. The motor-cars are to run to Tandners' Brook, and from the Clock Tower to the Floating Bridge.

The Paris-Berlin Race.

THE French Automobile Club, desirous of making the Paris-Berlin race a most important event, have appealed to manufacturers to subscribe to a fund to provide substantial money prizes. A special train will also be chartered to follow the race. It is now almost certain that the whole of the Panhard and Levassor stable of 40 h.p. cars will compete, and be driven by Messrs. De Knyff, Charron, Girardot, Voigt, Loysel, Giraud, de Périgord, de Chasseloup-Laubat, Pinson, and Leys.

A Popular Proverb Illustrated.

A SMALL mishap occurred in Farnham last Sunday, which afforded some amusement to the spectators, if not to the actors in it, and may give a timely caution as to the necessity under certain circumstances for extra efficiency in motor horns, as its lessons to the other parties concerned will probably fall on stony ground. A car with two occupants was overtaking a milk-cart, which persisted, in spite of repeated and continuous blasts, in keeping its wrong side. As the motor came up, a man hastily jumped down from the back of the cart, with the object, as the motorists evidently thought, of holding the horse, so they

attempted to pass on the left side; the man, however, seized a milk-can, and without looking round, rushed in front of them, and though a timely swerve and application of the brakes enabled them to avoid him, his can caught the mudguard and discharged its contents—more than a gallon—over the lady occupying that side of the car. Mutual recriminations ensued, the milkman asserting he had not heard the horn—a statement which was evidently true, though not excusing his being on the wrong side; and the ultimate conclusion was that honours were about even, the lady taking her milk bath most philosophically and both sides recognising the proverbial inutility of lamentation under the circumstances. The risk arising from vehicles so noisy as to prevent a horn being audible is, however, obvious, and milk-carts are among the worst of these offenders.

The A.C.G.B.I. Motor-Cycle Race Meeting.

THE Automobile Club will hold its motor-cycle race meeting on the track at the Crystal Palace on Saturday, July 17th next. The following is the programme as so far arranged. 1. One Hour Scratch Race for motor-cycles for the Autocar Challenge Cup (perpetual trophy). Club medals to first and second. Holder, Mr. F. F. Wellington. The record for the track was beaten in this race last year. 2. Five Miles Handicap for touring motor-cycles for the *Motor-Car Journal* Challenge Cup (perpetual trophy). Holder, Mr. F. F. Wellington. Club medals to first and second. This race has been altered from a scratch race to a handicap by permission of the holder. 3. Ten Miles Handicap for all classes of motor-tricycles for the *Automotor Journal* Challenge Cup (perpetual trophy). Club medals first and second. 4. One Mile Open Handicap for motor-bicycles for Cup offered by Mr. Campbell-Muir. Club medal to first and second if more than six starters. Entries on forms to be obtained of the Secretary of the Competitions Committee of the Automobile Club, close on Monday, July 12th. For the above races, both riders and machines must be registered according to rules of the A.C.G.B.I.



THE SCOTTISH AUTOMOBILE CLUB'S RUN TO SELKIRK: THE PARTY AT MR. W. S. STEEL'S RESIDENCE AT PHILIPHAUGH.

A Motor-Car Meet at Spalding.

THERE was a very interesting display of motor-cars at Spalding on Monday, on the occasion of the meet of the Lincolnshire Automobile Club, although, owing to the holidays, many of the members had gone out further afield on lengthy tours. After a lunch, provided by the Ayscoughfee Hall Committee, the cars went together to the Ayscoughfee Hall grounds, and there paraded in a large enclosure, round which there were many thousands of people. The motorists included Mr. Belcher, works manager of Humber's Works, Beeston, on one of the new cars just turned out by that firm; Mr. Ross Browne, of the Nottingham Club, on a sister car; Mr. C. Lovett, of London, on a 10 h.p. Benz car; Mr. R. H. Kirk, on a 12 h.p.

Peugeot; Mr. Beales, of Spalding, on a 3 h.p. Benz; Mr. Dennis, of Kirton, on a new Progress voiturette, and Mr. C. Holland, of Boston, on a Progress car, his son driving a 2½ h.p. Progress tri-cycle. Mr. C. Nelson drove his Benz, and Dr. E. Cragg, of Billingborough Hall, also drove a Benz, while Mr. R. M. Wright, of Lincoln, drove down after the parade on his Progress voiturette. The party were afterwards conducted round the beautiful garden and hall, which are being bought for the town.

The Incorporated Society of Municipal Engineers.

AT the conference of the Incorporated Society of Municipal Engineers, which is to be held in Leicester on June 28th and 29th next, it is proposed that the members of the A.C.G.B. and I., and of the Nottingham and Midland Automobile Clubs, should take the members of the Society for a drive on Saturday, June 29th, from Leicester, and, further, that a paper should be read by a member at the conference. The Nottingham Automobile Club hope to provide seats on motor-vehicles for fifty members of the Society and members of the A.C.G.B. and I., and the Midland Automobile Club are to be asked to drive their vehicles to Leicester to take the remaining hundred engineers. A luncheon will be given, to which members of the various Clubs bringing cars will be invited to join the members of the Society of Municipal Engineers, probably at about 1.30 p.m., and also to a sort of high tea and other refreshments later on in the afternoon. The Committee of the A.C.G.B. and I. propose to make a Club tour of this event, leaving Whitehall Court at 12.30 p.m. on Friday, June 28th, for Leicester, via St. Albans, Dunstable, Hockcliffe, Newport Pagnell, Northampton, Market Harborough, and Leicester.

Truth and Motor-Cars.

Truth is very angry with the opposition still shown towards the motor-car in some quarters, and says:—"The blind, unreasoning aversion to motor-cars which is displayed by many of the County and District Councils would be amusing if it were not for the possibility that these bodies may succeed in seriously hampering a growing industry. . . . The motor-car is an innovation, and therefore they stupidly oppose it, just as their fathers and grandfathers opposed railways."

Troubles in Austria.

THE Statthalter of Lower Austria, in consequence of complaints of the police regarding the excessive speed of automobiles, has sent a letter to the Automobile Club of Austria requesting the officials to impress upon the members the necessity of avoiding an excessive speed. To this letter the Club has sent a long reply in which it is stated that it cannot be denied that certain automobilists drive very fast and lay themselves open to accidents. This is, however, the exception and not the rule. The greater number of prosecutions are, however, really due to the fact that the police authorities do not completely understand the automobile. An automobilist when driving at full speed can bring his vehicle to a standstill within two metres, and can therefore drive up to an obstacle without diminishing speed to any great extent. The great danger of a vehicle in the public streets does not lie in the speed at which it is driven, but in the difficulty of pulling it up. A carriage drawn by a horse driving at a slow rate of speed, but which can only be drawn up within seven metres, is much more dangerous than a fast travelling automobile, which can be brought to a standstill within two metres. The complaints against automobilists outside of the city have chiefly to do with the frightening of horses. In the country almost every driver goes to sleep, and in most cases so soundly that no signal made by the automobile is able to wake him. Consequently, no precaution taken by the automobilist can under these circumstances prevent the horse from shying. Then again, when the drivers go into a public-house they regard it as superfluous to look after their horses, with the result that when an automobile comes suddenly on the scene they are liable to bolt. At the conclusion of its

letter the Austrian Automobile Club expresses the opinion that the state of affairs at present is similar to that at the introduction of the bicycle, and that in a short time people and horses will get accustomed to the automobile as they did to the cycle.

The Brake Power of Motor-Cars.

A DEMONSTRATION of the great power of the brakes on motor-cars took place at Lincoln recently. Mr. Peel, the manager of the Lincoln Tramways Company, whilst riding, passed a motor-car, and on nearing the G.N. railway crossing gave way for a dray to turn into High Street. The horse Mr. Peel was riding slipped on the wet wood pavement and came down, the car, which had also turned away to give room for the dray, being close upon him. The driver of the motor-car at once applied the brake, and pulled up within about a foot of the fallen animal, and what might have been a very serious accident was thus averted.

"The Motor-Car Manual."

MR. MOFFAT FORD's useful little work, "The Motor-Car Manual," published by the Motor-Car Company, of 168, Shaftesbury Avenue, has now reached its third edition. It is just what it professes to be—"An introduction for the absolutely uninitiated to the whole subject of automobilism." To that large and growing section of the community now beginning to consider the question seriously, Mr. Ford's Manual is particularly suited, and will no doubt go far to turn many a waverer into a confirmed motorist. "How to Buy a Motor-Car" is the heading of the first of the five parts into which the work is divided, and the advice given therein is good. What is equally important to the possible purchaser is, that it is written in a manner intelligible even to the least mechanical mind. The same easy style marks subsequent chapters, of which "When a Motor Won't Work" is full of useful hints, not only for the novice, but also for the old hand. The law relating to motor-cars is fully explained, and that part of the work devoted to the earlier history of motoring is excellent reading.

Roads Improvement Association.

NOT content with the excellent work which it has done during the fourteen years of its existence, the Roads Improvement Association intends to bring pressure upon Parliament to amend the existing system of administration as at present applied to the roads throughout the country. Centralisation of responsibility is, in a word, what the Association aims at bringing about. The 20,000 miles of road possessed by our country, it is hoped, will shortly be taken out of the hands of the various Councils through whose administrations they run, and come under the control of a Government department. As a result of such an arrangement a standard type as regards width and some other important points might be expected, also economy to the ratepayer, the one department requiring a smaller plant for road making and maintenance than that collectively held by various Councils now responsible. From a patriotic standpoint the Roads Improvement Association is also doing good work. Wider and better roads are necessary for the purposes of national defence, and the absence of sufficient roads suitable for the movements of troops and the transport of stores has long been a cause of grave concern to military experts.

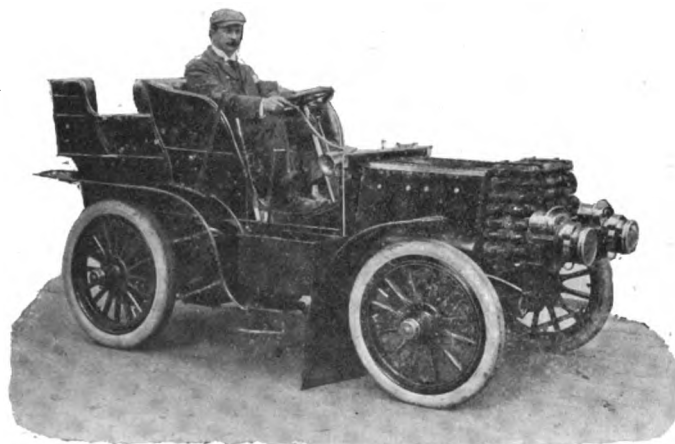
Ideas for Sale.

FINANCIAL as well as public interest in the automobile is steadily increasing; not only are companies being suggested for the development of public motor-car services, but enterprising gentlemen are coming forward with ideas for the flotation of such ventures. One such person has written one of our correspondents offering a plan for an automobile service in and around London—for a consideration—and all he wants is the necessary capital to be supplied to enable him to go forward with the notion. We would suggest our friend giving

his views to the world, for the general use of the industry, and not retain them to simmer in his own head till the man of means comes along.

Anti-Exercise.

THERE is one danger of the automobile to which attention is being drawn by some writers in journals dealing with country life and rustic pursuits. And that is the tendency of motor riding to destroy the desire for exercise which is encouraged by love of the horse. It is pointed out that horsemen are becoming content to sit behind a wheel and enjoy the fresh air of the country without the exhilarating use of the muscles which is associated with other outdoor pastimes. Of course, there is something in the objection—were it true that the automobile is destructive of that love of the horse which is inherent in an Englishman's nature. But the facts should not be distorted, and such far-fetched ideas should not be encouraged. The popularity of the automobile will not do away with horse-riding as a means of exercise; but it will bring into the open fresh air of the country many invalids and delicate persons whose health will not allow them violent pastime, but who will find in the calm enjoyment of a ride on a motor-car a source of health and a lengthener of their days.



MR. ROGER FULLER ON HIS 16 H.P. NAPIER CAR.
Photo by) [Argent Archer.]

Doctors and Motor-Cars.

One of the most notable features in connection with the publicity accorded the Motor-Car Exhibition was the extent to which it was noticed by the medical Press. And what was even more satisfactory was the practically unanimous praise bestowed on motor-vehicles. "If the makers would but give us a reliable machine we would have no doubt about the motor-car being the best vehicle for the medical man." Such was the conclusion of more than one journal. Seeing that reliable vehicles are now numerous it is little wonder that in every London suburb doctors can now be found using automobiles in their practice, and recognising the suitability of such vehicles in no uncertain way.

Motor-Car Accidents.

Two years ago we could hardly take up a prominent newspaper without seeing some striking headlines concerning "motor-car accidents." Many of these "accidents" were merely commonplace incidents; a large number were trivial occurrences in which motor-cars played a very secondary part. It is very satisfactory to observe that pressmen are recognising the unfairness of putting every roadside mishap down to the discredit of the automobile, and it is gratifying to find that a car can be left by the pavement without so much general conclusion as to a break-down. These two tendencies are becoming more

and more noticeable, thus demonstrating the rapid education of the people, and leading us to hope that the period of prejudice is giving way to the time of universal popularity.

Too Much Light.

AMONG society people the grounds of objection to motor-cars are changing and we hear more said about the lamps employed on cars than the wickedness of the cars themselves. Everyone recognises that the automobile cannot be interfered with in day time, and so a criticism is now going the round of the Press directed against the use of large brilliant lamps on motor-cars. Some cars carry a great many lamps, and it is pointed out that the mail coach driver is prepared to go on his night journey with comparatively feeble lights; why then should motorists want four or five brilliant lamps to scare any nervous horses that are allowed out after dark? This is a question asked by the *Court Journal* in a very serious way. When will motorists satisfy everybody?

Back to the Land.

MR. RIDER HAGGARD, weary of South African romances, is now finding excitement in visiting agricultural districts and urging us to get "back to the land." Yes, we agree; and add the suggestion that the motor-car will prove an excellent means to that end. Just as light railways have been helpful to some Irish districts where ordinary locomotives would have been impossible, so will the motor-car enable small holders and market gardeners to get their produce rapidly and cheaply to the centres of consumption. This is a fact that should be brought prominently before the agricultural community who have long complained of the rapacity of railway companies and the present difficulties of transit. Nowadays land near railway stations always lets easier and at better rates than that far removed. But if each village had its own motor-car service this distinction would be removed, and the chances of successful and profitable cultivation would be generally extended.

Not on Piers.

HITHERTO pedestrians, bicyclists, and motorists have been allowed on the West Pier of Kingstown. Now—and the decision to enforce the rule was carried unanimously—the latter will have to leave their cars behind them when seeking the pleasures and delights of the pier. One gentleman declared that the motor-cars did more damage in one week than the bicycles did in a year, and not a single member of the Kingstown Urban Council had a good word for the cars. So they adopted the resolution unanimously, and adjourned immediately. No wonder!

A Time Table.

THERE is an excellent motor-car service between High Street, Hemel Hempstead, and Boxmoor station conducted by the Hemel Hempstead Motor Car Company, of which Mr. A. F. Pemsel is the secretary, and Mr. W. L. Wilson the engineer. The cars commence running from Hemel Hempstead at 7.30 a.m., and the last vehicle returns from Boxmoor at 9 p.m. meeting the most patronised trains throughout the day. If five seats are booked special trains are met. The fares are reasonable and the company is to be congratulated on its excellent time table.

What Can't be Cured.

No apology is surely needed for reverting to this subject, for the dust, under the present climatic conditions, is lying thicker on the roads than ever, and it is hardly to be hoped that any new vehicle will appear—unless it be Sir H. Maxim's aeroplane, brought up to date with "magnalium"—that can traverse the country without raising it. Even on American railways its effects are felt, and a method said to have been adopted

there was to water the track with petroleum—if such a Hibernicism be permissible—the effect of which was said to be satisfactory. Such a remedy is hardly applicable to highways, and, if it were, would probably be considered by the motophobes responsible (metaphorically *bien entendu*) for the dust agitation as worse than the disease. Seriously speaking, however, the most promising solution of the difficulty will probably lie in improved means for removing the dust. At present the scavenging of roads—where this is done—is usually accomplished when the dust is converted into mud, and under these conditions the removal of a ton of dust involves the transport of about a ton and a half of unnecessary water. If a suitable and economical machine, probably motor driven, could be devised for collecting and removing the abraded road-surface while in a dry state, the problem of good and clean roads would make a great step towards solution.

Round the World.

Two young men living at Alton, U.S.A., have announced their intention of circum-motoring the world. They propose to start in June next without a cent, and earn their expenses as they travel, by lecturing on American life and customs. England will be the first country visited, then they will go to France, across the Pyrenees to Spain, then back to Switzerland and Italy. From Rome they will cross the Mediterranean to the Barbary States, go thence to Egypt and up the Nile, then across the Mediterranean again to Greece, and then to the Holy Land. From there they hope to be able to push through overland to Hong-Kong. If they survive the trip through the hostile Chinese provinces they will visit the Philippines, and return home by way of Honolulu and San Francisco.

No Fear of Explosion.

THE idea once prevalent that steam-cars were liable to explode is itself exploded is the wise deduction of the *Court Journal*, otherwise the King, who is well advised on motoring, would not pin his faith to his sixty miles an hour Gardiner-Serpollet, as he does. The King has also, as everyone knows, a couple of petrol-driven Daimlers. The Queen prefers electricity as a motive power, so that as far as Royal patronage goes honours are equally divided amongst the three systems.

Motor-Car Construction in Australia.

WE learn that a fine 6 h.p. motor-vehicle has just been built in Melbourne, Australia, by Mr. Sutton, to the order of a gentleman in that city. The entire vehicle is of colonial construction. The car seats four people comfortably, and is planned to travel at a speed of fifteen to seventeen miles an hour over fair roads. The motor is driven by ordinary kerosene, and is claimed to leave no unpleasant smell when treated by the Sutton patent. An experimental tour is to be taken by the owner and designer at an early date throughout the Western District of the Colony. The body of the carriage is built on American lines, the wheels being fitted with 2½ inch pneumatic tires.

The Centre of Gravity.

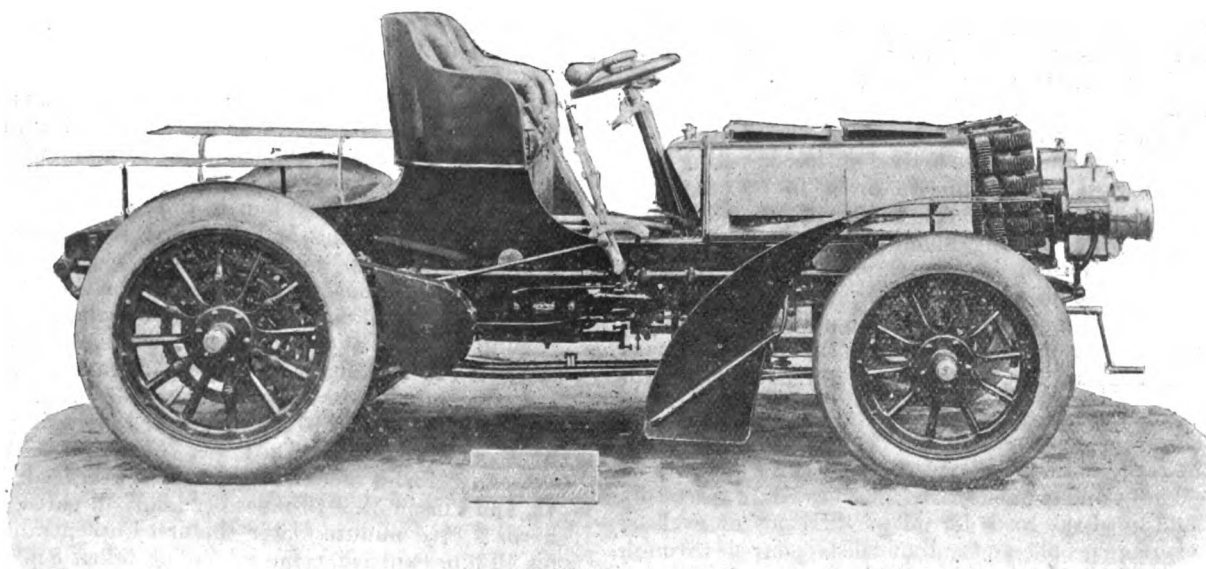
OBSERVATION of motor-cars in various parts of the country shows that some builders are not adhering to strictly scientific principles. Reference is made to the practice of propping up vehicle bodies far above the frame. It is a matter of general mechanical knowledge that this principle, as applied to motor-cars, if carried to extremes, is incorrect and is evidently copied from the prevailing fashion of high horse carriages, which are built in that manner so as to permit of the occupants seeing over the horse. While this is by no means a general practice, it is well to take into consideration the fact that self-propelling vehicles, built to run at speeds ranging from 15 to 25 miles per hour, should have the bulk of the weight, and, consequently, the centre of gravity, as near the ground as possible.

The Paris-Bordeaux and Gordon-Bennett Cup Race.

"BY AUTOMAN."

THE A.C.F. might almost have been an English Club at the latter end of last week, and at the beginning of this one, as at every turn one recognised faces familiar to the motorists' happy hunting grounds at Whitehall Court. I met Mr. Alfred Harmsworth in the Rue de Rivoli driving his Panhard at a reasonable speed early on in the week. He came to Paris to take delivery of his new 12 h.p. Serpollet steam car, on which he drove out to Versailles and back for a trial trip. The car, which is painted dark green and upholstered in buff-coloured cloth, is a sort of landau, with four comfortable seats inside and two seats on the box. Only the back half of the carriage opens, the front half being a fixture on the top of which luggage can be carried. The carriage work has been carried out by Kellner in a luxurious style, and the vehicle is essentially intended for comfort and not for speed. Mr. Harmsworth left Paris on Sunday morning last for Bordeaux in his newly-purchased car, accompanied by Mr. Alfred Bird, of Birmingham. The

Tuesday was a busy day at the A.C.F., and brought another batch of members of the A.C.G.B.I. Mr. Fuller arrived on a De Dion voiturette and Mr. Howard on his 5 h.p. Marshall. Messrs. Farman, Worby Beaumont, Stead, Instone, and many other well-known automobilists were collected to watch the process of numbering and stamping the cars. Certainly, the Napier occupied the attention of everyone, whether English or French, more than any other car. It is a real giant alongside of the others, but it, nevertheless, glided smoothly into the Club *garage* without any jerk, and only the deep note of its powerful motors gave any indication of the bound forward it could make. The sound it makes is unmistakable, and I heard a well-known Franco-Swiss *chauffeur* tell how, whilst he was seated in a restaurant on Sunday night, he heard it coming, and exclaimed, "That is not a Panhard or a Mors; it is either a railway locomotive or the English Napier car arriving for the Gordon-Bennett Cup."



THE MOTOR MANUFACTURING CO.'S 20 H.P. RACER.

latter gentleman arrived in Paris on Wednesday last week, in his capacity of chairman of the A.C.G.B.I., and accompanied by Mr. Claude Johnson, with the object of finding a suitable *garage* for the English Gordon-Bennett cars. I noticed Messrs Bird and Johnson amongst the spectators at the entertainment given by the A.C.F. on Wednesday, the 22nd ult., in the very pretty bijou theatre attached to the Club's premises. The Napier car turned up during the early hours of Monday morning, and with it, or in its wake, Messrs. Napier, S. F. Edge, Mark Mayhew, Gregson, Jarrott, Cecil Edge, and Du Cros, jun. The Hon. C. S. Rolls was, of course, soon on the scene, but, as is most unusual with him, unaccompanied by a motor-car. Mr. Phillips arrived to complete the party, and several others whose faces I have seen in Whitehall Court, but whose names escape my memory. No great automobile event would be complete without the presence of Sir David Salomons, and when we all adjourned to the A.C.F. to lunch Sir David was at the head of the table.

The Napier car above mentioned was in reality the property of Mr. Rolls, but he cancelled the order last week on account of late delivery, judging that it would be unwise for him to run the car in the Cup Race before having had ample opportunity of testing its capabilities and powers of resistance. Mr. Mark Mayhew stepped in the breach and took over the car.

A good petrol story is connected with the arrival of Mr. Edge on Mr. Mark Mayhew's 70 h.p. Napier. The *New York Herald* of Monday morning came out with the news that Mr. Edge had lost his Napier car on Sunday. It seems that, said the writer, Mr. Edge had been for a trip in the Bois on Sunday and had sent his driver off with the car whilst he partook of lunch, giving the latter a rendezvous later on. The watchful police, however, had their eyes on him and locked him up, together with the car, for furious driving and also for not having a permit. However, on making anxious inquiries from Mr. Edge on Monday morning, I learned that, first, the car only arrived in Paris in the night between Sunday and Monday; secondly, that his driver was duly certificated; and thirdly, that the latter had never been allowed to drive the new car.

I had an opportunity of examining the car, thanks to the courtesy of its owner, maker, and pilot. The point that first strikes the casual observer is certainly the great engine power, suggested by the size of the bonnet, which is not flat like that of the Mercedes car, but sloping downwards away from the driver. It was easy to see that a great effort had been made to have the car ready in time for the race, and that it had not been possible to attend to small details and give it a finished appearance. Unfortunately, it was not able to compete for the Cup on account of the want of good covers for the back

THE GENERAL AUTOMOBILE AGENCY, D. Farman, Man., Garage open day and night, all cars in stock, 100-104, Long Acre, W.C.

ires. In accordance with the rules of the competition the whole car must be of British manufacture, and the Dunlop Company have not been able to produce a cover that will stand the strain of the fourth speed. The tread has been found to come off in sections, making it dangerous if not impossible to attain a high rate of speed with Dunlop covers. The problem of manufacturing racing tires is a difficult one to solve in England, for, although the Dunlop Company has made an effort in this case, it has been impossible to try the tires or experiment with them when once made. This, of course, on account of the speed regulations and restrictions. The owner of the car came therefore to the very sensible decision to run the car with Michelin tires in order to show its capabilities and to publicly declare a forfeit as regards the Gordon Bennett Cup, in order to allow of no misunderstanding.

Nothing could have been more perfect than the state of the weather and the condition of the roads for the greater part of the motor-car race held between Paris and Bordeaux on Wednesday last. A few slight showers of rain fell in Paris on Tuesday, and then the weather gradually cleared up, the night setting in with a clear sky. Paris had quite a preoccupied air, as if on the eve of a great event, and motor-cars scudding about the avenues and streets attracted quite an unusual amount of attention, the passers-by seeming to ask themselves, as they heard the familiar horn, "Is this one of the competing cars?" On the Place de la Concorde, outside the premises of the French Automobile Club, a crowd, made up mostly of *chauffeurs* of all nations, watched with interest the arrival of the competing cars, as they came forward one by one in order to be numbered and marked for the race. All kinds of rumours and counter-rumours were floating about with reference to the competitors for the Gordon-Bennett Cup, but they gradually crystallised down to the disappointing information that no other nation but France was in a position to come up to scratch, and that the cup would be competed for only by the firms Panhard and Levassor and Mors. The British car could not compete for want of tires.

The start from Suresnes should have taken place at 3.30 a.m., but really did not take place until three-quarters of an hour later, but in spite of the early hour crowds of spectators turned out and lined the roads for miles. Streams of cyclists, pedestrians, carriage people, and automobilists poured through the Bois de Boulogne all night long, and the trains to outlying townships on the line of route were all crowded. As far away as Chartres, 79 kilometres from Paris, I found it quite impossible to get a bed, and at the Hotel du Grand Monarque, the yards, stables, entrances, coachhouses, and the road in front were crowded with motor cars, more than forty of which had been turned away during the day.

I posted myself at the top of a hill two or three miles from Chartres on the road to Bordeaux and listened to the nightingale singing in the woods. Gradually the sun rose in a lovely sky, and the cuckoo made itself heard across the fields. Levegh was the first to turn up on a Mors running splendidly, followed by Girardot on a Panhard, and Voigt, also on a Panhard. Edge came next on Mark Mayhew's Napier, running very strong. I heard his engine steadily beating, and it gave me the impression that if the tires held good he should have a fair chance of success; he waved his hand in answer to my call as he went by. Hourgières came next on a Mors, and then followed two Panhards and a motor-tricycle, all in a bunch. Charron was ninth, his engine evidently giving trouble—I could only hear two cylinders working—Giraud, Andre Axt, Teste, Farman, and Pinson following. At Chateaudun Levegh still led, with Girardot second, at an interval of 11 min., and Fournier third, with Voigt right close up to him, and Farman 25 min. later. At Tours (220 kilometres) Fournier and Voigt had both got in front of Girardot, Farman still keeping his place. Levegh passed Sainte-Maure (255 kilometres) at 7.56, and then he seems to have dropped out of the race after this. At Ruffec (388 kilometres) Fournier was levelling with Voigt, Farman, Axt, Giraud, and Girardot following.

As I am writing the order of arrival at Bordeaux is just being chalked on the board of the A.C.F. as follows:—

	Arrived. p.m.	Average speed. Kilos. per hour.
Fournier	1.9	83.727
Farman	2.3	77.372
Voigt	2.8	71.3
Axt	2.41	66.666
Giraud	2.59	63.727
Pinson	3.6	66.806
Teste	3.13	64.765
Girardot	3.28	58.78
Hourgières	3.33	60.341
Osmond	3.39	64.503

Fournier's average speed works out to about eighty kilometres per hour. So far no accident has been reported. At about 3 p.m., torrents of rain came down, drenching those who had not already reached Bordeaux. The Napier car seems to have dropped back between Chartres and Tours, no doubt with tire troubles, and at the time of writing there is no news of its arrival in Bordeaux.

A disappointment at the start, the Gordon-Bennett Cup contest became an uninteresting event long before the end. Of the three French *chauffeurs*—M. Charron on a 40 h.p. Panhard, M. Levegh on a 48 h.p. Mors, M. Girardot on a 40 h.p. Panhard—who left Paris on Wednesday morning to compete for what was originally intended to be an international trophy, not one finished among the first seven of the racers on the road. The first car actually at Bordeaux was the powerful Mors driven by Fournier, who was not running in the Cup race, but in the Paris-Bordeaux competition. The winner arrived in a huge cloud of dust at 1 h. 9 min. 44 sec., having left Paris at twenty-five minutes past four in the morning, covering the total distance of 348 miles in 6 h. 7 min. 44 sec. net time, being an average speed of 56½ miles per hour.

The "net" times given represent the times taken from start to finish after a deduction of 2 h. 37 min. has been made for passing through the towns and villages, where the speed was restricted to 12 kilometres an hour. An hour later the second car came in. This was M. Farman's 35 h.p. Panhard, his time being 6 h. 37 min. 15 sec. net time, averaging 52½ miles an hour. M. Voigt's Panhard was third in 7 h. 12 min. 11 sec., averaging 48 1-3 miles an hour. Axt averaged 44 4-5, Giraud 43, and Pinson 39 9-10 miles per hour, all three being on Panhards. Five minutes later the first Cup entrant, Girardot, on his 40 h.p. Panhard, came in, having taken 8 h. 47 min. 59 sec., averaging 39½ miles. At 6.15 p.m. Wednesday no other Cup car had arrived, and there was no sign of the big Napier car, which was last heard of 220 miles from the start.

At Chateaudun, Charron had a collision with Levegh, and did injury to his pneumatic tires, which took him three-quarters of an hour to repair. Both, however, continued as far as Vendome, when Charron, recognising that his chances were hopeless, gave up.

This is the second Gordon-Bennett Cup race, and the fourth Paris-Bordeaux contest. Previous times have been: 1895, 22 h 25 min., Levassor, on a 4 h.p. car; 1898, 15 h. 15 min., Rene de Knyff, on a 6 h.p. vehicle; 1899, 11 h 43 min. Charron, on a 12 h.p. car. The first Cup contest took place on the Paris to Lyons road, 566 kilometres, or about 351 miles, Charron winning in 9 h. 9 min.

At the last moment, the Motor Manufacturing Company, Ltd., decided to withdraw from the Gordon-Bennett race the car built for the contest. Under date the 24th ult., the Company write us as follows:—"The principal reason for our doing so is the almost impossibility of obtaining the necessary trial run of at least a hundred miles over any roads within a convenient distance of our works. The car was on the road yesterday, but by reason of the horse-drawn traffic the driver was compelled to pull up continually, consequently subjecting the gear every few seconds to enormous strains. Moreover, such was the encumbered state of the road that he could not try the fourth speed at all." We give an illustration of the car herewith; it is fitted with four M.M.C. De Dion type engines, developing up to 30 h.p. The road wheels are shod with Collier twin pneumatic tires.

A RUN ACROSS FRANCE ON A RACER.

By A. R. SENNETT.

(Continued from page 219.)

THERE cannot, indeed, be a shadow of doubt that motoring is a health-imparting pastime. What a contrast to travelling by train! There it often happens that on emerging from a stuffy carriage, after a wearisome journey, one seeks for something to "tickle" one's carburettor—pardon, appetite. But your *chauffeur*, on descending from his "box"—pardon, *seige*—is in the mood to eat anything, if not everything that may be placed before him. In the good old coaching days, when St. Martin's-le-Grand was alive with fours-in-hand and eleven-mile-an-hour stage-coaches, there gazed down upon them a smiling face with enormous mouth, protruding in bas-relief from the grimy walls of the great coaching hostelry. This mouth surmounted the legend:—

Milo, the Cretonian,
An ox slew with his fist;
And eat it at one meal.
Ye Gods! What a glorious twist.

Perhaps a day will come when such another, but motor, hostelry shall rear itself at the Arthur Balfournian centre, and which shall bear this superscription:—

Rollo, the Chauffonian,
An ox slew upon the *piste*,
And eat it for his dinner—the sinner,
Dieu, motorists! What a glorious twist.

Perhaps that which is most intimately connected with the *chauffeur's* health is his clothing. At first sight this might appear a matter of small importance, but really it is one which may fairly command space for discussion by those actually conversant with motoring at high speeds. Already quite a small industry is springing up in fulfilment of the *chauffeur's* requirements. What these are is open to discussion, what he should not use is more obvious. He should certainly not don anything in the nature of a loose garment such as an overcoat or impermeable having a loose cape which may blow over the face and cause an accident. Besides, such loose things are very wasteful in buttons, for few will be left after the first 100 kilometres. The wind at sixty miles per hour—which we believe Jack calls a stiff gale—has to be experienced to be appreciated. It reminds us of that to which he referred when he said, "The wind it blow'd so 'tarnationally hard, it blow'd three teeth out o' the carpenter's saw and took six men to hold the cap'n's wig on." Trousers, too, are far from suitable nether garments, acting, in fact, as forced-draught pipes. We consider, then, that trousers should not be worn; nevertheless, it would be advisable to wear something in place of them. Laced boots also are unsuitable, and so is any form of headgear presenting a greater vertical surface than is absolutely necessary to the wind. Starched collars are unsuitable, and are also difficult to find at the end of a wet run, when they assume the appearance of a roll of brown linen round the lower part of the neck. The collar, however, will probably die hard, and we observe that some *chauffeurs* are taking to "spitters" as a compromise—i.e., celluloids, which may be expeditiously and economically washed, with a very small volume of water, *en route*. Celluloid—otherwise guncotton—should obviously be used sparingly; and certainly the transparent "celluloid" or "xylonite" guards intended as preservatives of ladies' complexions should not be had recourse to. Shirt cuffs should not be worn, for, like the Irishman's flea, when you go to put your hand upon them they're not there, you find only an accordion-pleated—accordin' to its fancy—tube of limpness. Moreover, *chauffeurs'* shirt cuffs become chameleons, for it is astonishing how marvellously they change colour after "visiting" the motor. The cuffs of coats also should be specially constructed to prevent the "weather" blowing up the arms. This can be done in two ways, by a buckle and strap at the wristbands, or by—and which is preferable—a false sleeve and strong elastic "gathering" worked in under the outer sleeve.

With regard to the material, we feel that the old English adage, "nothing like leather," applies perfectly in this case for

ordinary wear, whilst for cold and bad weather nothing can compare with Nature's own *vêtement*—viz., the skin with the fur left on; something with good long hair, such as bear or raccoon, which is capable of efficiently throwing off both dust and rain.

Were we asked our opinion of what the automobilist's costume should be, we should say that for ordinary driving, especially with ladies, it should be as nearly as possible that of a gentleman driving his carriage and pair. A well-appointed automobile never looks so well as when it is garnished with well-dressed women, its driver turned out in much the same "rig" as he would appear on the box of his four-in-hand. For high speed motoring, however, we consider that the best costume would consist of a *casquet*, a pilot jacket, and knickers, all in leather, and preferably of a lightish brown colour, which is cooler, and which will serve as a distinction between the *amateur* and paid *chauffeur*. The knickers should be provided with rather deep continuations and should be full at the bottom. The "get up" would be completed by top boots—probably brown in colour, of such height that they would come well up beneath the overlap of the knickers. Motor top boots should be made upon the "puttee" plan, that is to say, with a spirally-arranged strap, so that they may be made to fit tightly round the calf.

The *casquet* should be of dull leather with a wide enamelled peak, and it should not have holes in the front, as some have, through which the air rushes and balloons the crown. The strap should not be of enamelled or "patent" leather with sliders, as is usual, since these are quite useless, the slippery patent leather slackening, and causing many a well-meaning cap to lose its head. In place of the sliders a buckle should be used, and in order to allow for a certain amount of give-and-take, the straps should be fixed to the cap through the intervention of a short length of elastic material. It may be an advantage to be elevated at once to a Grand Duke, if not a Czar, by donning a *casquet* of beetling proportions; but the automobilist will find that size in this regard is a disadvantage. For bad weather we think there is nothing to supplant the long-tried Sou'-Wester, but this should not be of oilskin, as it takes too much room when stowed away. It should be of flexible mackintosh, helmet shaped, and we find an advantage in having the chin tapes stitched to the Sou'-Wester at the hem of the lining and not sewn on to the ear-guards; by this means the latter may be pushed up into the crown when not required, and one's hearing thus facilitated.

Concerning the waterproof, the best we have seen is made by Messrs. Ström et Fils, of Paris, and is fashioned much in the same way as a diver's dress with a neckpiece of thin sheet rubber which clings tightly round the neck in all positions and yet gives perfect freedom of movement. Of course with starched collars this ingenious contrivance is wasted, but a motorist's shirt should be of flannelette built upon the Continental cyclist's pattern, or pyjama, viz., with strings for fastening round the neck. This, combined with a soft comforter round which the coat can button firmly, constitutes a very good form of packing for the neck joint.

With regard to gloves, these require to be much stronger than those of the usual *dilettanti* type, and the most comfortable are those furnished with gauntlets. One other article of great utility, if not of attire, should be referred to, viz., the goggles. These should be carefully designed, and care should be taken to note that the valence is not so long that if it blow up over the glasses vision would be obscured, as this might lead to accident. Also this valence, which is intended to protect the face from the sun as well as from the impact of sharp particles, should be supplemented with a nose guard, for it is upon one's proboscis that "barking" takes place to the most annoying degree. The reminiscence of the red flag before one's eyes is sufficiently tantalising without one carrying a danger signal on one's very nose. We are very adverse to the use of goggles of thin glass, which we consider dangerous, from the fact that a small pebble may break them, possibly with serious result; therefore they should be of stout glass, and also decidedly convex, to prevent the eye-lashes bearing upon them. The best goggles we have seen are those made in Nice, now procurable from Messrs. Ström, as in these the glasses—of substantial thickness—are carried in conical

tubes and well away from the eye, whilst the bearing is taken around the eye upon a padding of soft material.

Racing, it has been truly observed, has improved both the breed of horses and the design of horseless vehicles. We know of nothing better calculated to impress one with the shortcomings of motor-vehicles, as well as to set one thinking on means of mitigation, than a run, at racing speed, over such a course as the Paris-Bordeaux. Just as it is in life that petty annoyances are those most keenly felt, so in motoring the petty defects are those which prove the most annoying. If one runs one's carriage against a tree and finds it *un peu plié*, one takes it into the nearest repairer's shop with the best grace one can command; but if an enjoyable run be suddenly put an end to by such a small thing as a short circuit, or a terminal which has become broken or unscrewed, or a petrol joint which cannot be kept tight by reason of its meagre proportions rendering it impossible to pack it efficiently, one is generally entitled to anathematise.

We had but two *contretemps*, the first due to a broken terminal, the second through forgetting to take in *essence*. With regard to the first, it is surprising that motor builders do not take the precaution, invariably followed by electricians, to convolute or "corkscrew" all leads near the terminals, which, by the way, are not terminals at all, but merely an ordinary quarter-inch iron nut and back-nut gripping a thin plate soldered to the end of the cable. It is much better to use a good substantial binding screw of gun metal provided with a steel set screw having a deep saw cut, suited to be tightened with a penny and provided with a winged lock nut. In the event of such a terminal failing, a convolution may be straightened out, a fresh end bored and gripped in the binding screw, without causing a minute's delay. A broken soldered joint is another matter.

With regard to running short of *essence*, this must have happened to many *chauffeurs*, and there would appear to be room for a simple and reliable indicator. We think that perhaps the most valuable type of such indicator, or annunciator, would be one that would ring an electric bell as soon as the *essence* fell short of a predetermined level. Motor vehicles of every kind should be supplied with ample reservoir capacity for the required fuel, and one does not find much ingenuity being displayed by the ordinary builder—except in the case of racing cars—in utilising the utmost available space for this "essential" purpose, with the result that one frequently encounters equipages on the road hung about with tin cans and *bidons*, like a nomadic, peripatetic, travelling van. No matter what storage may be provided, however, one is apt to *manquer de l'essence*, if one is to rely on one reservoir only, and therefore we strongly recommend that every carriage should carry an auxiliary reservoir sufficient to serve for a short run in the event of the main reservoir giving out; but it should not be connected to the main reservoir, and thus made liable to be emptied at the same time. Speaking of benzoline, one cannot but feel that its dangers have been much exaggerated with us, for in France the requirements of the "motor-horse" are largely ministered to by women and girls, who think little of feeding them with three *bidons* gurgling simultaneously.

Other annoying delays are frequently caused by the loosening of nuts which are not provided with back-nuts. The land yacht designer suffers as much from the depredations due to vibration as does the naval architect, and more so. The timber walls of "Old England" would not have remained taut and staunch as they did had they been placed at the mercy of the pulsations of 10,000 h.p. motors. We cannot too strongly impress the necessity of well-fitting threads and plenty of lock nuts. Something better than the ordinary "union" for pipes—especially steam and *essence* pipes—is wanted. Another point, which was forcibly brought to one's mind after a few *caniveaux* experiences, is the advisability of providing the springs of high speed carriages with some kind of "dash-pot" action. We are inclined to think also that the ratio of the angular displacement of the steering wheel and that of the road wheels is too great, so that at the maximum speed the steering is rather too sensitive, whilst the effect of back lash is exaggerated.

(To be continued.)

GOSSIP FROM PARIS.

(From an Occasional Correspondent.)

NEVER have I seen Charron's in such a state of bustling activity as on Tuesday last. Every visitor to Paris interested in automobilism had a look in there during the day, and this invasion did not tend to simplify the work of the staff, who hardly knew which way to turn. English enthusiasts were in great force, and I noted among others Lord Carnarvon and Mr. Worby Beaumont, while America was represented by the famous Tod Sloan.

DURING Whitsuntide the *agents cyclistes* of Paris were more energetic than ever, and many indeed were the *contraventions* issued against unfortunate motor-men. At least one English visitor—I'll mention no names—was included in this list, and on Saturday evening I saw no less than four cars pulled up between the station at Passy and the Trocadero. I would be one of the first to admit that Monsieur Lépine's brigades have done good work in the French capital, but I do think that their zeal is occasionally exaggerated, and that the motorist is sometimes made to suffer needlessly. One dare hardly drive at all in Paris during one of these periods of police energy, for nothing fitted with a motor is then spared by the brave *agent*. The Bois, the Avenue de la Grande Armée, and the hill at Suresnes are greatly favoured as hunting grounds, but now and again the scene of operations is suddenly shifted to, perhaps, the Bois de Vincennes, situated on the opposite side of Paris, and then woe betide the *chauffeurs* of eastern Paris! So, visitors in particular, *gare aux agents*, and be sure to have all your papers with you.

ONE of the recently-elected members to the Automobile Club of Great Britain, Mr. W. S. M. Burns, was to be seen driving about Paris last week in his new 8 h.p. Panhard, one of the smartest cars turned out by the famous carriage-builders, Messrs. Binder.

THE new Panhard racers give one rather the impression that the motor is tilted up, and that the car sets down at the back. This does not tend to improve the appearance of the car, but one overlooks that in admiring the magnificent lines of the vehicle, which bespeak both strength and speed. I was informed in the A.C.F. garage that some little trouble had been experienced with the clutch, so Napier's are not the only constructors who find this part of a big car a source of anxiety.

ALTHOUGH the majority of English automobilists journeyed to Paris to witness the big race by the Dover or Folkestone routes, still Newhaven was not neglected, and on Friday evening five enthusiasts, at any rate, crossed to Dieppe. These were Messrs. Du Cros and Jarrott, who had already sent on the former's Panhard by the goods steamer, Mr. E. M. C. Instone, and Messrs. Leonard and Wagner. One talked "motor" on board that night.

THE International Motor-Car Exhibition organised by the Austrian Automobile Club opened in Vienna on the 25th ult., and will run to June 6th.

THE Enniscrone and Ballina Motor-Car Company, Ltd., has been registered in Dublin with a capital of £3,000, to work a motor-car service between Ballina and Enniscrone.

MR. A. R. SHATTUCK, the president of the Automobile Club of America, intends touring in Europe during the next three months with a party of French friends, and has ordered a 12 h.p. automobile in Paris, to be ready on his arrival in that city some time this month.

THE Mo Car Syndicate Company, whose extensive works in Camlachie, Glasgow, were destroyed by fire recently, have just taken over the old Underwood Thread Mills, Paisley, recently vacated by Coats, Limited, and will start work in them as soon as possible. Already a portion of motor-car plant has been fixed, and work will commence next week, when some 500 men will be employed.

CORRESPONDENCE.

MOTOR-BICYCLES.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Will any of your experienced readers be so good as to inform me whether motor-bicycles are liable to be taxed? The local inland revenue officer here has demanded 15s. tax. There is a doubt as to the legitimate levy of such a tax. The cycle is used for trade purposes.—Yours truly,
W. S. L.

THE DE DION VOITURETTE.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I should be greatly obliged if some of your readers could give me information respecting the $3\frac{1}{2}$ h.p. De Dion voiturette (not Cudell), as I am thinking of going in for one, last year's make, and nearly new. I should like to know if they are reliable and give satisfaction, and if they will carry more than two or even three persons up most hills with ease. In most cases, however, there would only be one person (the driver) using the car.—Yours truly,
N. VOICE.

HELPING THE FIREMEN.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Happening to pass through Kingston on Thursday night, the 16th ult., on my tricycle with trailer, accompanied by a friend on another motor-tricycle, we came up with an excited throng of people hurrying to a fire. Amongst them I was surprised to see a couple of fireman trotting along on foot to the scene of conflagration. Much to the delight of a big crowd I offered a seat in the trailer to fireman No. 1, whilst fireman No. 2 was accommodated by my friend with a "stand" on his axle. Using plenty of gas and advance sparking we soon touched the legal limit, with the result that our friends of the bright helmets were able to put in some useful work at the fire much sooner than they otherwise would have done.—Your truly,
A. G. J.

RACING CARS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—In reply to Mr. Cobb's letter in the last issue, I certainly was not aware that the Serpollet car was "left" on the hills, and I am obliged to him for pointing out the fact. I should feel equally obliged to him for pointing out anything else in connection with the Serpollet car which might be of interest. In reference to his remarks *re* Daimler motor and Panhard gear, he is, as he suspects, mistaken in my identity; I have not and do not intend to make any disparaging remarks about the work of men who have spent years of their life and enormous sums of money in developing a great industry. I merely wish to discuss the matter in a perfectly friendly way, because the subject is an interesting one, and I think that the steam-car, if suitably designed, is capable of developing more power for weight, and consequently speed, than is possible with an explosion motor-car; that is, with existing state of knowledge.

It is quite possible that in years to come someone will perfect an explosion motor which can be started, stopped, controlled, etc., just as easy as a steam-engine; but until that is done, some form of transmission gearing will have to be used. I should be very pleased indeed to go over Messrs. Napier's works as Mr. Cobb suggests, and will take the earliest opportunity of doing so, for I consider they are a most enterprising firm.—Yours truly,
STEAM.

BELT TROUBLES.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—If your correspondent R. E. L. will try Dicks' belt I should think his troubles should end. I bought one of these about two months ago—2 in. 11 ft.—for my voiturette after

endless trouble with leather belting of all sorts, as in wet weather my belt gets more than its share of wet and mud. I have not had to touch the Dicks since I fitted it, and I find mud and water have not the slightest effect. I now drive in all weathers, thanks to this belt, and have not the least trouble in this direction; my car has neither jockey pulley, loose pulley, nor belt tightener, and the latter does not seem at all necessary. I took a fancy to the Teon belt (similar to Dicks'), but as the latter shows no signs of giving out I have not had an opportunity of testing it yet. It has the appearance of being an improvement even on Dicks', being copper-sewn, water, acid, and heat proof. They have also some good fasteners, that I am using with satisfaction, these being a stamped steel affair, with two rows of long teeth. I don't know their name, but they are satisfactory.—Yours truly,
A. E. J. STEELE.

GREASE CUPS WANTED.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Can you, or any of your readers, inform us where we can obtain grease cups marked "Patent Centre Screw, London"? We experience great difficulty from the constant loss of the ordinary pattern screw caps on our public service cars.—Yours truly,
THE P. AND W. COMPANY.

WET AND DRY BATTERIES.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Will any of your readers be good enough to give me their opinion of the relative merits of wet and dry batteries for ignition purposes of a $2\frac{3}{4}$ h.p. De Dion trike? I am using the latter, but they appear to run down quickly. It seems a great advantage to be able to recharge by the roadside if there are no corresponding disadvantages.—Yours truly,
W. T. FOSTER.

THE motor-car service between Chester and Farndon, started by Messrs. Watson and Company, of Liverpool, is, we hear, proving very successful.

THE Coventry Components, Limited, of Parkside, Coventry, whose 1901 catalogue has reached us, display, amongst other things, motor mud-guards and rims which should interest the trade.

MR. A. E. MAJOR, of Reading, informs us that he has just taken over the premises No. 30, Broad Street, in that town, as well as his present dépôt (No. 29), and when the necessary alterations are made he will have a *garage* for twenty cars in the main street of the town.

THE Roubeau carburettor, illustrated and described in these columns about three months ago, is being introduced into this country by Mr. Van Raden, of 7, Ellys Road, Coventry. The apparatus is nominally suitable for three-horse power motors, but a larger size is made for six-horse power engines.

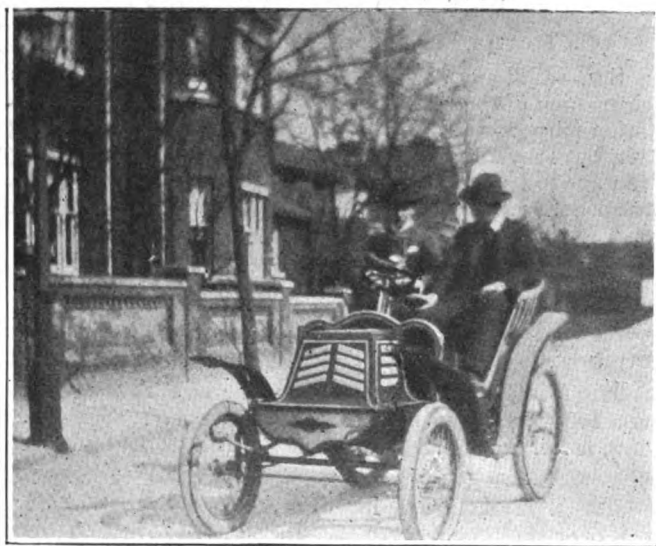
MESSRS. MANN AND OVERTON have opened a dépôt at 25, Mortimer Street, Regent Street, W., where they will carry on business as consulting and practical engineers. They are prepared to store and repair cars of all descriptions, and to give advice to intending purchasers. Messrs. Marshall have also placed their sole agency for the Marshall cars in the South of England in Messrs. Mann and Overton's hands.

WHAT is claimed to be the largest motor-*garage* in the world has recently been opened by the City and Suburban Electric Carriage Company, at 6, Denman Street, Piccadilly Circus, London, W., for the convenience of the owners of vehicles supplied by the company. Here, for an annual, quarterly, or monthly fee, the motor-car can be insured, housed, cleaned, and kept in repair, ready to take the road at any hour of the day or night. The building, which has a total area of 19,000 square feet, consists of seven floors, served by an electric elevator, capable of raising vehicles of three tons weight to the top floor.

FROM HERNE BAY TO CHATHAM AND CHATHAM TO MARGATE.

THURSDAY, April 18th, was the day I chose to run over to Chatham with my brother. The weather was glorious and the roads perfect. We started from Herne Bay about 9 o'clock, and after a little winding about Herne Bay to get on the Canterbury road, owing to some roads being "up," we got fairly started. The car I was driving was a two-seated Pieper voiturette, and a nicer little car of the kind could not be imagined. The low-speed was only used twice on the way to Canterbury. I can assure your readers that the hill-climbing capacities of this car are phenomenal. We duly reached Canterbury, where very slow travelling was the order of the day. One would think that the inhabitants of Canterbury had never set eyes on a motor-car before, and we were held up whilst numerous people ran to hold horses, which would probably have behaved more quietly if they had not. Once clear of Canterbury, a little speed could be indulged in, and the little Pieper ran very well up to the legal limit down hill and on the level. The running was uninterrupted (except for horses) for some time.

Now I am about it, I should like to say a few words regarding horses and their drivers. The majority of drivers pull at the reins in an excited manner and alarm the horses, which other-



wise would have been perfectly quiet; drivers, too, have a habit of stopping one up a hill, and then they never think of saying, "Thank you." To continue, all went well till within about two miles of Boughton, when a leak was sprung in the petrol tank. We stopped, and thinking the leak was at the edge of the tank, tried to temporarily repair with halfpenny stamps; our efforts, however, were unavailing, so we ran on, as we had plenty of petrol, to Boughton, where we removed the tank and had it soldered up at a cycle shop. The leak was at the joint of the supply pipe to the tank, and it seems to me that a petrol tank would be a far better job if joints, etc., were riveted. We were delayed over an hour at Boughton, and we proceeded thence at about a quarter to twelve. We took in some motor spirit at Ospringe, anticipating further leakages, and ran on without a stop to Gillingham. Here we found some stones extending for about forty yards, so we both alighted and allowed the car to run by itself over the flints. A short run then took us to the top of Chatham Hill, which had to be descended with caution. We then ran along the New Road and duly reached our destination.

After lunch, a friend volunteered to show us the points of interest of Chatham, so, with three aboard, we threaded our way through the narrow streets of Chatham. I feel quite confident that it will require a very steep hill to stop the Pieper car; the hills it took us three up were awful. We started back from Chatham at about four o'clock, and the first event of interest was scaling Chatham Hill, which was done easily with reserve

power. We had a glorious run back, the only stoppages being (i) a blown-off hat; (ii) returning a petrol can; (iii) restive horse. Boughton Hill is a stiff ascent, and we were told that "that thing would never get up." "That thing," however, did get up, and very easily too, and we then ran straight on to Margate, where we arrived at seven o'clock.

I think that is very fair running, considering the hills. A word about the car. I think that, for a two-seated, easily managed car, and a good hill-climber, the Pieper voiturette cannot be beaten.

R. A. COBB.

THE AUTOMOBILE CLUB'S WHITSUNTIDE TOUR.

AMORE delightful centre than Oxford it would be hard to find for touring purposes, particularly at this time of year. Nevertheless no special effort appears to have been put forth to make the home Whitsun Tour of the Automobile Club a particular success, in consequence, no doubt, of the superior attractions of the trip to Paris, with a view to witnessing the start of the race for the International or Gordon-Bennett Cup. The Clarendon Hotel, of Oxford, was the appointed rendezvous for those participating in the English tour, but the muster was a very different one from that which made the ancient city of Salisbury so unusually active at Easter. Mr. Noel B. Kenealey and brother turned up on the 10 h.p. Delahaye in which they take such pride, and on Sunday ran out to Stratford-on-Avon, Warwick and Banbury, in very good time; in fact, Messrs. Kenealey consider the car to be quite as speedy as a 12 h.p. Panhard. Mr. J. M. Gorham drove his De Dion voiturette, on which he had the misfortune at Easter to sustain an awkward side-slip, by which the front axle was buckled to a very serious and apparently incurable degree. Very careful handling on the part of a skilled repairer, however, had resulted in a restoration of the axle to its former efficiency, and Mr. Gorham now reported the car to be "going beautifully," and appeared to be delighted with his automobile experiences since he took his first journey no further back than Easter.

Other visitors were Mr. W. D. Astell and Mr. C. L. Freeston on the former's 7 h.p. gear-driven New Orleans, a car which is now performing more consistently than ever. It has settled itself down nicely and is extraordinarily quiet, and as the third speed has been raised somewhat, it is now even faster on the level than before, and reels off miles in excellent style. It took the hills on the stiff route between Henley and Oxford in masterly fashion, on the outward and home journey alike, and at no time required the least attention on the road. There were also Mr. Hancock and friend, bound for Worcester, on a 3½ h.p. New Orleans; Mr. Swinton on the motor-bicycle, which he had at Salisbury at Easter; and Mr. and Mrs. Mulliner, of Northampton, on a Daimler. This last-named car was one of the earliest to be turned out from the works of the Daimler Motor Company's works at Coventry, and is still running in reliable and satisfactory style.

These were all the cars that were stabled at the Clarendon, but on Sunday Mr. Gretton was observed in the neighbourhood of Oxford, driving a party in a large Motor Manufacturing Company's carriage. Mr. Frank Butler and Miss Butler, with their Renault, and Mr. T. B. Browne with his 6 h.p. Panhard, were encountered at Henley, where they were enjoying a riverside holiday. The weather was simply glorious throughout, and the roads for the most part in grand condition, the rain which fell after Saturday midnight having helped to lay the dust. Everywhere the countryside looked charming, and the number of lilacs and wisterias in full bloom was astonishing. A considerable array of motor-cars of one type or another was encountered on the line of route, and are now such an accepted feature of road locomotion that they almost escape comment, while as for horses not a single instance was observed of an animal being frightened at the approach or passing of a car. For all who took part in the tour the holiday was as enjoyable as it could possibly have been, and it is only to be regretted that more members did not foregather at one central spot to "talk petrol" instead of "ganging their ain gait" in isolated directions.

THE Motor-Car Exhibition at the Agricultural Hall.



(Continued from page 235.)



Photo by]

A VIEW OF THE MINOR HALL.

[Argent Archer.

THE Consolidated Engineering Company, Limited, Gotha Ironworks, Slough, exhibited the Briton Coil clutches for motor-car work. The principle of the clutch is well indicated by its name. The power is transmitted from a box to a shaft, passing through it by means of a spiral band, one end of which is locked to the box, the other end being adapted to be rotated relatively to the box by a sliding sleeve, having helical projections, engaging in the interior of a second sleeve, the exterior of which has longitudinal projections engaging in the box. When the second sleeve is moved laterally the coil is gradually contracted on to the shaft of the grip, a certain amount of movement of the second sleeve ensuring an absolute grip of the box on the spindle. Unlike most devices for the same purpose, free lubrication of the engaging surfaces is harmless, the outer case of the clutch having been designed to form an oil bath, in which all working parts are contained. The coil is of best mild steel accurately proportioned for its work, and the drum on which the coil is made to grip is of hardened steel, ground to an absolutely true surface. The clutch exhibited weighed 5 lbs., was $3\frac{1}{2}$ in. in diameter, and was proportioned so as to transmit 16 h.p. at a speed of 1,200 revolutions per minute. Other sizes are, of course, made, and we were informed that a Coil Clutch has been supplied for use on one of the 50 h.p. Napier cars.

The Motor Fittings and Engineering Company, of Brighton, had on view a set of the fittings they are supplying to the trade to build up cars on Darracq lines. In addition to the foregoing, the component parts for motor tricycles and quads, as also a new three-speed and reverse gear box, were also staged.

The "Ideal" Storage Battery Company, of 5, Chapel Place, Long Acre, London, W.C., for which Messrs. Shippey Brothers, Ltd., are sole selling agents, showed their "Ideal" accumulator for motor car propulsion. They are put up in sets of 70, 90, 120, and 140-ampere hour capacities, and 100 and 200-volt

charging circuits. The feature of the "Ideal" battery is the use of an expansion plate by means of which the cells are claimed to be able to withstand a heavy discharge rate without depreciation. A special light-weight set of accumulators is made by the firm for sparking coils, while an 8-volt set was shown specially adapted for the lighting of motor and other carriages.

It is just about a year since the "Still" system of electric vehicles was introduced into this country. This type of vehicle has apparently been meeting with a demand in this country, for Mr. Still is still on this side of the Atlantic. His company—the Canadian Electric Vehicle Company, of 13 and 14, King Street, Cheapside, London, E.C.—had the largest display of electrical cars in the Exhibition. First, we noticed a "Doctor's Runabout," a three-wheel vehicle, for two or three persons. It is described as being a good hill climber, and is propelled by a specially wound "Still" motor. The battery consists of forty "Ideal" accumulators, having a capacity of thirty miles on one charge. The frame is of tubular construction, steering being effected by a lever at the side acting on the single rear wheel. The controller, which is at the driver's right hand, is adapted to give four speeds forward—three, six, nine, and twelve miles per hour—and reverse motion. The car, which is fitted with cycle-type wheels and solid rubber tires, weighs complete about 6 cwt. A neat-looking vehicle—although built somewhat higher than we are accustomed to—is the Dundee four-seated sporting dogcart. (Fig. 1.) This is fitted with a 6 h.p. duplex electro-motor, driving each of the rear wheels separately by chain gear. The car is furnished with a battery of forty "Ideal" cells. The controller, which is located at the right-hand side of the car, is adapted for six speeds forward and reverse. The battery will run the car a distance of forty miles on one charge, and we are informed that the vehicle has successfully mounted all the steepest hills in the neighbourhood of London, including Netherall Gardens, which is a grade of about 1 in 5,

THE GENERAL AUTOMOBILE AGENCY, D. Farman, Man., Garage open day and night, all cars in stock, 100-104, Long Acre, W.C.

this being the first electric car to ascend that hill. The "Oxford" electric phaeton was also to be seen. This vehicle, which has already been illustrated in the *Journal*, is fitted with a 4 h.p. Still motor. The latter is constructed to stand a much greater over-load, and will give a pull of 6 h.p. for hill work. One charge of the battery is equal to a forty miles run. The

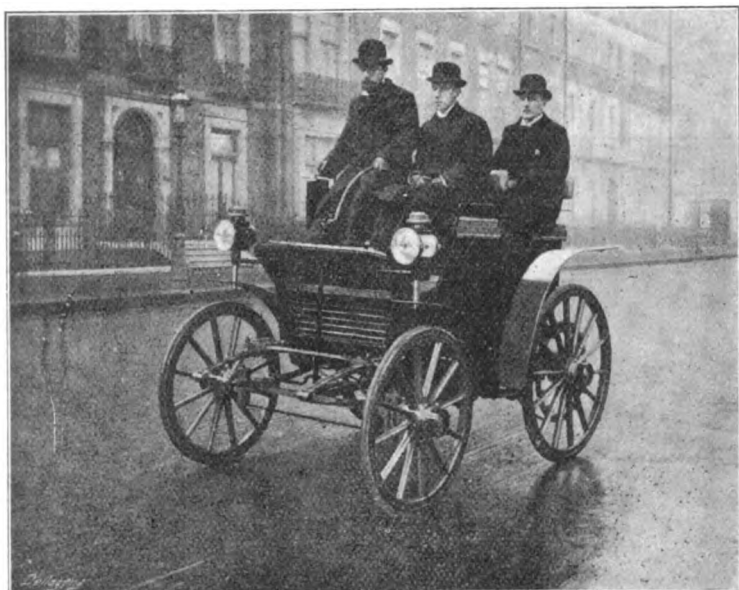


FIG. 1.—THE DUNDEE SPORTING DOG CART.

controller is adapted to give six speeds. A car specially designed for town work was to be seen in a phaeton accommodating three or four persons. Fitted with a 5 h.p. motor and a battery of "Ideal" accumulators, a distance of from thirty to forty miles can be covered on one charge. An interesting vehicle was a victoria (Fig. 2) to carry three persons in addition to the driver and footman. The electrical part of the carriage is on the Still system, while current is supplied by a battery of "Ideal" accumulators carried in a compartment at the rear, and having a capacity of forty miles on one charge. Rubber-tired wooden

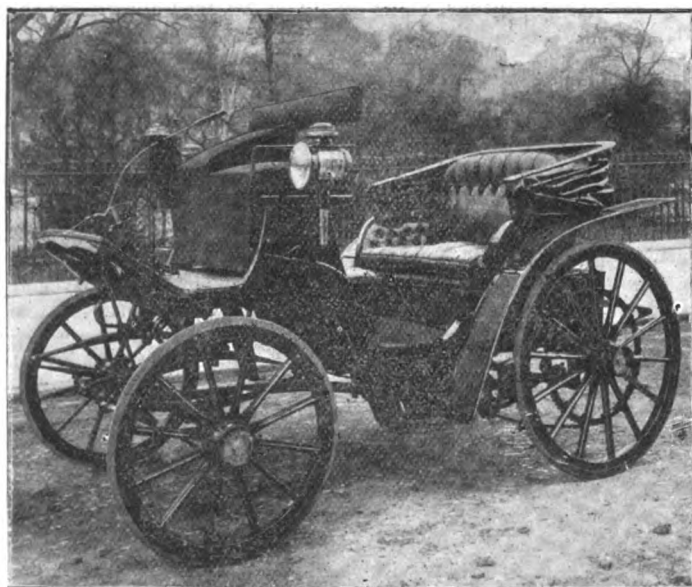


FIG. 2.—THE "ALEXANDRA" VICTORIA.

wheels and tiller steering are fitted, the carriage work, by Messrs. Morgan and Co., being particularly comfortable. In addition to a number of illustrations of different designs of electrical cars, samples of the Still 3 h.p. electric motor, with special winding for hill climbing work, and of the Still six-speed controller were also to be seen at this stand.

The principal feature of the stand of Messrs. Shippey Brothers, Limited, 13 and 14, King Street, Cheapside, London, E.C., was an express parcels van, of which twenty others are being manufactured by the Motor Traction Company, Ltd., for the Electric Parcels Delivery Company now in course of formation. These cars are specially suited for the delivery

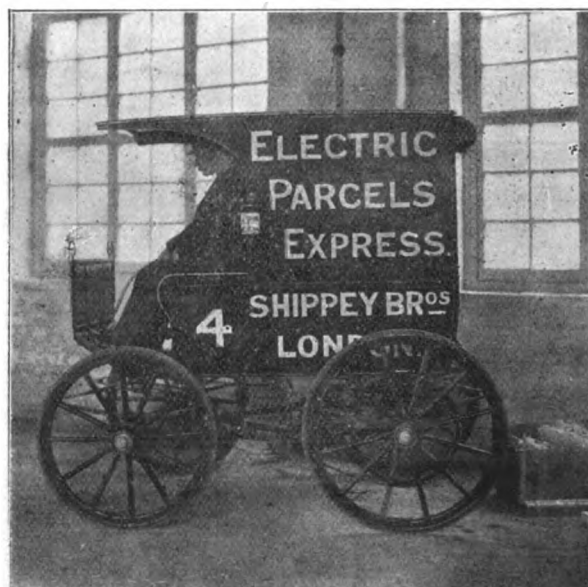


FIG. 3.—THE ELECTRIC PARCELS DELIVERY VAN.

of light goods; they are constructed to carry 600 lbs. weight of parcels, are provided with two brakes, and speeded for three, six, and nine miles an hour. They are equipped with a battery of "Ideal" accumulators permitting a distance of about thirty miles to be covered on one charge. The car on view was nicely finished in lake, and apart from its electrical qualities is a good example of the art of van building, as may be gathered from our illustration (Fig. 3). The electric motor is geared by chains to the rear axle, two brakes being provided. Messrs. Shippey also had on view several light.

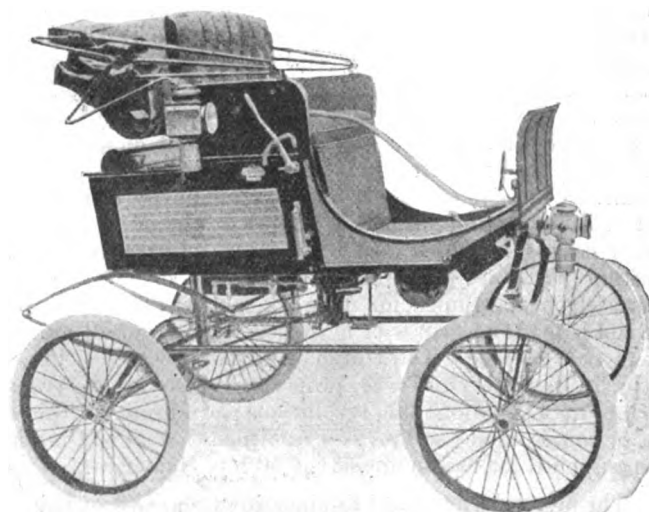


FIG. 4.—THE "IDEAL" STEAM CAR.

American-built steam vehicles. Fig. 4 shows the new "Ideal" runabout type as made by the Milwaukee Automobile Company. The boiler in this car is made of seamless steel. It is 16½ in. outside diameter, 14 in. high, and contains 350 half-inch copper fire tubes, giving approximately 50 square feet of heating surface. It is fitted with safety valve and a fusible plug placed on the

crown sheet. The latter melts out in case the water level falls below a certain point and extinguishes the fire. A $\frac{1}{4}$ -inch blow-off valve is provided, and this has a straight connection, draining the boiler of all impurities. It is pointed out that the only riveting on the Milwaukee boiler is the boiler head, which is not in contact with fire or water. The safety valve opens when

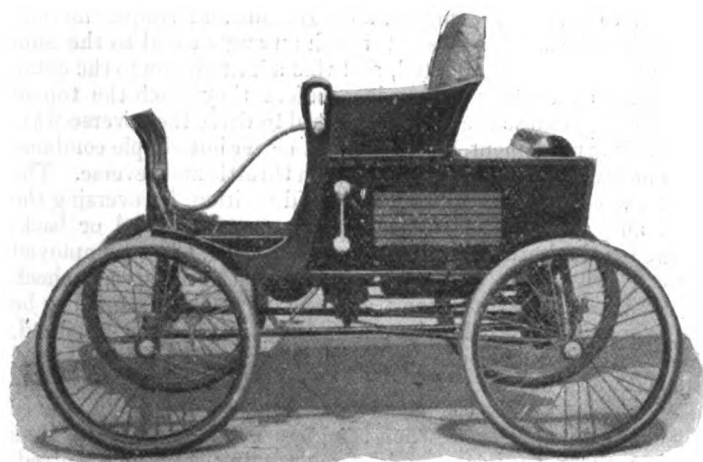


FIG. 5.—THE READING STEAM CAR.

a pressure of 225 lbs. per square inch is attained, blows off a few pounds, and then closes. Steam can be generated in four minutes, 150 lbs. pressure being obtained from cold water in ten minutes. A steam gauge is provided, registering to 300 lbs., fastened to the right-hand side of the dash, and the water glass is placed on the same side of the body, indicating height of water in the boiler, reflected by a mirror placed on the dash. In case of breakage, a new glass can readily be substituted by shutting off connections to the boiler during the operation, with globe valves provided for the purpose. A water glass is fastened under the seat, on left side of the carriage, showing the height of water in the reservoir tank. Secured to the bottom of the boiler, and easily removable for cleaning, is the burner; it is constructed of seamless steel. The petrol which serves for fuel is under air pressure, and is forced through the vaporising system and the atomiser, there mixing with the proper amount of air for perfect combustion in an intense blue flame. It is claimed that by carrying the vaporising system through the boiler, the fire can be relighted when the steam pressure is 50 lbs. or over. An independent valve is fitted, supplying gas to a pilot light, by which device the carriage can stand idle indefinitely, working steam pressure being meanwhile continued after shutting off the main flame. The fuel can be immediately shut off, and the fire extinguished even when the carriage is under full motion, by simply closing a valve operated from the driver's seat. Connected with the atomising valve is a regulator of special construction, by which the fire is regulated by the steam pressure to any heat desired. The top of the boiler is covered with a sheet iron hood which conducts any heat or smoke down through the exhaust pipe. The boiler, burner, and hood are all covered with plastic asbestos. The bottom of the burner is covered with a brass gauze netting, protecting the flame from any under currents of air, and preventing lighting back. The engine is vertical, direct acting, reversible, with two cylinders $2\frac{1}{2}$ in. diameter, having a stroke of $3\frac{1}{2}$ in. When running in 450 revolutions per minute it will develop about 5 h.p. The valves are operated by link motion, enabling the operator to take any speed desired, forward or backward, up to thirty miles an hour. The exhaust steam is passed through a muffler, so that the working of the engine is noiseless. A double-seated throttle valve is provided, by which steam can be admitted to the engine in very small quantity, under the highest pressure, for warming up the cylinders and starting. Arrangements are also made whereby, when the carriage is idle, the steam may be entirely locked out of the steam chest, so that no movement of the steam lever,

intentional or otherwise, will move the carriage. A direct acting pump of large capacity, working at all times when the carriage is running, and amply supplying the boiler, is driven off the crosshead of the engine. The water reservoir, in the back of the carriage, and extending half around the rear of the boiler, is made of corrugated copper, with compartments preventing violent movement of the water while the carriage is in motion; its capacity is 21 gallons. The petrol is contained in a seamless steel tank under the foot-board, and holds six gallons, which is said to be sufficient for sixty miles of travel over ordinary roads. It is forced under compressed air through the boiler, where it is vaporised, and thence to the burner, where it is ignited. The compressed air is stored in a seamless steel tank of large capacity, and a gauge, placed at the left side of the dash, shows the pressure at all times. The engine transmits its motion by a chain to the rear axle. Cycle type wheels, 28 in. diameter, and $3\frac{1}{2}$ in. pneumatic tires are fitted, while the steering is controlled by a tiller. The body is suspended on three springs—one at the front and two at the rear. Other exhibits on Messrs. Shippey's stand were an American water motor and 6-volt shunt dynamo combination plant for charging spark coil batteries from the house water tap at 40 lb. pressure; specimens of Gordon's patent copper oxide batteries with sodium solution specially suited for charging 4-volt spark coil batteries, and specimens of the new "Cyclone" electric ventilating fan sets.

Among the novelties in the way of steam-cars was the Reading (Fig. 5), made by the Steam-Vehicle Company of America, of New York, and introduced into this country by Mr. John L. Sardy, of Saracen Chambers, Snow Hill, London, E.C. The boiler (Fig. 6) is constructed of seamless steel, and is 16 in. in diameter by 14 in. high, the bottom sheet or head being rivetted on. It has 418 $\frac{3}{4}$ in. tubes and 60 sq. ft. of heating surface. A fusible plug, 2 in. from the bottom, prevents the boiler from being burnt in case the feed is neglected. The fusing of the plug extinguishes the fire. The plug, by means of a simple device, can, however, be immediately repaired, enabling the operator to continue on his journey. Petrol is used to fire the boiler. From the fuel tank the petrol is carried to the top of the boiler down through one of the boiler tubes, and then through a loop of heavy tubing to the burner.

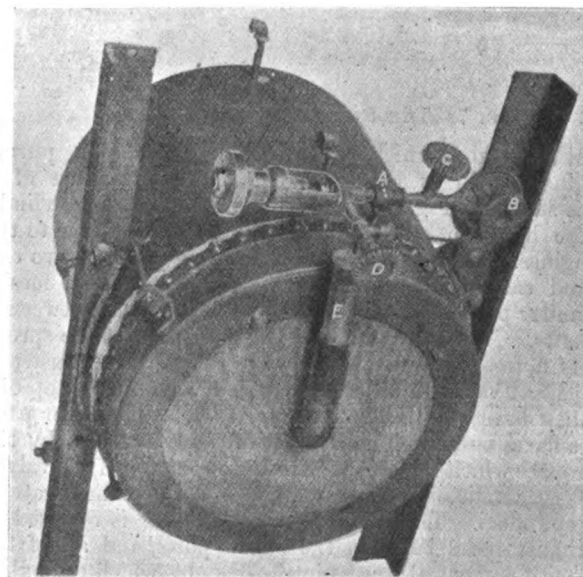


FIG. 6.—UNDER VIEW OF READING BOILER.

To start the latter, a little alcohol is poured into a pan, where it heats the coil of fine tube above it. When this is hot, the main burner supply being still shut off by the valve, a separate valve is opened, and petrol admitted in small quantity to the burner. The moderate flame thus given, playing on the fire coil, soon heats the latter, and, by the time the alcohol is burnt out, the second valve can be closed and the main valve slowly opened.

The burner is a shallow drum pierced with air tubes, each of which is surrounded by pin holes in the upper head for the escape of the vapour. The working steam pressure ranges from 140lbs. to 150lbs. per square inch. At a pressure of 180lbs. the fire is automatically lowered. Both boiler and engine are hung from transverse angle irons, and an expansion joint in the steam pipe permits the engine to swing slightly in tightening the chain. No muffler is used, the exhaust steam being carried over the boiler and discharged downward between that and the tank through ten small pipes. A small pilot light permits the main burner to be turned off by the valve when the carriage is left standing. This keeps the boiler hot, and also the fire coil, so that the burner will start at once; while as the pilot flame does not play directly on the fire coil it does not tend to carbonise the vapour therein. The tube of the fire coil is very thick, and contains no gauze. In case liquid petrol should be let into the burner, it drains out

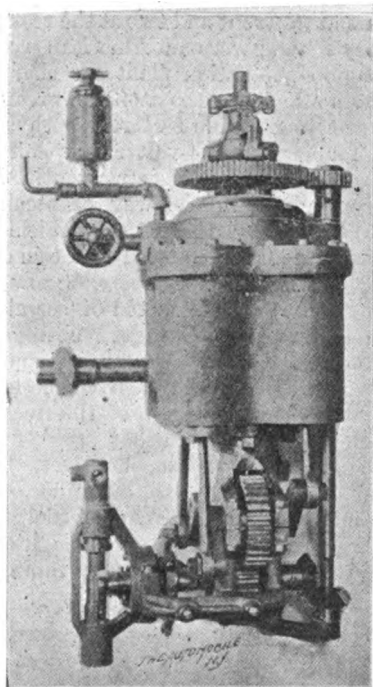


FIG. 7.—THE READING STEAM ENGINE.

by a mixing tube, which is set sloping for that purpose. The engine, which is the most characteristic feature of the vehicle, is shown in Fig. 7. It has four single-acting cylinders, $2\frac{1}{2}$ in. bore by $3\frac{1}{2}$ in. stroke, with trunk pistons, similar to those of gas engines. The connecting rods work in pairs on two crank shafts, and each of these shafts carries a steel pinion meshing with a similar pinion on a sprocket shaft below and between the crank shafts. The cranks are all 90 deg., so that the sprocket shaft gets a fresh impulse at every quarter turn. Instead of slide or poppet valves, a single rotary disc valve in the top of the engine distributes steam to all the cylinders. The lower part of the valve flares out, and its periphery is deeply notched by three ports, through which the steam, entering on the top of the valve by a pipe has access successively to four ports which communicate with the four cylinders. The bottom of the valve disc is recessed with three exhaust ports between the steam ports, and all of these connect with a central recess in the disc, by which the exhaust steam escapes to a cored passage between the cylinders and so passes out by a pipe. The valve is driven by the bevel and spur gears shewn, and makes one revolution to three of the crank or sprocket shafts. Fig. 8, shows the arrangement in plan and explains how the three sets of ports in the valve serve four cylinders. The heavy lines show the cylinder ports (a), the light lines the valve steam ports (b), and the dotted lines the exhaust ports (c), and connecting recess in the valve. The action of the valve is as follows: Presume that cylinder 1 is just taking steam, and that the crank of cylinder 2 is 90 deg. behind that of cylinder 1. In

this case the valve will rotate one-third of 90 deg. (equals 30 deg.) while the crank is moving 90 deg., and as the arc between the valve ports is 120 deg., equals 90 deg. plus 30 deg., it follows that the valve rotating in the direction shown by arrows will admit steam to cylinder 2 when the crankshaft has advanced 90 deg. from the position shown. This being done, cylinders 3 and 4 are served in like manner. The cylinder and valve steam ports are made of such width that steam is cut off at $\frac{3}{4}$ ths stroke. In order to reverse the engine, an ingenious and simple method of rotating the valve forward through an angle equal to the sum of the steam ports is adopted, and this admits steam to the cylinders of the exhausting pistons just before they reach the top of their strokes, and so the engine is caused to drive the reverse way. With this arrangement, by means of a clever but simple combination, one lever is made to suffice for both throttle and reverse. The throttle is closed while the lever, in mid-position, is reversing the valve, and it opens when the lever is moved forward or back. Except for the burner regulator no "automatics" are employed in the Reading car. Instead of using a by-pass valve, a check valve between the water-tank and the pump is arranged to be held open when desired. An auxiliary hand pump is provided, while the gauge cocks are tapped directly into the boiler instead of into a water column. Loss of steam by breakage of the gauge glass is prevented by the usual check valves, and hand valves shut off steam from these when the glass is to be replaced, thus allowing them to unseat. A double-acting brake is fitted. Special attention has been paid to flexibility of the under-frame which, while quite rigid against lateral movements of the axles, permits them to oscillate in vertical planes very freely. The rear end of the body is hung on two transverse semi-elliptic springs, with the rear axle frame between them; and this necessitates a pair of light stay rods from the rear axle to the front of the body, as the transverse springs are not adapted to transmit sudden changes of speed from the wheels to the inert mass of the body. Steering is by side or centre lever, as preferred. Thirty-inch wheels, with $2\frac{1}{2}$ in. pneumatic tires, are used; the wheel base is 62 in. and the gauge 54 in.

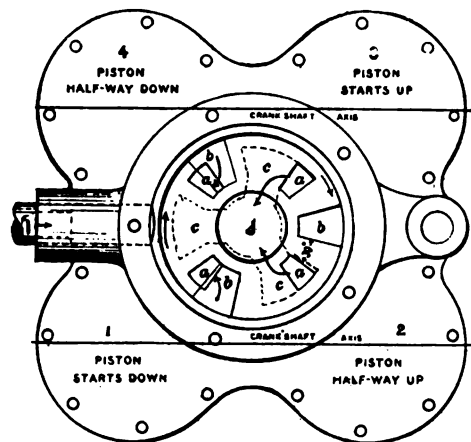


FIG. 8.—PLAN OF VALVE IN READING STEAM ENGINE.

The total weight of the car with the tanks filled is about 1,000 lbs. The petrol tank holds eight gallons, and the water tank thirty gallons, stated to be sufficient for respectively eighty and thirty miles.

Messrs. Vincent and Company, of 16, Union Court, Old Broad Street, London, E.C., who have secured the British agency for the productions of Messrs. D. Augé and Company, of Paris, had an interesting display of motors and chassis. Fig. 9 gives a general view of the latter. The vehicle is propelled by means of a "Cyclope" vertical two-cylinder motor (Fig. 11), located in the fore part of the frame. There are several special features about the motor which are worthy of mention. It comprises two cylinders side by side, the pistons of which are coupled together by a double connecting rod with a single cross-head on the crank pin of the driving shaft. A feature of the motor is that all the

valves are so arranged as to form a detachable box, attached to the rear end of the cylinders. This box comprises a number of cocks arranged to be operated both by hand and automatically, and permitting a regulation both qualitative and quantitative of the explosive mixture. The distribution box comprises two explosion chambers communicating respectively with the interior of two cylinders, and an exhaust chamber capable of communicating with these two explosion chambers by the intermediary of two valves. To each of these explosion

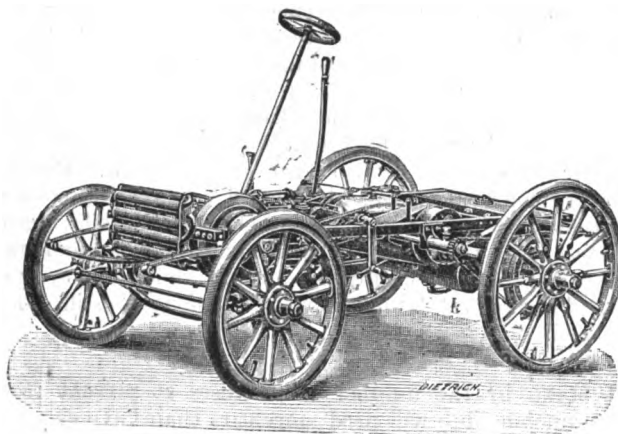


FIG. 9.—"CYCLOPE" CHASSIS.

chambers is connected respectively an ignition plug. Above the two explosion chambers is arranged a receiving chamber for the explosive mixture, capable of communicating with each of the explosion chambers by valves. A speed governor, acting on the inlet valve, is mounted on the fly wheel. The governor can be cut out at will, by means of a small handle placed under the steering wheel, so allowing the motor to race, in order to augment the speed of the car. The feeding of the engine is effected according to its own requirements; an explosive mixture always of an equal composition enters the explosion chambers, but in larger or smaller quantity; from this results, it is claimed, a variable compression, so that the force of the engine may be thus regulated between sufficiently wide limits by augmenting or diminishing at will the impulsive force of the explosive mixture, contrary to the ordinary method of regulation in which the speed is varied by suppressing the explosions. The exhaust valves are controlled by a series of levers and rocking arm, actuated by a cam mounted on a short half-speed intermediary shaft. A general view of the constant level carburettor is given in Fig. 12.

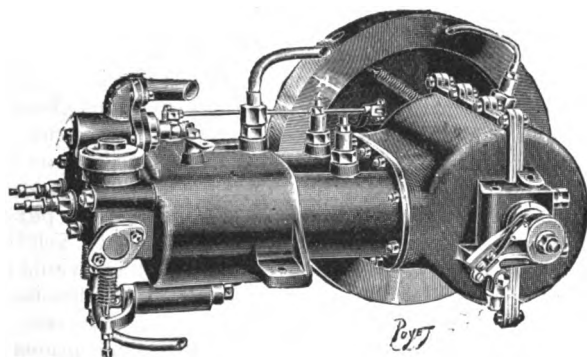


FIG. 10.—"CYCLOPE" HORIZONTAL MOTOR.

It is described as working equally well with alcohol as with petrol, and as being capable of micrometrical adjustment, permitting the spirit admission opening to be regulated to the 100th part of a millimetre. The motor, which is capable of developing 5 h.p., runs at a normal speed of 850 revolutions per minute. By means of the regulating cocks and the electric ignition, Messrs Augé claim to be able to vary the speed while running from between 300 to 1,200 revolutions per minute. The motor is, of course, water-jacketed, a radiating coil,

in connection with the water-circulation, which is maintained by a pump, being located in the front of the car. Coming now to the transmission mechanism, two speeds forward and a reverse motion are provided. As has already been mentioned, the motor is located in the fore part of the frame. On one end of the motor shaft is a pulley connected by a belt to a

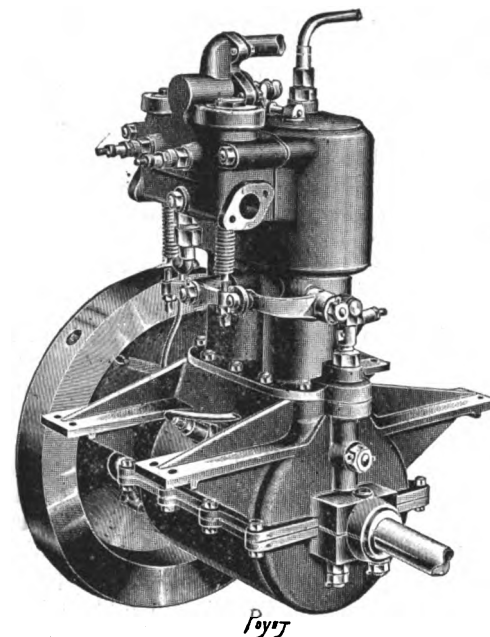


FIG. 11.—"CYCLOPE" VERTICAL MOTOR.

fast and loose pulley on a counter shaft about the centre of the frame. This shaft carries a series of pinions, working in an oil-containing case, and meshing with corresponding pinions on the differential shaft, on the two ends of which are sprocket wheels conveying the power by chains to the rear road wheels. Steering is controlled by an inclined hand wheel; the frame, which is of channel steel, is spring suspended on artillery wood wheels shod with pneumatic or solid rubber tires as desired. There are three brakes, one operated by a pedal and acting on the differential (the application of which also ships the belt on to the loose pulley), and two controlled by a hand lever acting on drums connected with the sprocket wheels on the rear axle. The motor and transmission gear are mounted on a standard frame, to which any type of carriage body may be fitted. The "Cyclope" motor is made in the horizontal as well as in the vertical type,

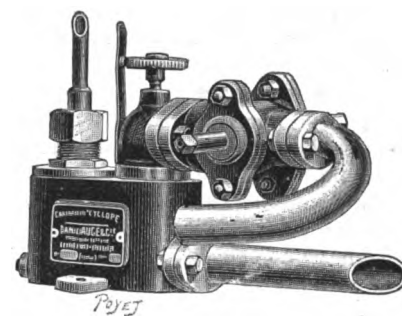


FIG. 12.—"CYCLOPE" CARBURETTOR.

and samples of both were shown, each being of 5 h.p. and having two cylinders.

(To be continued.)

MESSRS. J. BLAKE AND Co. have removed their works to more extensive premises at Beaumont Street, Liverpool. The area of the new works is no less than 3,780 square yards, so that the firm are now in a position to undertake the storing and repairing of motor-cars. A stock of Pratt's motor spirit is also kept on hand.

FLOTSAM AND JETSAM.

BY "FLANEUR."

HOW one does love the British railways, to be sure! In their capacity for setting everybody by the ears, for tyrannising over the passenger and the trader alike, the various companies in this country enjoy a reputation which their continental *confreres* would be ashamed to emulate. We know how the fruit-growers of Kent are crippled owing to the impossibility of getting fruit to town in reasonable time or at reasonable rates, and in other portions of the kingdom various trades are handicapped by prohibitive tariffs on the consignment of goods. And now that automobiles are becoming a feature of our social life they, too, are included under the persecuting ban, as those of us who own cars have found to our cost.

WHAT could be more absurd, for example, than the stipulation that you must empty every drop of petrol from your tank if you consign your car by rail? Unless the companies encourage their employees to go about with naked lights, and to amuse themselves by turning every tap they see, there is no earthly reason why a man should be compelled to throw away his petrol, and so deprive himself of the ability to drive his car away on arrival at its destination. Some Jacks-in-office will even insist upon the discharging of the accumulators, where electric ignition is fitted; in fact, the companies appear to delight in causing harassment where they can, and in writing down their servants generally as a set of noodles, incapable of handling anything requiring the simplest of attentions.

In the matter of charges for automobiles, the rates of British railway companies compare most unfavourably with those of foreign countries. A Midland friend of mine lately had occasion to send a small car to the neighbourhood of London, and for the journey of 116 miles he was charged no less than £2 5s. This was by goods train only; by passenger train the charge would have been £3 10s. Compare this with the experience of another friend, who sent a much larger car from Paris to a town in Belgium, 220 miles away, for fifteen francs, or 12s. 6d., and this, too, by express train. The difference is enormous both in time and money. Here we have a continental company or companies in conjunction, conveying a motor-car by fast train, with a special truck, at a lower charge than a British company would levy upon an ordinary triecyle, if unaccompanied by its owner, with the added probability of its being injured in transit, and no possibility of recovering damages, unless a still higher sum had been paid and the machine consigned "at company's risk."

THE horse has been defined as the friend of man, but every time Bank Holiday comes round the conviction is forced upon us that man is by no means the friend of the horse. How completely farcical it is to assume that the automobilist is of necessity an animal hater, and that every owner of a horse is the reverse! It is true that we have no cause to respect the intelligence of the beast that shies without provocation, and we are occasionally made to suffer from equine fractiousness or irresponsibility. Even the non-shying horse, too, destroys our roads by the pounding of its hoofs, and pollutes the atmosphere with its deposits. All the same, we don't hate it, though we hope to see its numbers grow less and less as years roll on. But to contend that those who use horses also love them is a melancholy travesty of the facts. Five-sixths of those whom one sees upon the road with reins between their fingers regard the quadruped before them in a strictly utilitarian spirit, and the amount of flogging that takes place every day is realised by no one better than the automobilist, who covers many miles of road within the day, and sees countless displays of callousness and often cruelty. The number of over-laden carts out on the highways last Monday was astounding, and made one wonder what the inspectors of

the R.S.P.C.A. were doing. Two vehicles out of every three at least were carrying nearly double the load of revellers that the animal ought to have been expected to draw, and how some of the poor beasts got home at night one can only speculate.

TALKING of horses reminds me, by the way, of the extraordinary coincidence whereby Earl Roberts was the victim of a second carriage accident on the very day on which the *Motor-Car Journal* appeared with my reference to the one at Walthamstow a few days earlier. No motor-car was concerned, however, with the catastrophe at the Crystal Palace, which might have had the most serious results, and was quite bad enough as it was. But how calmly the good old British public does take these things, to be sure; yet if Earl Roberts had been pitched out of a motor-car there would have been no end of a row. But where horses are concerned the public mind seems as unreasonably indifferent as it is acutely sensitive when automobiles figure in the case. The usual crop of accidents to holiday-makers has accompanied the Whitsuntide celebrations, but the employment of the dangerous "beanfeasters' waggonette" still goes on unchecked.

JUDGING by the number of promises at present received the Automobile Club will need more cars than have as yet been placed at the Committee's disposal for next week's demonstrations. At the time of writing some forty members have offered their services and their cars in this connection, but this will not be anything like enough. Not all the cars can be spared for each of the three days, and even if they could they would by no means suffice for the purpose unless large numbers of abstentions were recorded on the part of the County Councillors themselves. The latter are expected to total some hundred and fifty per day, and as many cars can only convey two passengers besides the driver there will need to be a very big display of motor-vehicles outside Whitehall Court.

It is earnestly to be desired that more owners will come forward and assist in making these demonstrations the signal success which they deserve to be. Nothing is so convincing as a combined display. Fifty cars in a group are far more impressive than fifty on as many different roads, and the County Councillors cannot fail to be impressed if the Automobile Club's appeal for cars is suitably responded to. One may express the further hope that the instructions framed for the occasion by the Committee will be carefully studied and observed, and that where a private owner cannot attend in person, and sends his *mecanicien*, the man will have been carefully coached beforehand as to his responsibilities.

It has been a pleasure to note in the last two issues of *Country Life*, a couple of articles entitled "Misconceptions about Motor-cars," which should have a very useful influence on the numerous readers of that journal. The contributions in question are apparently written by someone with an intimate knowledge of automobilism in all its aspects, but are not phrased too technically for the intelligence of the uninitiated; yet they run through the whole gamut of the popular but fallacious theories about motor-vehicles, such as blowing-up tendencies, noise, vibration, smell, the frightening of horses, etc., etc., with a suitable explanation as to each. While misconceptions on the subject are so widespread the appearance of such articles in the non-technical press must be heartily welcomed, and *Country Life* is to be congratulated on its publication of these timely contributions.

BOSTON, U.S.A., has had on trial for some time two automobile fire engines, which have now completely demonstrated their superiority over the ordinary type of engine. In the winter season they are particularly valuable, as they are considered better hill-climbers than horse-drawn vehicles, especially in bad weather.

HERE AND THERE.



AT the Paris Salon this year the automobile has been introduced in the world of art in a painting by M. Acheverry, showing a fashionably-dressed lady in a motor-carriage.

AMONGST Bank Holiday attractions at Bexhill was the regular service of motor-cars to Hastings and back. At Brighton also a number of motor-cars were run along the coast and inland.

A NEW American four-cent postage stamp bears the design of an automobile—an electric coupé—having the Capitol at Washington for a background.

ON Sunday last M. Fouquier travelled from Tours to Paris in a 16 h.p. automobile without making a single stop, and maintaining an average speed of thirty-seven miles an hour throughout the journey.

AMONG the visitors to the recent exhibition was Alderman S. Compston, of Rossendale, who has written an interesting account of what he saw and did at the Agricultural Hall for the local papers.

MR. RUDYARD KIPLING, who made his *début* in the motor world on a Cannstatt-Daimler, purchased a Locomobile steam car during his recent visit to America, and is taking delivery next week.

A LETTER from the Secretary of the Automobile Club, with copy of a Memorial signed by manufacturers and agents in the automobile industry, was laid before the Hants County Council at its last meeting, but no action was taken with regard to it.

AMONGST the archives of Antwerp is reported to be a document dated 1479 authorising the Town Treasurer to pay a bonus of twenty-four livres d'Artois to a man named Gilles de Dom as an appreciation of his gift to the city of a "carriage set in motion by mechanical means only."

A COMPANY, known as the London and Counties Distributing Company, Limited, has been registered, with a capital of £1,000, to carry on the business of common carriers over any roads in the United Kingdom, by means of motor wagons, horse wagons, or otherwise.

FROM Messrs. Hewetsons, of 251, Tottenham Court Road, W., we have received a new illustrated catalogue of the well-known Benz motor-cars. The vehicles illustrated range from the 3½ h.p. two-seated car up to four-seated cars fitted with 10 h.p. engines and various types of bodies. Brakes, racing cars, light delivery vans, and the new Benz 2½-ton lorry recently illustrated in the *Journal* are included in the list.

ACCESSORIES and detachable parts for cycles and automobiles fill a bulky illustrated catalogue sent to us by M. Lewis Barnascone, 2, Rue de Braques, Paris. Practically everything that the motorist can require, from a pair of coloured glasses to a radiator, is therein illustrated, described, and priced. The appliances listed for purposes of generating, storing, and measuring electricity appear to be very complete.

THE Scott Tire Company, of Gosford Street, Coventry, has forwarded us a price list of the "Falconet Compound" tires, for which it is the sole agent in the United Kingdom and British colonies. The Falconet Compound tire is of two orders: "solid," which is suitable for any class of vehicle; and "light," which is semi-hollow and suitable for small motor-cars. Though comparatively unknown in our country, the Falconet Compound is well known and appreciated in France, as some excellent testimonials appended to the price list prove.

MESSRS. Gaston Sencier and A. Delasalle are publishing a book on electric automobiles. This is, we believe, the first book devoted entirely to the subject of electrically-propelled self-contained vehicles. We gather from a note from one of the authors that it will consist of about 400 pages, with numerous illustrations. The book, which is being published by La Librairie Dunod, 49, Quai des Grand-Augustins, Paris, as its title indicates, deals with the electrical side of the automobile movement. An English edition of the work is, we understand, contemplated.

THE American Motor Coach Company is the name of a company which has just been formed in Chicago with a capital of £20,000.

THE Electric Ignition Company, of Highgate Square, Birmingham, inform us that they have been obliged to advance the price of their De Dion sparking plug from 7s. to 7s. 6d. post free.

THE municipal administration of Stockholm, Sweden, is, it is reported, to be approached by the representatives of a syndicate of French manufacturers, desirous of obtaining a concession for the placing of automobile cabs and other vehicles on the streets of Stockholm for public use.

"TIRE TROUBLE TALK" is the title of a booklet sent to us by the New York Tire Company, of 5, Thavies Inn, Holborn, E.C., in which a description is given of the construction and advantages of the New York tire, which has just been introduced into this country.

AN automobile stable is being constructed on the Coats estate, at Newport, U.S.A., for Mr. William K. Vanderbilt, Jr., who has taken the place for the summer. Mr. Vanderbilt will have four automobiles there this season—his well-known white Daimler, two runabouts, and a high-powered vehicle, reported to be a German Daimler of the new Mercedes type.

AT Barry Police Court last week a motor-car driver named Thomas Myers was summoned for driving through the streets of the town without having two lights. Myers explained that he had just discovered that one of the lights was out when he saw the constable. A fine of 2s. 6d. was imposed.

THE Rev. H. Y. C. Blandford, of Pittsburg, U.S.A., has ordered a motor-car in which he will make a tour of the country. The vehicle will contain living and sleeping apartments, and provision will also be made for the carrying and cooking of food. It will have sliding and drop windows, and run on rubber-tired wheels.

ON Saturday last, on the Baslow Road, Totley, there occurred a serious motor-car accident. Colonel Turner, Mrs. Turner, Miss Butcher, and Captain Clincher, all of Chesterfield, were being driven in a motor-wagonette, when the rubber tire of one of the wheels came off, entwined itself around the axle, brought the vehicle to a sudden stop, and pitched the whole of the party violently into the road. Colonel Turner was stunned, and it was some time before he approached anything like consciousness. The other occupants of the vehicle were all in a more or less dazed condition for some minutes after their violent fall. The five unfortunate motorists were removed to the Cross Scythes Inn. About half-past five o'clock the party had recovered sufficiently to be removed, and they were driven to Totley Station, whence they proceeded to Chesterfield. Later inquiries show that the Colonel is progressing favourably, although it has been found that one rib was broken. Mrs. Turner and Miss Butcher are none the worse for their unpleasant experience, the driver, too, escaping with a bruised leg.

AN amusing incident happened on the Boulevard du Régent in Brussels the other evening about six o'clock. Owing to the recent orders issued as to the speed of automobiles, the police have been very much on the alert. Each time a *chauffeur* tried to pass a certain *gendarme* at too great a speed he pulled out a huge card, on which was printed in French the words "You are travelling too fast," and the reprimanded driver regulated his speed accordingly, at least as long as that particular policeman was in sight. Presently a luxurious automobile came gaily along at a great rate. The outraged policeman waved his arms and commanded the offender to stop, though the latter looked as if he felt more inclined to calmly ride over him. However, he slowed down, and the *agent* demanded his name in an energetic manner. "Morcel," replied the *mecanicien*. But the worthy man was no wiser. "What is your number?" he asked, and was told to look inside and see. Great was his consternation and confusion when, behind the glass screen of the automobile, he beheld the well-known features of the King of the Belgians. His Majesty smiled as he took in the humour of the situation, and the Royal vehicle pursued its way undisturbed.

WE hear that Lord Willoughby d'Eresby has purchased Mr. Weguelin's 12 h.p. Daimler car.

A COMPANY has just been formed in London, Ontario, with a capital of £5,000, to be known as the Canadian Steam Carriage Company.

THE British Vice-Consul reports that a service of motor-cars connecting the principal towns in the southern half of Cordoba, Spain, is to be inaugurated immediately.

IN a new church which is now being erected at Central Park West, in New York City, for the Christian Scientists, a room in the basement is set aside for the storage of motor-cars during services.

MOTOR-CARS are being used by the sanitary inspectors of Chicago, who find that they are able to cover in one day three times the ground formerly covered by horse and trap. The result is that slums are visited three and four times as often as formerly, and the sanitation of the city is improving.

MR. GEORGE PRADES, in the *Auto-Velo*, states that the Daimler Company at Canstatt and the Mors Company of Paris are engaged on the construction of vehicles having electric motors on each of the four wheels driven from a central petroleum spirit engine.

IN response to a request from the Commissioner of Police of the Metropolis, 550 notices concerning the regulations governing motor-cars have been circulated by the Automobile Club to owners and manufacturers of, and agents for, motor-vehicles throughout the kingdom.

THE French Minister of Public Works will give a prize for the Paris-Berlin race. It will take the form of an *objet d'art*. This is the third official prize given in connection with this contest, the Kaiser and the President of the Republic having each promised one.

THE Automobile Club of New Jersey has issued its first year-book, containing information about the roads in that State and New York, storage and supply stations, etc. The book also contains a road map of the State of New Jersey, section maps of different parts of the State, and also a map of parts of New York.

A NEW record was recently established between New Haven and Hartford, Conn., U.S.A., by Mr. Leonard E. Fisk, of Hartford, who covered the intervening forty miles in two hours and twenty-five minutes, actual running time, on a Columbia petrol vehicle. On the other side the performance is considered most remarkable, having regard to the condition of the roads over which it was accomplished.

MR. J. W. BARNARD, of 6, Great Winchester Street, has sent us a complete price list of E.P.S. storage batteries (the Q and V types) for which he is the sole agent in the United Kingdom. Mr. Barnard keeps a large stock of the cells on hand, so that customers may nearly always count upon uncharged batteries being despatched the same day as the order is received and fully charged batteries within two days.

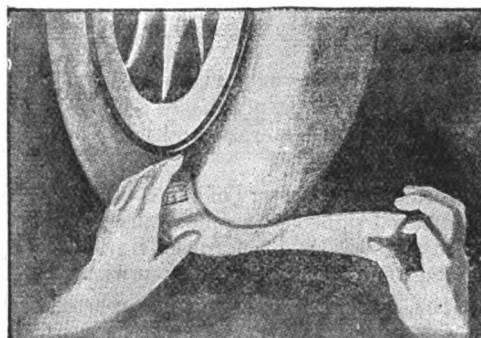
MR. AND MRS. ROBERT SHAW, the first amateurs to make the journey from New York to Chicago in an automobile, recently arrived in the latter city, having accomplished the trip in easy stages in ten days and eleven hours. Only ninety-seven hours were spent in actual travelling. The rest of the time was devoted to necessary stops for sleep, refreshment, and repairs. During the trip they wore out two tires, and used one hundred and ten gallons of petrol, the car used being an 8 h.p. Panhard.

MR. PERCY HOOPER, of the Saint Pancras Borough Council Electricity and Public Lighting Department, writes that the above Council have two generating stations, one situated at King's Road, Camden Town, and one at Stanhope Street, Regent's Park, where recharging is undertaken. The price per unit adopted by the Council for this purpose is twopence. Cars of any voltage may be charged, but the amount will be in all cases charged as at 220 volts. The works are open day and night, and recharging can be done at any time except during the evening hours when the stations are working at top load.

REPAIR BANDS FOR PNEUMATIC TIRES.



PUNCTURED pneumatic tires being one of the great troubles experienced by motorists, any device which will mitigate the evil, or at least facilitate the repair of the tires, is sure to receive attention. No apology is, therefore, needed for our drawing attention to the "S.F." tire repair band lately introduced by Messrs. Stanley Feast and Co., of 9, Farringdon Road, London, E.C. The band is made in three sizes—8in. by 3½in., 10in. by 3½in., and 12in. by 3½in., and consists of a thin pliable band woven and prepared in a special manner, and covered with thin rubber tapered at the edges. In the event of serious damage occurring to a tire cover, or of weakness developing in the tire, the band should prove invaluable. The first thing to do is, of course, to repair the air



tube in the usual way, but when it is placed in the rim again, and the cover put in position, the band is taken, not solutioned, and placed over the cut or weakened part of the cover. One end of the band should then be slipped under the wire or beaded edge of the tire, and the other end under the opposite edge. The ends of the bands are firmly gripped between the tire and the rim, and on inflating, the band forms an excellent support for the damaged cover; in fact, the rubber cover to the band is thickened at the tread, like the tire cover itself, and altogether one or more of the bands should be carried in the repair kit in case of emergency. In the event of a very big gash, two bands slightly overlapping can be used.



THE *Madras Times* reports that a concern named the Chota-Nagpur Automobile Company has examined the routes of Hazaribagh, and intends starting a service of motor-cars almost immediately.

MESSRS. JOSEPH LUCAS, LIMITED, of Birmingham, have sent us a preliminary list of automobile accessories, dated May, 1901. The list, which is illustrated, is so complete that we wonder what more will be found in the subsequent list which the use of the word preliminary leads us to expect. Lamps, horns, pumps, sparking plugs, repairing outfits, and even eye-protectors, with everything else the motorist can possibly press into his service, are to be found in the list, not forgetting oils for lamps and motors, all in neat and handy form.

THAT there is no falling off in the popularity of the motor-cars at Bournemouth is evident from the fact that eight vehicles belonging to Bournemouth Motors, Limited, carried on Whit Monday no less than 2,962 passengers. The mileage run was about 664, and, although each of these cars has been doing public-service work for over a year, only two stoppages occurred during the day, one due to a chain coming off, and the other in order to change a burner. Neither of the stoppages caused a delay of more than two minutes. Altogether, the Bournemouth service is an excellent example of the reliability of properly-constructed cars, when they receive the attention necessary for all machinery.

THE LIVERPOOL HEAVY MOTOR-VEHICLE TRIALS.

A CONSIDERABLE amount of interest centres in the forthcoming trials of motor-vehicles for heavy traffic, organised by the Liverpool Self-Propelled Traffic Association, particularly amongst those who are nearly concerned in the question of the cheaper and rapid conveyance of goods over moderate distances. The official programme of the "third trials," which has just been issued, shows that, extensive and exhaustive as were the previous trials, those that are approaching are of a wider and more exacting character, and, generally speaking, the programme is of a most elaborate character. Thanks to the ceaseless energy of the hon. secretary, Mr. E. Shrapnell Smith, everything has been arranged in good time, and, looking to past meetings, one can only hope that the trials which are now approaching will be at least as successful as they were.

The conditions of the competition provide that the vehicle shall be self-propelled and self-contained. It shall be propelled by mechanical power alone, but there shall be no restriction on the source of such power or the nature of the agents used.

The vehicle shall be capable of going anywhere that a horse-drawn vehicle carrying the same load is ordinarily required to go, and of being placed in the same positions and withdrawn therefrom without external assistance. The particular manœuvre most generally called for is to work into and out of a loading berth when cramped for room. This requirement arises in the case of embayments, or of confined spaces between other vehicles in a line receiving or discharging goods. Carters usually back into such positions obliquely, and bring the vehicle into line by turning the leading wheels at right-angles to the rear wheels and again

Vehicles Eligible for Competition—

Class	Load.	Maximum Tare.	Minimum Level Platform Area.	Minimum width of Driving Tires.	Speed.
A	1½ Tons.	2 Tons.	45 square feet	3 inches.	8 m. per hr.
B	5 "	3 "	75 " "	5 " "	5 " "
C	5 "(minimum)	No Limit.	95 " "	6 " "	5 " "
D	4 " "	" "	Not specified.	4 " "	5 " "

Rules and Conditions.

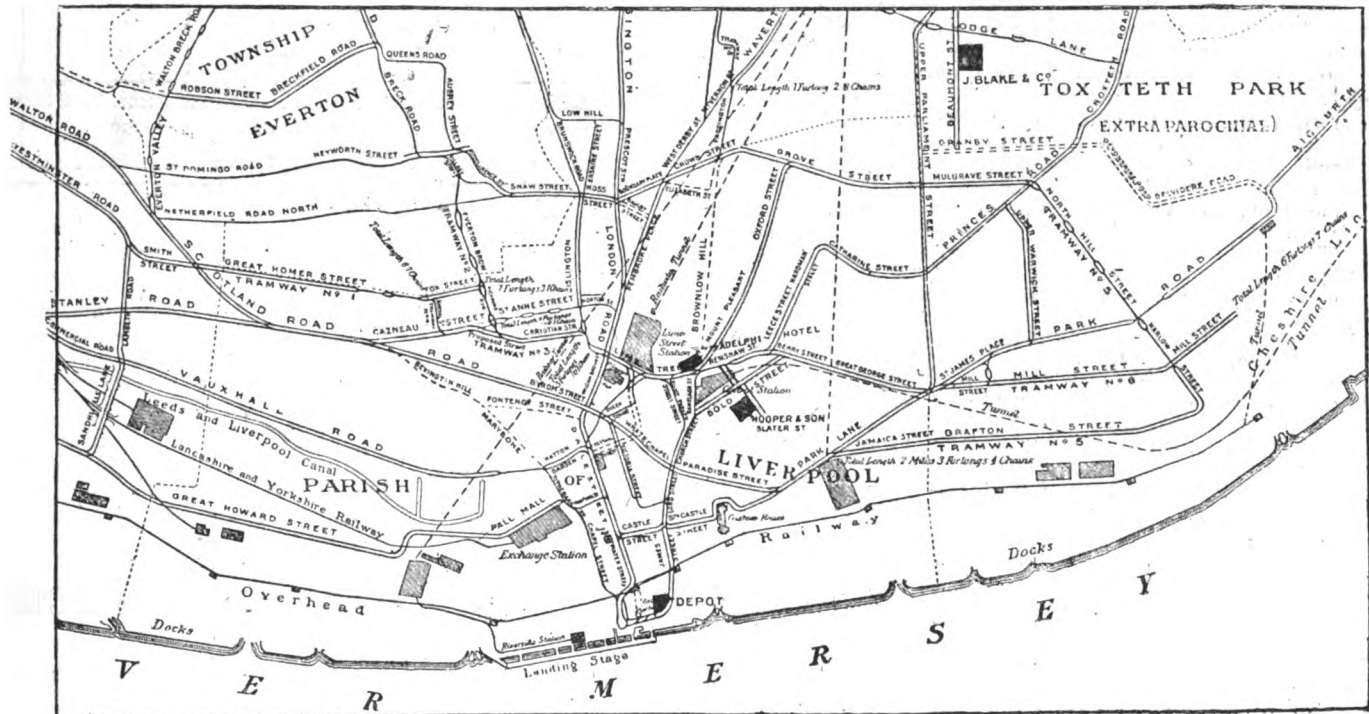
The vehicle shall carry the weight of goods specified for its class, any excess weight in Class C or D being declared in advance by the competitor throughout the continuance of the trials.

Two official observers will accompany each vehicle during the trial runs, to take notes of behaviour, fuel and water consumption, etc., and no repairs will be permitted without their knowledge and consent.

Any vehicle withdrawn from competition during the trials, except under the written authority of the judges, shall be ineligible for a prize or for commendation.

Each competitor shall arrange to have his vehicle or vehicles ready for inspection by the judges at 3 p.m. on the afternoon of Friday, May 31st, 1901, in the Liverpool Depot, when the dimensions, capacities, and weights will be taken by the observers.

All vehicles shall be stored over-night at the depot or depôts provided by the Association.



MAP OF LIVERPOOL, SHEWING PRINCIPAL STREETS.

backing, but it is open to competitors to perform the manœuvre as they think best.

The vehicle shall be capable of working into and out of an embayment of one and a half times its own length.

The vehicle shall be capable of starting from rest on, and mounting a gradient of 1 in 9 (sets).

The capacity of any water tanks, whether the same be fitted for feed, cooling, or other purposes, shall suffice for a run of 15 miles on the basis of the consumptions during the trial runs.

Such portion of the platform of the vehicle as is designed to carry the load shall be level, and the height of the floor-line, measured either when light or when laden, shall not be less than 3 ft. 6 in., and shall not exceed 4 ft. 3 in.

The vehicle shall conform in all respects to the requirements of the Locomotives on Highways Act, 1896, and, in the case of its being oil-propelled, of the "Regulations as to Petroleum" issued by the Home Secretary under Section 5 of this Act. In Class C, intended for vehicles for export to the Colonies and abroad, there is no tare limit, but the other regulations must be adhered to.

All working parts shall be properly encased.

The boiler, tanks, oil-baths, and connecting pipes shall be fitted with drain-plugs at their lowest points.

The cross-section of any pipe connecting two tanks shall be not less than that of the pipe provided for filling the first tank of the two.

Provision shall be made to lock the compensating gear.

At the conclusion of the trials any vehicle, or motor, or part thereof, shall be opened up, in confidence, for inspection by the judges, if required.

The judges reserve to themselves the right of absolutely disqualifying any competitor.

The following are the points which will be taken into consideration by the judges in making the awards:—

Cost.—Prime cost. Economy of working, including attendants.

Control.—Stopping, starting, changing speed, steering and reversing, particularly under adverse conditions, such as on inclines, in confined spaces, or on greasy surfaces.

Working.—Adhesion on greasy surfaces when light and when laden. Noise, smell, visible vapour, dust or other nuisance when travelling. Number of mechanical operations requiring attention from the driver. Efficiency of brakes. Time occupied in preparing the vehicle for service on the road. Speed (within legal limits). Ability to travel between the depôts without taking or receiving supplies of fuel, oil, gas, electrical or chemical materials or electrical current, water, or of any agent employed for actuating the motor or assisting its working. Ability to travel between the depôts without stopping to effect repairs, adjust parts, apply lubricants, or for any other purpose or cause not provided for in the itinerary. Freedom from a breakdown of any nature.

Construction.—Ratio of tare to weight of freight carried during the trials. Percentage of total weight on driving wheels, when light and when laden. Ratio of available platform area to extreme moving area in any horizontal plane. Efficiency of wheels. Nature and efficiency of

gearing. Strength of frame and working parts. Quality of workmanship. Efficiency of springs. Freedom from complicated or over-refined parts. Facility with which repairs can be effected. Capacity of bunkers or oil tanks.

Steam-propelled Vehicles.—Provision to secure invisible exhaust. Ample supply of steam. Action of feed-pumps or injector, and ease of control of water-level. Consumption of fuel and water per mile. Leakage of steam or water. Arrangements for stoking.

Oil-propelled Vehicles.—Nature of variable speed arrangement, and smoothness with which changes of gear are effected. Carburettion. Ignition. Circulation of cooling-water and quantity required. Consumption of oil per mile. Leakage of pipes or tanks.

Electrically-propelled Vehicles.—Battery power to travel 40 miles on one charge. Nature of the arrangements for varying discharge rate. Method of carrying the battery and replacing same. Simplicity of controller. B.T.U. per mile.

The decision of the judges, expressed in writing on any point, shall be final and binding on all parties, and they may withhold any reward or any portion thereof.

The following is the programme :—

Monday, June 3rd, will be devoted to hill-climbing tests at Everton and manœuvring tests at the Docks. The Liverpool depot, where the vehicles will be on exhibition, is the shed and open space at the west side of the George's Dock. This has been placed at the disposal of the Association by the Mersey Docks and Harbour Board. Accommodation for the visiting light carriages has been provided, free of charge, by Messrs. Hooper and Son, Slater Street, and Messrs. J. Blake and Company, Beaumont Street (old tramway depot). Belle Vue has been placed at the disposal of the Association as the Manchester depot by Messrs. John Jennison and Co., and the Artillery Barracks, King Street, Blackburn, by Colonel Thom and officers of the Lancashire Artillery Volunteers (third brigade). The routes and approximate time-tables for the four distance trials will be as under :—

June 4th (Tuesday).—Liverpool (George's Dock) depart 9.15 a.m., Widnes (Town Hall) arrive 11.30 a.m., Warrington (Town Hall) arrive 12.45 p.m. Warrington depart 1.45 p.m., for Manchester, via Hollinfare and Eccles. Manchester (Town Hall) arrive 4.30 p.m., Belle Vue (Longsight entrance) 5.30 p.m.

June 5th (Wednesday).—Albert Square depart 9.15 a.m., Bolton (Town Hall) arrive 12.15 p.m. Bolton depart 1.30 p.m. for St. Helens, via Atherton, Leigh, Pennington, Newton, and Haydock. St. Helens (Town Hall) arrive 4 p.m., Liverpool (George's Dock) arrive 6.15 p.m.

June 6th (Thursday).—Liverpool (George's Dock) depart 9.15 a.m. for Wigan, via The Horns, Knowsley, Rainford, and Billinge. Wigan (Market Square) arrive 1 p.m. Wigan depart 2 p.m., Chorley (Cattle Market) arrive 3.45 p.m., Blackburn (Artillery Barracks) arrive 6 p.m.

June 7th (Friday).—Blackburn (Artillery Barracks) depart 9.15 a.m., Preston (covered market) arrive 11.30 a.m., Rufford (Hesketh Arms) arrive 1.15 p.m. Rufford depart 2.15 p.m., Ormskirk (Clock Tower) arrive 4 p.m., Liverpool (George's Dock) arrive 6.15 p.m.

The following are the entries :—

CLASS A.—Load, 1½ tons ; maximum tare, 2 tons ; minimum level platform area, 45 sq. ft. ; minimum width of driving tires, 3 in. ; speed, 8 miles per hour.

Official No.

A 1. Geo. F. Milnes and Co., Limited, Motor Department, "Motoria," 17, Balderton Street, Oxford Street, W.

CLASS B.—Load, 5 tons ; maximum tare, 3 tons ; minimum level platform area, 75 sq. ft. ; minimum width of driving tires, 5 in. ; speed, 5 miles per hour.

Official No.

B 1. The Lancashire Steam Motor Company, Leyland, near Preston.

CLASS C.—Minimum load, 5 tons ; no tare limit ; minimum level platform area, 95 sq. ft. ; minimum width of driving tires, 6 in. ; speed, 5 miles per hour.

Official No.

C 1. The Thornycroft Steam Wagon Company, Limited, Chiswick and Basingstoke.

C 2. C. and A. Musker, Limited, The Brook, Liverpool—oil firing.

C 3. " " " " " " coke firing.

C 4. Simpson and Bibby, Pomona Engine Works, Cornbrook, Manchester.

CLASS D.—Minimum load, 4 tons ; no tare limit ; level platform area not specified ; minimum width of driving tires, 4 in. ; speed, 5 miles per hour.

Official No.

D 1. The Thornycroft Steam Wagon Company, Limited.

D 2. T. Coulthard and Co., Limited, Cooper Road, Preston.

D 3. Mann's Patent Steam Cart and Wagon Company, Limited, Canning Works, Dewsbury Road, Leeds—cart and wagon respectively.

D 5. Simpson and Bibby. [This vehicle not ready in time to compete.]
D 6. The Mechanical Transport Company.

Below is a description of the vehicles that have been entered :—

CLASS A.—Vehicles Nos. A1 and A2. £550. George F. Milnes and Co., Limited.—Each vehicle is 17 ft. long, by 4 ft. 9 in. wide. The wheel base is 11 ft. Hinged sides, 8 in. in height, are fitted to the platform. The frame is constructed of U channel steel, and will bear a total dead load of up to three tons. The motor is a two-cylinder light hydrocarbon engine, built on the Daimler principle throughout, with Daimler float feed, governor, and patent water-cooler of the marine condenser type. The number of revolutions per minute is 750, accelerating up to 1,000, and the brake horse-power is 10. Lubrication is effected by means of gravity oil feed cups ; water circulation by a gear-driven rotary pump. The petrol is fed by pressure from a portion of the exhaust, ignition being by the Simms-Bosch magneto-electric system. The transmission is by a single friction cone on the Daimler principle. The power is transmitted from the main longitudinal shaft through the differential gear on the Cannstatt system, by means of two pinions engaging two internal gear

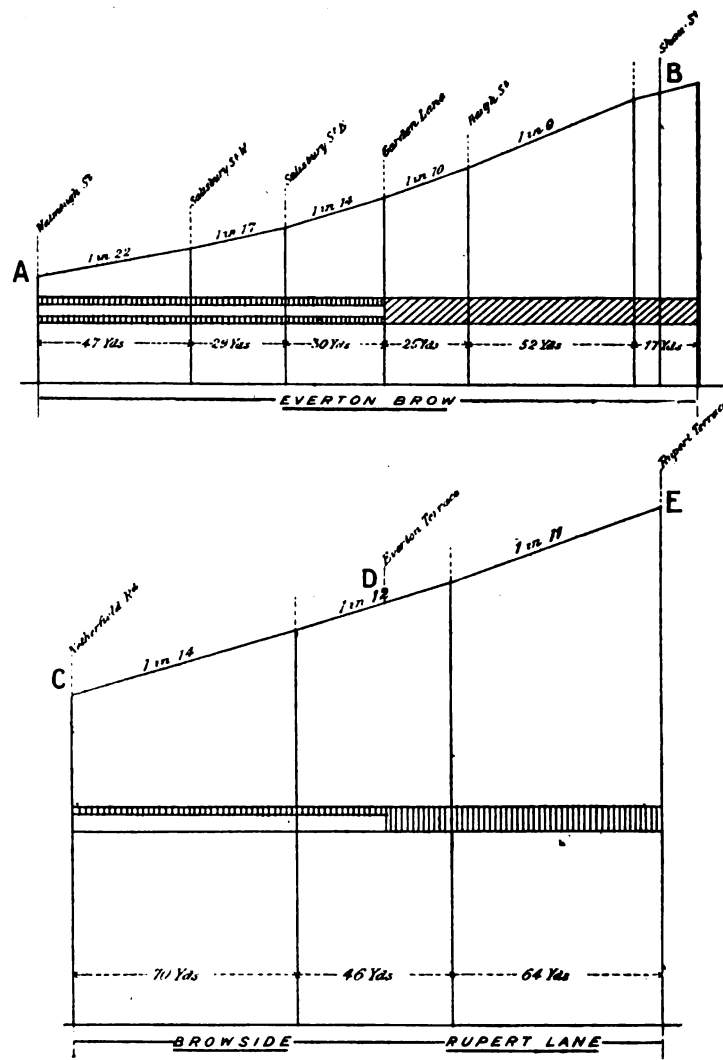


DIAGRAM OF GRADIENTS—HILL CLIMBING CONTESTS.

wheels fixed to the back road wheels. The speed-changing gear is on the Cannstatt system, four speeds being provided, viz., 1½, 2½, 4, and 6 miles per hour. With this Cannstatt gear, the first and second, and the third and fourth, speeds are each controlled by one lever, by which means, as the two couples of speeds are independent of each other when changing, neither couple affects the other set of gear wheels. The Cannstatt principle for changing speeds also automatically disengages the friction cone when either speed lever is actuated. The reverse speed is obtained by dropping into gear a special cog-wheel, giving a speed of 4 miles per hour. The lever actuating the reversing gear also disengages the forward speeds, or puts them out of gear. Two circumferential brakes, worked by worm gear from the driver's seat by hand, act on the hind wheels. There is also a double-acting brake clutch on the first speed shaft, and a sprag on the back axle.

CLASS B.—Vehicle No. B1.—£530. The Lancashire Steam Motor Company.—This vehicle is 18 ft. 4 in. long, by 6 ft. 5 in. extreme width. The platform, which is of the ordinary lorry type, and has 75 sq. ft. of

available space inside the beading, rests on the main frame of channel steel. The height of the platform from the ground is 3 ft. 6 in. when loaded with 5 tons. The wheels are of the military type with steel naves, oak spokes, and ash felloes. The drive is taken on the felloes close to the tire, thus relieving the spokes of all the strain usually put upon them by the driving force. The front wheels are 2 ft. 10 in. diameter, and have tires 4 in. wide. The back wheels are 3 ft. diameter, with tires 5 in. wide. The boiler is of the fire-tube type, and has 80 sq. ft. of heating surface. It is fired from the top through a central shoot, the fuel used being gas coke. It is tubed with tough, seamless copper tubes, and a fusible plug is fixed in the crown plate of the fire box. The working pressure is 225 lbs. per square inch, and the test pressure 450 lbs., the safety valve being set at 225 lbs., and blowing into the water tank. The automatic feed pump works off the compensating gear shaft; it is arranged so that any excessive water above the amount required to feed the boiler is pumped back to the tank, the regulation being performed by a hand wheel fixed to the driver's seat, whilst a small steam pump is placed under the seat for auxiliary feeding. The fire is regulated by a hinged ash pan, and also by the lid covering the central firing shoot. A Klinger safety water gauge is fitted. The boiler is placed in front of the driver's seat, with the coke bunkers on each side, the fuel capacity being sufficient for an ordinary day's work. Double check valves are fitted to both feed pumps. The engine is horizontal, compound, reversing, with cylinders $3\frac{1}{2}$ in. and $6\frac{1}{2}$ in. diameter by 6 in. stroke. It runs at 420 revolutions per minute. The engine, the change gear, and the compensating gear are entirely enclosed in a dust-proof, oil-tight casing, thus ensuring perfect lubrication of all parts. There are exceptionally large and long wearing surfaces. An arrangement for working both cylinders with high-pressure steam is fitted. The gearing is of steel throughout, and all wheels have machine-cut teeth. The drive from the end of the compensating gear shaft is taken to the felloe of the wheel by a Renold Silent chain, improved pattern, this chain having all its links bushed with hardened steel, and pins of large diameter also hardened. The cushion drive, arranged in the small, hollow pinions on the compensating gear shaft, is an important feature in this machine. It relieves the chains and the working parts of the engine of the shock usually put upon them when starting a heavy load, for, with this arrangement, the engine gets almost a revolution before the full power is exerted at the road wheel. The compensating gear shaft is of special construction, being hollow from end to end. A bolt is put through this shaft and takes the end thrust caused by the bevel wheels off the bearings, thus reducing the friction considerably. The compensating gear can be locked by an internal clutch arrangement by pulling a lever under the frame of the vehicle. There are no keys used in the machine, all wheels being put on flanges. Castellated nuts are used throughout, each being secured by a split pin. The water tank has a capacity of 150 gallons, and is fitted with a removable strainer. A water lifter and 40 ft. of suction hose are supplied with the machine.

CLASS C.—Vehicle No. C1. £750. The Thornycroft Steam Wagon Company, Limited.—This vehicle is 22 ft. 6 in. long, by 6 ft. 6 in. extreme width across platform. The wheel base is 12 ft. 6 in. longitudinally, and 5 ft. 7 in. (centre to centre of tires) transversely. The leading wheels are 2 ft. 9 in. diameter, with 6 in. tires, and the driving wheels 3 ft. 6 in. in diameter, with 8 in. tires. The wheels are of the Company's standard construction, with metal naves, oak spokes, ash felloes, and steel tires. The tires are of special steel, and are weldless. The ordinary divided axle method of steering is adopted, the leading wheels being turned by a hand wheel operating through a worm gear; the steering gear is thus self-locking in all positions. The leading axle is mounted on a pivot at its centre, which ensures the vehicle a three-point support, and relieves the channel-steel underframe from transverse twisting actions. The carrying platform is of the usual Liverpool lorry type, surrounded by a low rim. Provision is made also for mounting steel stanchions, with connecting chains, when required; this platform is of very substantial construction, and is of oak. The dimensions of level platform area are as follows:—Length, 15 ft. $1\frac{1}{2}$ in.; width, 6 ft. $5\frac{1}{2}$ in.; area, 97.5 sq. ft.; the height of the platform above the road surface, when the vehicle is unloaded, is 4 ft. 3 in. The boiler is of Thornycroft patent central-fired steam wagon type, having straight water-tubes circularly arranged around the fire. The total heating surface is 132 sq. ft., and grate area 4.25 sq. ft.; the gauge working pressure is up to 225 lbs. per square inch. It is placed in the centre of the front of the vehicle, and all mountings are arranged so as to be easily within reach of the driver, and in full view. Coke or coal is used as fuel, and the fire is served through the central firing-hole of the top vessel; regulation is obtained by a hinged door in the ash pan, and by the firing-hole cover. Two safety-valves are fitted, one of which lifts if the normal working pressure is exceeded, while the second is set at about 10 lbs. per square inch above normal pressure, and rises in the event of the first failing to act from any cause. The water gauge is of the "Reflex" unbreakable pattern; all mountings are so designed as to be readily and thoroughly cleansed from limy deposit. When the wagon is running the boiler is fed by a pump driven directly by the engine; when stationary, the engine may be disconnected from the transmission gear and run free, thus feeding the boiler; or the feed water may be supplied by an injector of special pattern mounted on the boiler itself. This injector is so designed that the cones may be removed for examination, adjustment, or cleansing while the boiler is under steam. The feed supplied by the engine pump is heated by the exhaust steam, thus economising fuel. Suitable screw plugs are fitted in the bottom cover of the boiler for

draining and cleaning; a blow-off cock is also fitted. The fire is cleaned through a special "clinking-hole," easily accessible from the rear side of the vehicle. The water tubes are cleaned by removing the top cover and passing a steel wire brush through each. The soot on the outsides is removed by taking off the sides of the boiler casing; this casing has been expressly designed so that the sides may be easily taken out and replaced for this purpose. The boiler has ample steaming power, and, due to the large volume of the fire box, requires serving with fuel at intervals of about three-quarters of an hour only. The engine is horizontal, compound, reversing, having cylinders 4 in. and 7 in. in diameter by 5 in. stroke, with a constant lead radial valve gear of special design, permitting of any degree of linking-up. It is completely enclosed in a dust-proof and oil-tight casing; at the same time, all parts are readily accessible for adjustment. The lubrication is by the "splash" method. The engine indicates 30 h.p., at 500 revolutions per minute. The exhaust passes through a feed-heater, and is thence discharged into the smoke box; a spark-arrester is fitted in the smoke box, through which all the flue gases are drawn by the draught created by the engine exhaust. The exhaust steam mingles with the flue gases, and is emitted invisibly from the funnel. The transmission is of the Thornycroft patent chainless type, and is fitted with a special gear for hill-climbing. A machine-cut steel pinion mounted on the engine crankshaft meshes with a machine-cut bronze spur-wheel on the first portion of the countershaft. The countershaft is in three separate parts, the middle portion being connected with the first and third by special enclosed large-surface universal couplings, whereby the vertical motion of the bearing springs is taken up in a mechanically perfect manner, the driving effort on the rear wheels being continuous even over the roughest roads and under all conditions of loading. The third countershaft part carries a cast-steel, double-helical pinion; this third part is itself borne in bearings formed in a pair of arms carried on the rear axle, and restrained from the underframe; these arms being one form of the Thornycroft patent bell-crank drive. The cast-steel double-helical pinion meshes with a cast-steel spur ring borne on the differential gear, which is carried by the rotating rear axle. The rear axle is itself borne in axle boxes of the locomotive type, attached to the centre of the plate rear-bearing springs, and the road wheels are finally driven by the method known as the company's patent spring drive, short helical springs, in compression, being employed in this case. For stiff gradients, or bad roads, a smaller steel pinion on the engine crankshaft is caused to engage with a larger spur wheel on the first part of the countershaft, thus giving a greater ratio of gearing down between engine and road wheels. The normal gear ratio is 12.4; the hill-climbing gear ratio is 21.7. A powerful screw-down brake is fitted, whereby wooden brake blocks are applied to each rear tire; reversal of the engine provides a second ready and effective braking action, much employed by drivers; a foot-operated band brake is also provided for in the design. The bunkers have a capacity of 38 c. ft., which is estimated to carry the fully-loaded vehicle a distance of fifty miles. The feed tank contains 240 gallons of water, which should take the fully-loaded vehicle eighteen to twenty miles. A steam water lifter is fitted on the feed tank, and a length of hose provided; by this means the tank may be replenished from any source available on the route; the tank can be filled in about five minutes. Apparatus is fixed for blowing the soot from the exterior of the boiler tubes by means of a steam hose. A steam blast is also available for accelerating steam raising, and a bye-pass valve is fitted for admitting full boiler pressure to the low-pressure cylinder when occasion demands. The vehicle is fitted with a draw hook, enabling a trailer to be hauled when required.

CLASS C.—Vehicle No. C2 (Oil Fuel). £450. C. and A. Musker, Limited.—This vehicle is 18 ft. long by 6 ft. 6 in. extreme width. The wheel base is 10 ft. longitudinally and 5 ft. 7 in. (centre to centre of tires) transversely. The platform, which is wholly made of hard wood, exactly similar to an ordinary Liverpool lorry, is 18 ft. long by 6 ft. 6 in. wide, and has 110 sq. ft. of available surface for carrying goods. It is supported on springs, and has no machinery attached to it, so that it can spring, bend, or crosswind without affecting the machinery. The height of the platform is 4 ft. when light and 3 ft. $9\frac{1}{2}$ in. when loaded with 5 tons. The wheels are 3 ft. and 3 ft. 4 in. diameter, the front tires being 5 in. wide and those of the driving wheels 6 in. wide. They are of the military type, running loose on the axles, with metal naves, oak spokes, and ash felloes. The steering is on the Ackermann principle, controlled by a screw and hand wheel. The arrangement of the boiler and machinery is on the Musker automatic system; that is, the supply of the air, oil, and water to the boiler is wholly automatic, independent of the driver, and in proportion to the amount of steam required, thus leaving the driver only to start, stop, and steer the vehicle. The boiler is the Musker patent semi-flash type (requiring no water level or water gauge-glass), wholly made of weldless steel coiled tubing with only three joints. It is fixed on the machinery platform underneath the wagon. The heating surface is 70 sq. ft. and the test pressure 2,500 lbs. per square inch. The fuel used is crude, or any ordinary commercial, petroleum and some kinds of refuse oil. The working pressure is 250 lbs. per square inch; two safety valves are fitted, escaping into chimney. The boiler feed pumps are in duplicate, coupled together and driven by steam separately from the main engine. They also drive the oil pump and air fan. The speed of the pumps is governed automatically by the pressure of steam in the boiler; that is, when the steam pressure reaches the maximum the feed pumps and fan will run at the lowest speed, just keeping up the pressure, yet not exceeding it; immediately the pressure drops the speed of the

feed pumps and fan increases to their maximum until the boiler pressure reaches its maximum, when the speed again decreases. The oil burner is the Musker patent type, in which the oil is vapourised and mixed with all the air required for combustion before leaving the burner. It has no small holes to become choked with carbon, and the strength of the flame is varied automatically in accordance with the heat required. The engine is horizontal reversing, with four single-acting cylinders $4\frac{1}{2}$ in. diameter by 5 in. stroke. It is entirely enclosed in a dust-proof oil-tight casing, and made suitable for using superheated steam. Steam lift valves of the mushroom type are fitted, and a special wedge-type reversing gear allowing the driver, with his reversing handle, to run the engine with a steam cut-off varying between $\frac{1}{4}$ and $\frac{3}{4}$ stroke. The full-speed revolutions are 500 per minute, and the engine will develop 25 b.h.p. No condenser is fitted, the exhaust being superheated and passed into the chimney. The usual differential gear is fitted with bevel wheels and pinions working in an oil bath, and the wagon is driven by either single or double gear, the ratios of gearing between the axle being 12 to 1 and 26 to 1. The driving wheels of the wagon are driven through the fellows by means of a wrought iron plate bolted on, and by toothed spur gear consisting of internal wheels made of steel mixture bolted to the plate, which gear with the wrought steel countershaft pinions. All the wheels have teeth machine cut from the solid. All the machinery is carried by a platform or frame made of teak, strengthened with wrought steel plates suspended at each corner to the axles, and fitted with spiral steel springs in such a manner that the extra shock of starting quickly or undue jolting is absorbed by the springs, and is prevented from injuring the gear or engines. A screw-down band brake is fitted to the outside of each internal driving wheel, the reversing of the engine providing the second brake. The water tank has a capacity of 160 gallons, and the oil tank a capacity of 50 gallons. The driver's seat is placed on a front corner of the wagon, but can be placed right in front, leaving an absolutely clear platform area of 18 ft. by 6 ft. 6 in., or 117 sq. ft.

CLASS C.—Vehicle No. C3 (Coke Fuel). £400. C. and A. Musker, Limited.—This vehicle is identical with the one above described, except that the fuel used is steam coal or coke. The feed pump is driven from the engine shaft by spur gearing, and the amount of water delivered to the boiler is automatically determined by a superheat regulator, the driver not having to give it any attention. The firing is central and from a hopper on the top of the boiler, the fierceness of the fire being automatically regulated by a steam pressure governor acting upon a centrifugal fan, and so shutting off or putting on the forced air blast, as more or less steam is required. No attention is required by the driver beyond keeping his hopper filled with coke about once every three hours.

CLASS C.—Vehicle No. C4. £650. Simpson and Bibby.—This vehicle is 17 ft. long by 6 ft. 6 in. extreme width. The level platform is 11 ft. 6 in. long by 6 ft. 6 in. wide, and has 74.75 sq. ft. of available space for goods. It is designed to carry a net load of 5 tons at 5 miles per hour, to haul a trailer carrying an additional load of 3 tons, and to ascend gradients of 1 in 9. The wheels are of the makers' improved military gun carriage pattern, with phosphor bronze hubs lined with magnolia anti-friction metal. The spokes and felloes are of teak. The steering wheels are 32 in. diameter, with steel tires $4\frac{1}{2}$ in. wide, and the driving wheels are 36 in. diameter, with 6 in. tires. Ball thrust collars are fitted throughout to reduce end friction. The steering is of the makers' outside arm type, the mechanism having no loose joints or gearing. The following advantages are claimed for this method. Ease of manoeuvring in crowded traffic, thorough control of the vehicle, absence of backlash, small amount of energy required owing to the stresses being taken on ball thrust collars, and simplicity of mechanism. The boiler is the makers' positive circulation type, generating super-heated steam under automatic control, and has been tested to 1,000 lbs. per square inch. There are no internal joints exposed to the fire gases, and it is claimed that any water can be used without the necessity for cleaning out arising. The following advantages are claimed for this type of "instantaneous" generator: Absolute safety, great simplicity, ready adaptation to meet the varying requirements of the road, load, and weather; freedom from scale or deposit, automatic working, economy in fuel and water, and large capacity for rapid hill-climbing. The engines are of the Simpson and Bibby single-acting type, all the bearings being in constant thrust, with automatic lubrication and fully enclosed. Each of the two engines has three cylinders 4 in. diameter by 4 in. stroke. There are no slide valves, piston valves, or stuffing boxes, the steam being admitted by plain lift valves only, and no loose parts in the crank chamber. The engines can develop 50 h.p. on the brake when necessary. The following advantages are claimed for this type of engine: Freedom from vibration, great simplicity, small amount of attention required; no knock due to wear, no parts to adjust, great power for hill climbing, economy in steam consumption, and accessibility. The gearing is of bronze and steel, all machine cut, two ratios being provided. The double-acting pumps are of large capacity, and made of phosphor bronze throughout. The framework is of the best Indian teak, plated with spring steel. There are four members, each 5 in. deep by 2 in. wide, running parallel to one another for the full length of the vehicle, without any transverse joints, but cross-braced with teak and steel. The following advantages are claimed for this construction: Great strength combined with flexibility; freedom from the trouble of adjacent members disconnecting by reason of the firm method in which the steel can be bound to the wood; freedom from jar, owing to the action of the timber in absorbing vibrations on rough roads. The tanks hold sufficient water for three hours; the bunkers sufficient coal for six hours. A Gresham

and Craven steam sanding gear is fitted for use in frosty weather, and a steam lifting gear for filling the tanks with water, together with 30 ft. of special armoured hose.

CLASS D.—Vehicle No. D1. £650. The Thornycroft Steam Wagon Company, Limited. This vehicle is 18 ft. 6 in. long by 9 ft. extreme width. The wheel base is 10 ft. longitudinally and 5 ft. $6\frac{1}{2}$ in. (centre to centre of tires) transversely. The leading wheels are 2 ft. 9 in. and the driving wheels 3 ft. 3 in. in diameter. They are of the company's standard construction, having metal naves, oak spokes, ash felloes, and steel tires. The tires are $4\frac{1}{2}$ in. wide on the leading wheels and 5 in. on the drivers. The steering is by the divided-axle method, the leading wheels being turned by a hand steering wheel operating through a worm gear, and is therefore self-locking in all positions. The steering gear is so designed that all the straining actions are self-contained. There is an open lorry platform, the dimensions on level being 12 ft. 6 in. by 5 ft. 8 in. The loading area is, therefore, 71 sq. ft. The height of the platform above the road surface, when unloaded, is 4 ft. 3 in. The boiler is of similar pattern to that of No. 2 of the 1899 trials, viz., two horizontal annular water spaces connected by straight tubes: the top vessel has been increased somewhat in depth, but in other respects the type is unchanged. The boiler casing has, however, been simplified, and is now readily removable, giving access to the exterior surface of the tubes for cleaning. The heating surface is 83 sq. ft., and grate area 2.4 sq. ft. The gauge working pressure is up to 200 lbs. per square inch. The fuel is good coke, or steam coal. The engine also is of similar type to that of No. 2 of 1899; it is enclosed, hori-

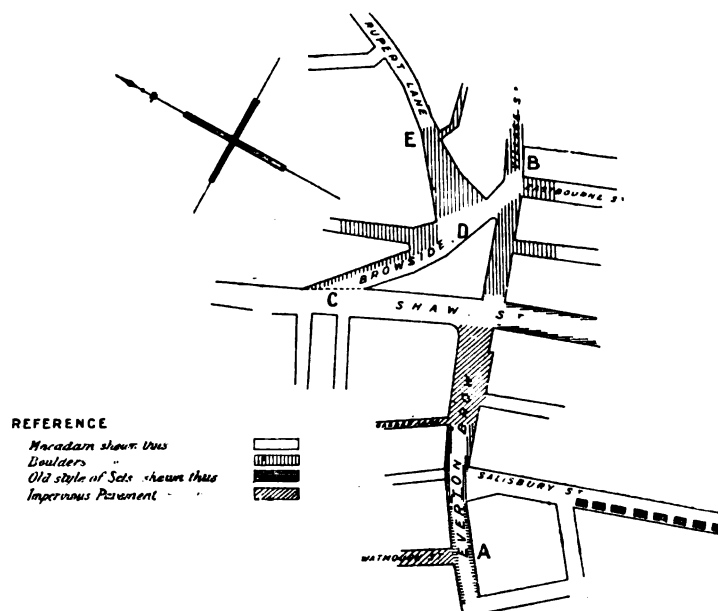


DIAGRAM OF ROUTE OF HILL-CLIMBING CONTESTS.

zontal, and compound, with cylinders 4 in. and 7 in. diameter by 5 in. stroke; at 5 miles per hour the engine makes 440 revolutions per minute, and will develop 20 b.h.p. at this speed. The transmission is chainless, and in its main features resembles that of No. 2 of 1899. Two machine-cut pinions ride upon a square formed on the engine crankshaft, either of which may engage with machine-cut spur wheels on the first part of countershaft (giving thus the normal and hill-climbing gears respectively). The countershaft is, as before, in three pieces united by special universal joints. The third countershaft piece is, however, carried in a much improved manner. The perch frame of 1899 is now entirely absent, and is replaced by a pair of brackets of simple triangular form, borne on the rear axle, and carrying the third countershaft part with double-helical cast-steel pinion, in a pair of ordinary adjustable bearings. This device is termed the Thornycroft patent bell-crank drive, and is a feature of all present standard vehicles of this company. The bell-crank is prevented from turning round the rear axle by a radius rod hinged to the under-frame of vehicle in such a manner as to permit full play to the rear bearing springs. It will be observed that, by this device, the transmission, whilst mechanically perfect, has minimum restraint of all parts, and is thus relieved from all unnecessary straining action. The rear wheels are driven by the Thornycroft patent spring drive as in 1899; the total gear ratios are 10.1 and 17.7. Shoe-brakes are fitted, operating on both rear wheels, and applied by the driver through a foot lever. Reversal of the engine provides the second brake required by law. The bunkers carry about 6 cwt. of coal, and the feed-tanks have a joint capacity of 168 gallons. The vehicle is fitted with draw-gear, enabling a trailer to be hauled when desired.

CLASS D.—Vehicle No. D2. £535. T. Coulthard and Company, Limited.—This vehicle is 18 ft. $5\frac{1}{2}$ in. long by 6 ft. 6 in. extreme width. The level platform is 12 ft. 6 in. long by 6 ft. 6 in. wide, and has 81.25 sq. ft. of available space for goods. It is designed to carry a net load of from 4 to 5 tons of goods. The road wheels are of gun carriage pattern,

and fitted with steel hubs and bronze bushes. The felloes are of ash and the spokes of oak. The front wheels are 2 ft. 9 in. diameter with 5 in. tires. The hind wheels are 3 ft. diameter with 6½ in. tires, and are fitted with the makers' triangular drive and band brake drum, whereby the drive is taken direct to the wheel felloes. The boiler is of the vertical fire-tube type, with straight solid drawn steel tubes, suitable for either coke or coal, and the tubes are electrically galvanised, making them non-corrosible. It is constructed for a working pressure of 225 lbs. per square inch, and hydraulically tested to 450 lbs. per square inch, the inspection being carried out by the National Boiler and General Insurance Company. The boiler is dropped between the main frame, to which the bearer bars are bolted, and is placed behind the front axle. The foot-plate is below the main frame and the boiler is fired from below. This arrangement not only increases the tractive force and relieves the front wheels, but also enables the driver to see well in front of the vehicle. An auxiliary steam pump is provided, having a separate suction from the tank and a separate delivery and check valve on the boiler. Two safety check valves are fitted to the boiler, and are so constructed that they can be examined while the boiler is under steam, and, should the driver omit to open communication from the feed pump to the boiler, which under ordinary circumstances would mean bursting the pipes, the delivery will be discharged through a bye-pass directly before him. The automatic feed pump, which is worked off the end of the second motion shaft by means of an eccentric, is so constructed that the ram is not exposed to grit and dirt, whilst the stuffing box and valve boxes are easily got at. The engine is of the makers' improved, compound, link-reversing gear pattern, giving 25 b.h.p. at the normal speed of 450 revolutions per minute, and fitted with piston valves. The cylinders are 3½ in. and 7 in. diameter, by 6 in. stroke. A distinguishing feature of this engine is the arrangement of the valves and main cover. Only one cover is used for both cylinders and piston valves. This cover is arranged to serve also as the receiver, whilst supporting the multiplier which is used for admitting "live" steam to the low-pressure cylinder, the exhaust from the high-pressure cylinder being diverted to the atmosphere. A peculiarity of the makers' multiplier is that it also serves the purpose of a relief valve, thus preventing damage through accumulation of water in the cylinders. Stuffing boxes are not used. The steam regulator is a balanced valve attached to the high-pressure cylinder steam chest, by means of which the steam supply may be easily regulated or instantly shut off. The crank shaft, carried in two long bearings, together with the eccentrics, is cut out of a solid billet, and on one end of the shaft is a pinion engaging with a gear wheel on the second motion shaft. On a square in the middle of this shaft slide a pair of unequal pinions, either of which may be caused to engage with corresponding gear wheels carried on the crown of the compensating gear. The compensating gear shaft is the only one projecting through the casing, and carries a pinion at each end. A locking gear for putting the compensating gear out of action and causing both driving wheels to revolve together is provided. The whole of the gearing, which runs in a bath of oil, is of cast steel, machine cut, no keys being used in the transmission gear. The compensating gear shaft is carried in long bushed bearings attached to the casing, and these bushes are in turn carried in spherical bearings supported in cast steel brackets rigidly bolted to the main channel frame. The method of supporting the cylinder end allows a ball and socket motion, and it will therefore be seen that the engine, motion work, gearing, and shafts, being self-contained in a rigid casing, are kept in accurate mesh and alignment, whilst the method of suspension allows the main frame sufficient elasticity and spring without setting up internal strains and cross wind in the transmission gear. The boiler feed-pump and feed-water heater are also self-contained with the casing. Pivoted to the back axle under each side frame are two thrust rods, through which the drive is transmitted to the compensating gear brackets. Renold Silent chains are used, forming a flexible connection between the back axle and the compensating gear shaft. The main frame of the vehicle is of channel steel, braced and constructed so as to carry the whole of the machinery, boiler, and tanks. The wagon is supported on four laminated plate springs attached to the axles, which are of cast steel. The front springs are held to the axle in the usual way. The springs on the hind axles are so arranged that the spring for holding the leaves together is made to clip the axle and securely bolted. The advantage of this method is that there is a slight movement longitudinally and transversely without straining the spring supports. The water tank is at the rear, the bulk of the weight coming directly on the back axle. The capacity of this tank is about 145 gallons, which is sufficient for a run of about 15 miles on ordinary roads. The bunkers have a capacity of 12 cubic feet. The brake arrangement consists of steel cables lined with hard wood blocks and coiled round the brake drum. By means of a worm and wheel and a simple system of levers, pressure is applied or released at both ends of each cable simultaneously, thus securing the advantage not only of a very powerful brake but of one that is double acting and equally efficient when running either backward or forward. The whole of the operating and controlling levers are within range of the driver, who is also conveniently placed for firing up. The front axle is divided, the steering being on a modified Ackermann principle, giving a big angle of lock without reducing the stability of the wagon. To enable the engine, gearing, and tank to be examined the platform is hinged at the back end. A trailing bar is fixed to the main channels, also rollers behind the driving wheels.

CLASS D.—Vehicle No. D3. £465. Mann's Patent Steam Cart and Wagon Company, Limited, Canning Works, Leeds.—This vehicle is 13 ft. 6 in. long by 6 ft. 5 in. extreme width. The cart body is 6 ft. 5 in. long by 6 ft. 2 in. wide, and has 39.6 sq. ft. of platform area. It is con-

structed of flanged steel plates firmly stayed by angle irons. It can be tipped, and a windlass is provided for hauling it back again. The cart is a separate construction from the engine, and is carried on its own road wheels, 4 ft. diameter, with tires 5 in. wide, which are connected to and rotated by the engine road wheels of the same diameter and width of tire. The two coming close together make the width of tires 10 in. on each side of the engine. This method of coupling them together has been adopted for the reasons mentioned in the description of Vehicle No. D4. The general arrangement and design of the mechanical parts are the same as for Vehicle No. D4, except that in this case the engine is mounted on the top of the boiler, instead of on the extension of fire-box shell sides behind.

CLASS D.—Vehicle No. D4. £500. Mann's Patent Steam Cart and Wagon Company, Limited.—This vehicle is 18 ft. 6 in. long, by 6 ft. 4 in. extreme width. The lorry body is 12 ft. long by 6 ft. 3 in. wide, and has 75 sq. ft. of platform area. The frame is constructed of steel channels, firmly braced together by flanged steel ends and covered with wood flooring. The body is balanced and can be tilted in order to make the engine more accessible for adjustment and examination. This body is a separate construction from the engine and is carried on its own road wheels, 3 ft. 6 in. diameter, with tires 5 in. wide, which are connected to and rotated by the engine road wheels of the same diameter and width of tire. The two coming close together make the width of tires 10 in. on each side of the engine. The makers claim, in reference to the use of a trailer, that this method of connecting the light locomotive to the trailing vehicle more fully complies with the following Local Government Board regulations than if they were connected by a draw bar. It is also claimed that the above arrangement simplifies the requirements as to brakes, whilst the two wheels being side by side and close together the wide surface thus presented does not damage soft or weak roads as much as if the wheels were following each other in the same track. The boiler is of the locomotive type, with mild steel plates rivetted by hydraulic machinery. The working pressure is 160 lbs. per square inch. The shell fire-box side plates are extended a considerable distance rearwards so as to form a water tank and bed for carrying the engine. The engine is of the horizontal compound type, with cylinders 4 in. and 6½ in. diameter by 8 in. stroke. Reversing is effected by the makers' patent single eccentric reversing gear. The exhaust steam is taken into a super-heater in the smoke-box to render it invisible when emitted from the chimney. The fuel used is ordinary gas coke. All the gearing is of cast steel, the ratios provided giving speeds of 5 and 2½ miles per hour. Two brakes are fitted; one a band brake, acting upon a pulley on the intermediate shaft, and one upon the rim of the wheel of the lorry or vehicle. The reversing gear is also utilised as a brake. The vehicle has a differential gear, water lifter and indiarubber hose pipe, worm steering gear, pump, injector, lamps, tarpaulin cover, and the usual outfit of tools.

CLASS D.—Vehicle No. D6. £650. The Mechanical Transport Company.—This vehicle is 18 ft. 8 in. long by 6 ft. 6 in. extreme width across the platform, or over the hubs of wheels. The wheel-base is 10 ft. longitudinally and 5 ft. 6 in. (centre to centre of tires) transversely. The wheels are of solid timber segments, forced by hydraulic pressure upon wedges placed in a dovetailed groove around the boss, thus securing the centres without the use of bolts. The tires are closed on the periphery by hydraulic pressure. The steering wheels are 2 ft. 9 in. diameter by 4 in. on the tread, and the driving wheels 3 ft. diameter by 5 in. on the tread. The surface of the platform available for loading is 12 ft. 10 in. by 6 ft. 3 in., equal to 80 sq. ft. The height of the platform is 3 ft. 9 in. unloaded, and 3 ft. 6 in. when loaded with 5 tons. The boiler is of the vertical water-tube type, and is placed in front of the driver. The upper and lower annular multiples are made from weldless rolled steel rings, and a central steel steam and water drum is fixed across the centre of the upper multiple. The tubes, 192 in number, are of solid drawn steel, ¾ in. diameter, expanded into the multiples. The heating surface of the boiler is 90 sq. ft., and the grate area 2½ sq. ft. The working pressure is 250 lbs. per square inch, the test pressure being 500 lbs. per square inch. The fuel used is coke or coal, fed from the top. The safety valve exhausts into the chimney. A direct-acting automatic steam pump supplies the feed water, which is heated by the exhaust steam before passing into the boiler. The engine is a horizontal compound with two h.p. cylinders of 3½ in. diameter, and one l.p. cylinder of 5 in. diameter, with 5½ in. stroke. The three cranks are set at angles of 120 degrees to one another. Stephenson link motion is provided for controlling the h.p. valves, and a loose eccentric controls the l.p. valve. The engine is thoroughly encased, and runs in an oil bath. Power is transmitted from the engine by means of a pinion wheel, engaging with the outside rack of the compensating gear which is placed upon a counter-shaft. The extremities of this counter-shaft carry the two sprocket wheels, which are connected by chains to similar wheels placed in radius levers and supported upon the driving axle. The latter transmit the power through pinions engaging with internal racks which are bolted to the driving wheels.

The programme is exceedingly well arranged, and contains a great deal of information that is both useful and interesting. Diagrams have been prepared showing the gradients between Liverpool and Manchester via Warrington, and on the return journey via St. Helens; and between Liverpool and Blackburn via Wigan and Chorley, and the return via Preston and Ormskirk. Street maps of Liverpool, Manchester, and Blackburn are also given. The trials will be attended by representatives of four Government Departments, the High Commissioner for Canada,

and five of the Agents-General for the Colonies. A number of municipal corporations have also intimated their intention of sending deputations to watch the trials, whilst the pleasure side of automobilism will be represented by the Automobile Club, who have arranged to tour down to Liverpool, starting from Leamington to-day (Saturday).

FURIOUS DRIVING CASES.

BEFORE the Guildford Borough Bench, last week, Dr. Edward H. Lehwess, of London, was summoned for furiously driving a motor carriage in Spital Street, Guildford, on the 12th ult. Defendant sent a letter requesting that the case should be adjourned. The Chief Constable asked that the case should be gone into then, and the evidence was therefore taken. Sergeant Hall said that at one o'clock on the day in question he was in Spital Street, when he saw defendant coming along the London road on a motor-car. He was driving at about twelve or fourteen miles an hour. Besides foot-passengers, there was a brougham coming up the street, in which were Canon Grant and several others. Witness held up his hand, and defendant slowed up a little. As he passed, witness told him he was driving too fast. Just at this moment the brougham was passing, and the horse reared repeatedly. The driver, however, managed to keep the horse under control, and a serious accident was thus averted. The defendant slowed down considerably after passing witness, but almost immediately put on speed again. Afterwards witness saw defendant in the Angel Hotel, when the latter admitted he was going ten miles an hour, which he did not think excessive. Canon C. F. Grant said he was in the brougham, sitting with his back to the horse. He saw the motor-car through the window, and it was, in his opinion, going quite the pace the last witness had said. It nearly upset their brougham. Witness thought it only fair to say that the horse had been startled just previously by another motor-car. William Puttock, the driver of the brougham, said the horse reared three times. The motor-car must have been going at the rate of thirteen or fourteen miles an hour, and the pace was only a very little decreased as the car passed the brougham. Defendant was fined 20s. and costs.

At the Lincoln City Police Court, last week, Mr. George Dyke, trading as R. M. Wright, of Lincoln, was summoned for driving a motor-car at a furious rate, to the danger of the public, on Sunday, 19th May. The evidence of the prosecutor showed that on Sunday the Lincoln Friendly Societies held their annual church parade. They formed a procession in the G.N.R. station yard and marched towards the Cathedral, via High Street, Silver Street, and Lindum Road. When the procession arrived at the bottom of Lindum Road the defendant came round a corner about 150 yards away at a rate of fourteen miles an hour. The speed was so great that before the defendant could pull up he had run into the crowd. The car first struck two boys named Elston, knocking one down and running over him. The defendant then put on the hand-brake, but the car knocked a man, with a baby on his shoulder, four yards, and a young woman named Thompson was knocked down, and the car had to be lifted off her body. Defendant said he had four brakes on, but they all refused to act. He was not travelling above six or eight miles an hour. The defendant's wife said when the car went into the crowd it was only going about two miles an hour. The chairman said the case was very serious, and the defendant would be fined £5 and £1 10s. 6d. costs.

At the Bearsted (Kent) Petty Sessions, last week, Mr. Fritz Mulenkamp, of Brighton, was summoned for driving a motor-car at a greater speed than twelve miles an hour at Harrietsham on April 29th. Mr. Staplee Firth defended. William Bonner, engaged at a mineral water manufactory, said that he was engaged sorting bottles at the back of the Roebuck Inn, Harrietsham, when, hearing a motor-car approaching, he ran into the road to look to his horses, and held up his hand for the car to stop. It was not stopped, and in passing it knocked him over, hurting his hand and leg. He estimated the speed at over twenty miles an hour, and owing to that fact could not identify the occupants of the car. Several villagers agreed with the witness as to the speed of the car. How it was the defendant came to be summoned did not transpire, but Mr. Firth at once took the objection that there was no evidence that it was defendant's car, and without going further the Bench dismissed the case. They, however, declined to allow defendant costs.

A MOTOR-CAR DISPUTE.

At the Southwark County Court, on Tuesday, last week, the Clarkson and Capel Steam Car Syndicate, Ltd., of Great Dover Street, S.E., sued Mr. Wm. Edgar Muntz, of the Junior Constitutional Club, to recover £14 16s. for work done to a steam car. The defendant paid £5 into court, but counter-claimed for £12 18s. 9d., money paid by him for putting the motor-car into proper condition. Mr. Herron said that the plaintiffs fitted a condenser to the defendant's car in the way he ordered. It was quite experimental, and they did not take any responsibility in regard to it. They did all that was required of them, for which they had made a very fair charge, but the car would not work properly, and the defendant declared that he had paid

£12 18s. 9d. to get it to go. Mr. James Walter Kerr, secretary and manager to the plaintiffs, said the special part of his firm's business was the manufacture of a patented condenser for motor-cars, the chief merit of which was that the tubes were covered with a network of wire, which greatly increased the radiating surface. Witness had an interview with the defendant in regard to supplying one of these, but the defendant did not care about it being on the front of the car. Eventually defendant ordered a particular arrangement of his own to be carried out, which involved the placing of the pipes of the condenser under the frame of the car, and thus practically they were shut away from the air. Witness told him he could not tell how the condenser would act in that position, and he would not take any credit or blame for the result. He suggested that the cost would be about £8, but this would not include the fixing. The actual cost of the parts came to £7 12s. 6d. A man was sent to Harrow Road, where the car was, witness having given him full instructions in the hearing of the defendant. The man's instructions were, however, altered during the job, and altogether forty-five hours were spent upon it. When the invoice was sent in the defendant replied that he had been told that the cost of the whole job would not be more than £8, and further that it was not completed as the machinery would not act. Chas. Talbot, the fitter, said the defendant gave him fresh instructions during the course of the job, and he carried them out to the best of his ability. Mr. Thomas Clarkson, managing director of the plaintiff firm and inventor of the condenser, said defendant was distinctly given to understand that he would have to take all the responsibility of the work which was quite experimental. The cost of the condenser fitted in its proper place would have been about £9, and this would have been guaranteed to act perfectly. The defendant said he called on the plaintiffs as professional experts fully acquainted with hot water circulation, and consulted them as to whether their cooling tubes would act lengthways. He received an answer in the affirmative. He also asked whether the water would cool sufficiently in the length of pipe he proposed, but was told that that was uncertain. There was no question as to the proper circulation. The work was carried out without any supervision on the part of the plaintiffs and without any interference on his part, but when he put the motor to work he was amazed to find that whilst the water in the tank got boiling hot that in the tubes remained cold. This he discovered was due to the fact that the in-take and out-take pipes had been fixed at the same level and thus the water would not circulate. The plaintiff refused to alter this until he paid them for what they had done, which was nearly double the agreed price, and he was obliged to put the car in the hands of Messrs. Frazer and Frazer. They altered the pipes and the water circulated perfectly. He had to put in some more cooling tube, but that he would not have objected to pay the plaintiffs for had they done it. After a hearing which occupied nearly the whole day, his Honour found that the defendant did not order the in-take and out-take pipes to be fixed as they had been. Upon the whole he gave judgment for the plaintiffs for £12 without costs, and for defendant on the counter claim for £8, but with costs. Judgment was entered accordingly.

THE FATAL ACCIDENT AT KNARESBOROUGH.

THE adjourned inquest on Frederick George Oxby, of Knaresborough and Doncaster, who was killed recently at Knaresborough by jumping out of a runaway motor-car, was concluded last week. The coroner, who read the evidence, said neither the police nor himself proposed to call any further evidence. He then summed up, and reviewed the evidence taken previously, pointing out that the deceased knew the condition of the car and its brakes, and the requirements of the Light Locomotive Act. He said that if the deceased had only retained his seat he would have been unharmed. The jury returned a verdict of "Death by misadventure."

WE understand that a public service of motor-cars is shortly to be started in Reading, ten Daimler vehicles having already been acquired.

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THE Motor-Car Journal.

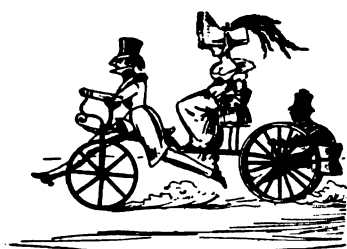
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COMMENTS.



ARRIVING in York on Friday, last week, one of our correspondents saw Mr. J. D. Siddeley on his dark green Daimler, and a few minutes later another car whizzed by. There is not a town or considerable village in the county of broad acres where a motor-car is not to be seen, and at Huddersfield Dr. Norman Porritt is using a Locomobile in his daily practice with much comfort and a great saving of time. At Leeds, Sheffield, Ilkley, and Scarborough we have lately had similar evidence of the popularity of the automobile in a county which is famous for its horses and cheerful in its agricultural outlook. Further testimony comes in a long correspondence which is going on in the leading daily papers of Yorkshire wherein many people have sought to defame the motor-car. But the days of attack without defence have gone and the letters of irritated drivers of horses have called forth some vigorous replies from automobilists.

Doctors and Cars.

DOCTORS continue to correspond in their professional papers on the merits of steam, petrol, and electric automobiles. Having been converted to the motor-car in general, they are now discussing the merits of particular vehicles with a zest and attention to technical details which must be gratifying to all interested in the growth of the industry. Dr. Reginald Groves, of St. Ives, is using a New Orleans car in his country work, and says that the only time required in connection with his journeys is two minutes to oil the engine before starting and fifteen minutes every 70 to 100 miles to go over the whole machine and the bearings. This is a point often neglected by motorists; but one which is highly essential to the easy running of the vehicle, to say nothing of the advantage in durability of the working parts. Dr. Groves calculates the cost per mile is $\frac{1}{2}$ d. for petrol, electricity, and lubrication, and he allows 2d. per mile for repairs of tires—a sum which he has not reached, but which he recommends as a fair estimate in judging the cost of automobilism. As a matter of fact, the experience of Dr. Bruce Porter, of Windsor, shows that, in his case, the repairs during a year and three months' use cost only $\frac{1}{2}$ d. per mile.

Numbering Motor-Cars.

A GENTLEMAN, whose excessive modesty has prevented the publication of his name, has been writing to the papers advocating that motor-cars should be numbered. He confesses to the ownership of a car and acknowledges that he is "financially interested in motor companies," and appears to regard it as highly creditable that he should urge the numbering of automobiles. We should have liked him better had he had the decency to sign his name and not to set himself at variance with the great majority of motorists under the protection of a *nom de plume*. This suggestion is trotted out every now

and then as though it would solve the problem of speed and cure the evil temper of horses that persist in shying at mechanical vehicles, and generally misconducting themselves on the public highway. Cannot the advocates of numbering, labelling, etc., recognise that these problems will be settled in due course by the operation of the law of common sense. Horses are becoming accustomed to automobiles, and motorists are daily growing in expertness with regard to the driving of vehicles, and in that combination lies the safety of the public—a safety far more assured than would be that relying on an iron plate reducing cars to the position of hansom cabs.

Motor-Cars v. Tramways.

THE extremely unsatisfactory state of the tramway question at Darlington has led a gentleman of that town to come forward with a good suggestion, in the local Press. Darlington, he states, has a population of 44,500, and therefore cannot be expected to keep a Municipal tram service going as a paying concern, which would, according to the figures of an expert, require to carry 56,000 passengers a week to cover expenses. Half the capital outlay of a tram service is swallowed up in laying down permanent way. Have a motor-bus service, municipal or private, at half the original cost, and not necessarily bound to any particular route, by any hard-and-fast lines, is his wise conclusion, and a conclusion which local authorities elsewhere, perplexed with the problem of transporting a not too numerous population, would do well to consider.

The Taxation of Motor-Bicycles.

SEVERAL correspondents reply to the question raised by W. S. L. in our last issue with regard to the taxation of motor-bicycles. Both motor bicycles and tri-cycles must pay the tax of 15s. for a two or three-wheeled carriage. Quadricycles come under the classification of a four-wheeled carriage and have to pay a tax of two guineas. Seeing that motor-vehicles are subject to identically the same conditions as horse-drawn carriages so far as the carriage tax is concerned, it appears only fair and equitable that such vehicles should be exempt from taxation if used exclusively for business purposes, as is the ordinary horse-drawn vehicle. We understand some of our correspondents are in communication with the Inland Revenue Office on the subject, and shall be glad to hear as to the result of their inquiries. It should, however, be noted that a carriage is only exempt from the tax if it is never used for any other purpose than trade, and that if a motor-bicycle was ever used for a pleasure trip it would be unable to escape taxation, the limitation to "business purposes" being very keenly regarded.

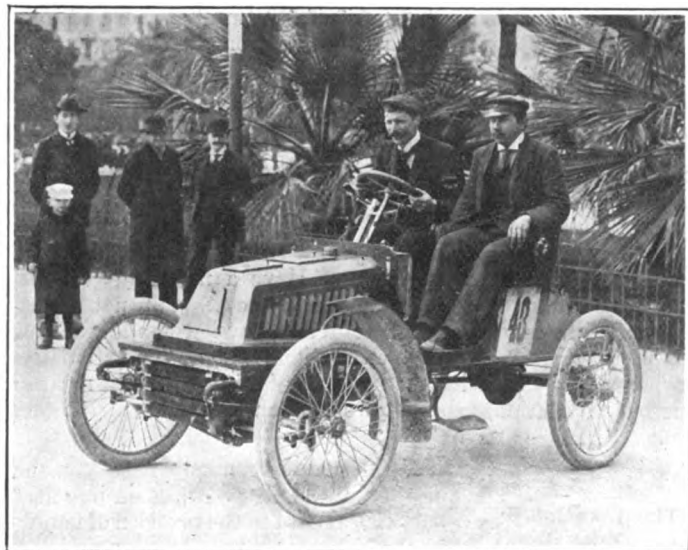
Electric Motor-Cars.

M. C. JEANTAUD, whose name is associated in France with the infancy and rise of motor-cars, particularly those of the electrical type, gives some interesting facts and opinions in his preface to a new book on electrical cars that has just been published in Paris. The future of electric motor-cars, he says,

depends on improvements in accumulators, in which for a few years past no great progress has taken place. If this state of things were to last, he admits, the prospect for electric vehicles in towns would be a gloomy one, but ten thousand minds throughout the world are on the alert. The discovery of a light and lasting accumulator able to propel a carriage a distance of sixty or seventy miles without recharging, and weighing not more than 10 or 15 per cent. of the total weight of the car, will bring its inventor a fortune of several millions. M. Jeantaud does not think that the next improvements in accumulators will be due to chance. Although everything has not yet been got out of lead, he does not think that this metal will give the ideal accumulator, nor does he believe in gas accumulators, or thermo-electric batteries. He is rather inclined to believe in an apparatus producing electricity direct, weighing not more than two hundred-weight, and yielding a current of 3,000 volts.

M. Henri Farman and his Racers.

THE accompanying illustration shows M. Henri Farman on the 12 h.p. Darracq car in which he took part in the recent race meeting at Nice. M. Farman has competed in only three races, and has in each case come in first on the car shown. These races were, two at Pau, in the month of February last, distance about 246 miles, at an average speed of forty miles an hour, and a race at Nice in the month of March last, distance



M. HENRI FARMAN ON HIS 12 H.P. DARRACQ RACING CAR.

284 miles, in which he arrived first in spite of unfavourable weather and mountainous roads. The new Darracq car which M. Farman will drive in forthcoming races has a four-cylinder motor of 28 h.p. The total weight of the car is about half a ton. It is geared to attain a speed of eighty miles an hour.

Coals of Fire.

It's nice to find that the motorist bears the persecuting P.C. no malice. A pleasing illustration of this comes from Darlington, where the other day a fishmonger was charged with being drunk whilst in charge of a pony and trap. The latter went along at a great speed, twenty miles an hour, one side of the pony, and one wheel of the trap on the pavement all the time. The bitterest enemy of a motor-car could not have accused it of doing worse. Of course, the policeman could not catch the pony and trap, but a motor-car coming along, he accepted the hospitality of the driver, and went in chase, finally landing his quarry at the police-station, where the fishmonger was duly fined. We hope that an account of the incident will find its way into the official organ of the police force, and that

some members of the force will call it to mind when tempted to break the ninth commandment.

Motorphobia.

WITH the approach of the dog-days, motorphobia is becoming rife. Our contemporary the *Rural World* gives relief to one of the afflicted, who asks through its columns, "Why should these new terrors have the monopoly of the roads with their noise, foul smell, and dangerous speed? The police say they cannot control the motors, as they are unable to overtake them. Surely something can be done to protect peaceable rate-payers in their undoubted rights to the safe usage of the high roads." We may be prejudiced, but we do think that the owner of a motor-car has as much right to the use of highway or by-way as any other ratepayer. As to police control, it would cease to exist altogether in some districts were it not for the fines and costs levied on the unfortunate motorist who has the hardihood to traverse them.

Motor-Cars and the U.S. Signalling Corps.

THE United States Signal Corps has been experimenting for considerably over a year with three motor-vehicles, for the purpose of determining their exact value in field service. One of these vehicles has been in actual service for several months at Manila, and the other two have been used experimentally at Fort Myer, Va. It was the original intention of General Greely, who is in charge of the corps, to procure for these experiments automobiles having the three different kinds of power—electricity, steam, and petrol—in order to test them all. This plan, however, was afterwards changed, and three electric-cars were purchased, because of the belief that their batteries would make them of great service in operating field telegraph or telephone lines. We understand, however, that it has now been decided to extend the experiments to include vehicles operated by other kinds of power, and that recently one steam and two petrol cars have been ordered. These vehicles are, we believe, to be of special design, in accordance with certain specifications of the U.S. War Department.

One Disadvantage.

LIKE all good things, the motor-car has its disadvantage, not to its happy owner, but to those who may be taken at a disadvantage by its arrival at an unsuspected hour of night or day, absolutely inconsistent with any other recognised mode of transport. A surprise of this order, but a pleasant one, occurred at Chantilly last Sunday. King Leopold of Belgium was there, in time for the races, though not due in Paris till the next morning. Acting on a sudden impulse His Majesty took train to Namur, where his motor-car was in waiting, and drove himself the greater part of the way to Chantilly. Of course it was nice and friendly of King Leopold to drop in unexpectedly; but what would the officers of a certain military Power think if their energetic ruler took to paying surprise visits on his swift and silent motor-car?

Accidents in France.

THE monthly report of accidents caused by various means of transport in France during March, published by *Le Vélo*, shows 816 caused by horses, of which 77 were fatal. Railways come next with 9 deaths and 76 injuries. Bicycles were responsible for 3 deaths and 66 injuries, and motor-cars for 3 deaths and 29 injuries. Looking at the figures another way we find the horse responsible for 83.70 per cent. of the fatalities, railways 9.78, motor-cars 3.26 and cycles 3.26. The horse heads the list of injuries with 81.21 per cent.; railways come next with 8.35, cycles next with 7.25, and motor-cars last with 3.19. It is really quite surprising to find the motor-car so far down this painful list after all one hears about its bloodthirsty propensity, particularly when it is remembered that in France the pace allowed is 7 miles more on the open, and 4½ miles more

through villages and towns than in this country. But what about our friend the horse? The motor-car will rob him of the conduct prize yet if he does not mend his ways.

Motor-Cars Popular in America.

THE popularity of motor-cars in America may be gauged by the fact that a studious correspondent, who has been busily engaged on Sundays counting the pleasure vehicles which pass up and down the Broadway, Harlem, has discovered that the numbers of horseless and "horse" vehicles are about equal. Continuing, he says: "As fully three-fourths of the filth of the streets is caused by horses, think how much cleaner the streets and how much purer the air will be when horse traffic is forbidden in the main thoroughfares. By comparing the number of people the large, clean, rapid-moving trolley carries as against the little, dirty, odorous, slow-moving horse-car (of which New York still has many), one can readily see that when applied to merchandise much more can be transported, and that without congesting the streets as now."

Points of Recommendation.

A USEFUL bit of criticism on the way in which makers of motor-cars seek to attract buyers comes from Mr. Labouchere, who points out that "most of them dwell upon their cars having beaten other cars in races." This, however, is a point that does not appeal to everyone—in fact it will only interest a limited number. The doctor, tradesman, or carriage owner does not want a racehorse; nor does the ordinary motorist seek a vehicle in which speed and lightness cause comfort and convenience to be obscured. Accessibility and simplicity of working parts, proof of durability, certainty of easy running, reasonable price, and general convenience are merits that appeal more strongly to the average inquirer than bald facts as to abnormal and unnecessary speed.

An Automobile Tournament.

A GRAND automobile tournament is being organised in connection with the Pan American Exhibition which has just been opened at Buffalo, N.Y. The tournament will take place in the Stadium during the week beginning Sept. 16, and will consist of sports and trials to test the skill of the *chauffeurs*

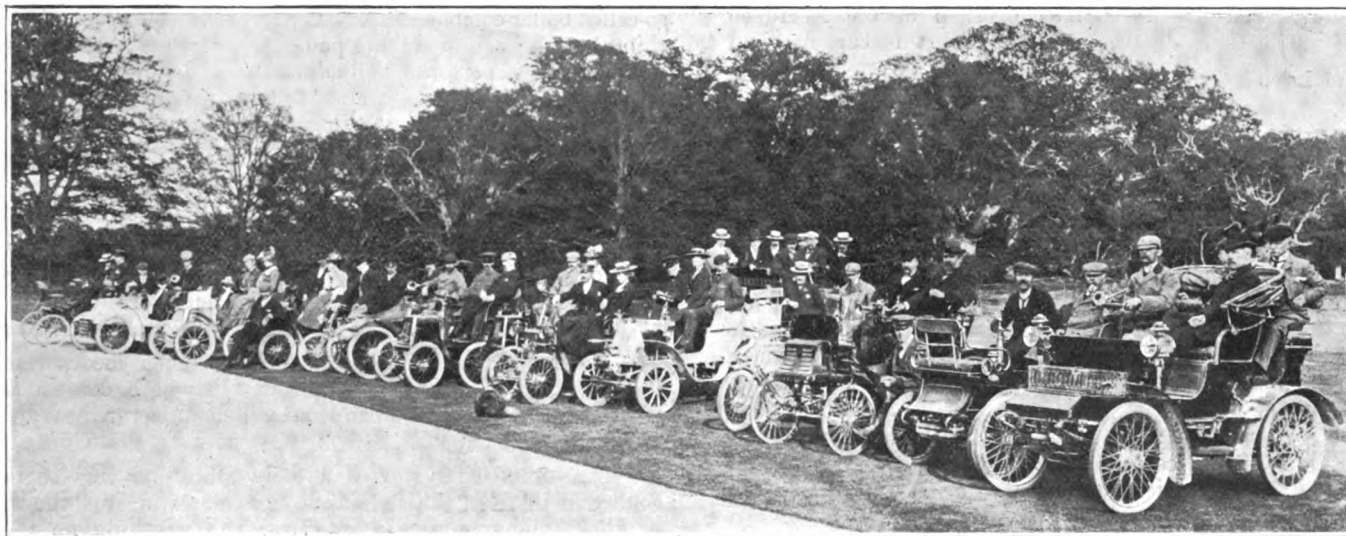


Photo by]

THE MEET OF THE READING AUTOMOBILE CLUB.

[Walton Adams, Reading.

The Reading Automobile Club.

AT the invitation of Mr. C. E. Keyser, J.P., the Reading Automobile Club held a meet at Aldermaston Court on the 18th ult., and the event proved a complete success. Mr. Keyser and some of his family went out to Reading on purpose to join in the run, and they all expressed themselves as delighted with the mode of travelling. Seventeen cars put in an appearance, conveying about fifty members, including the Mayor of Reading, Mr. Arthur Russell and Miss Russell, Drs. Major and Price, Mr. Paxton Petty, and many others. The meet was a most enjoyable one, and the variety of up-to-date and handsome motor-vehicles was much admired and commented upon. The vehicles included several 5 h.p. Renaults, a 12 h.p. racing Darracq, a 6 h.p. Darracq, a De Dion voiturette, two Accles-Turrells, two Benz cars, a Baby Renault, Ariel, De Dion, and Components trikes, and many others. In the course of a few words of cordial welcome Mr. Keyser expressed his belief and interest in the automobile movement, and, as a member of the County Council, declared that he would raise his voice against any harassing restrictions. After a pleasant ramble over the Park the members returned to Reading via Burghfield Common, no hitch or breakdown of any kind occurring to any car either upon the outward or homeward journey.

and the mobility and economy of the various types of motor-vehicles. The culminating feature of the week will be a competitive speed contest over the famous Buffalo-Erie Road, open to self-propelled vehicles of all types and countries. A great many Club runs have been planned with Buffalo as the objective point, the most important of which will be the tour or endurance demonstration of the Automobile Club of America from New York to Buffalo, a distance of about 460 miles. This run will be made during the week preceding that of the tournament, starting from New York on September 17.

Launches v. Motor-Cars.

DISPLACEMENT of one industry by another is a common tendency in industrial development, and it is being reported that the steam launch builders of the Thames are bewailing the rivalry of the motor-car. The patrons of the river launch have taken to the automobile with an eagerness that has caused the older builder to be ignored; hence his tears. It may be that there is a temporary reaction in favour of the automobile; but the Thames will flow on as hitherto, and so long as the glorious river remains so will launches and boats be found on its waters. Those who fancy motor-cars will drive the launch into some musty museum as a relic of riparian pleasures show a singular want of thought. What launch builders must do is to

bring their designs up to date, and by providing better launches, etc., do for those who love the river what the automobile is doing for those who prefer the road.

"What's in a Name?"

AN American contemporary expresses disgust at the indiscriminate way in which English people use the word "car" in connection with all forms and conditions of motor-vehicles. All sorts of authorities are quoted to prove that the word is only applicable to small carriages of burden, vehicles for a railway, circus, or funeral. Without consulting one single Lexicographer we venture to defend the use of the word "car" as an appendix to "motor" in a broad and general sense, inasmuch as it is undoubtedly a corruption of the word carriage, which stands for anything on wheels which carries anything, dead or alive—a gun, a baby, its father or mother, goods, dry or wet, light or heavy. It may, however, interest our contemporary to learn that at the Liverpool heavy motor-vehicle trials held this week there were entered motor-lorries, wagons, and drays. Motor-buses and vans are also known in this country, and it is to distinguish between these heavier vehicles of commerce and the lighter ones of pleasure that the word "car" is generally used.

Local Law.

A RECENT decision of the Aberdeen Justice of Peace Court is curious, and would be, if final, serious. The Court found that a motor-lorry with a trailer attached was a locomotive, and must, therefore, conform to the Locomotives Act as regards speed, hours of running, and the number of men in charge. Supposing such a finding to be correct, the Liverpool Trials of this week have all been run on a wrong basis. A man should have marched in front of each vehicle with a red flag, and the speed of the vehicles should not have exceeded five miles an hour. Fortunately, the finding of the Aberdeen Baillies is not like unto the laws of the Medes and Persians, and we are glad to hear that the Speedwell Motor-Car and Cycle Company, to whom the maligned vehicle belongs, have lodged an appeal.

Motor-Cars in War.

MR. A. G. HALES, the well-known war correspondent, has been ventilating his views on motor-cars in war through the columns of *Our Candid Friend*. As a means of transport he has nothing to say about the motor-car, probably because its advantages in this respect are too fully recognised to call for comment, though unfortunately not so fully adopted. It is the armoured motor-car, able to go anywhere that cavalry can, that Mr. Hales advocates. His illustrations remind us somewhat of the old Roman tortoise, excepting that just a small portion of the wheels on which it should run are exposed, not the legs of its bearers. To quote Mr. Hales:—"Each car should be built to carry not more than six riflemen and one Maxim gun. The sides of the car should be perforated with horizontal loopholes for rifles, the front, rear, and centre being loopholed for a Maxim gun. The car should be pointed both front and rear to avoid atmospheric obstruction to speed, and to throw off both rifle and gun fire."

Invicta!

WHILST Lancashire is still testing the practical value of the motor-car for commercial purposes, Tunbridge Wells has gone boldly into the matter and inaugurated a service from London, which commenced yesterday (Friday). Disgusted with the vexatious railway delays to which their town has been so long subject, the leading tradesmen have agreed to support a scheme brought forward by the London and Counties Distributing Company. Starting from the Spur Inn, Borough, at night, the cars, of which there are to be five, will each convey eight tons of goods, five on the car and three on a trailer. Arriving at Tunbridge Wells in the small hours of the morning, the goods

will be distributed conveniently early, and at a cost below that of the slower railway. Ten shillings per ton is the rate fixed, smaller parcels being accepted *pro rata*, sixpence being the minimum for those of less than twenty-eight pounds. Kentish fruit growers, and growers of fruit elsewhere for that matter, who are given to complaining that it does not pay to pick their fruit should follow the example of Tunbridge Wells—start a motor-car service which will not only collect their fruit but deliver it in London in half the time and at half the cost of the railway.

The Steam Motor-Truck.

IN the last issue of the *Engineering Magazine* Mr. James Grieve Dudley asks whether from the rich man's plaything (i.e., motor-car) cannot be evolved a motor-truck which may successfully supersede horse traction for heavy loads on a basis sound commercially and practicable mechanically. There is nothing new in the question, though there are many points worth consideration urged by the writer in his interesting sketch of a universally adopted type of motor-truck, equally reliable amongst the sands of Florida as on the rocky heights of the far North-West. That the motive power must be steam he takes for granted, and on pure water to generate this steam he insists, at the same time deploring the growing tendency towards so-called boiler-compounds. As such a vehicle would far eclipse anything horse-drawn in staying power the writer thinks high speed of secondary importance, and advocates a driving gear without mechanical speed-change gear. As to transmission of power, the writer considers that the chain and sprocket must be rejected. Steering should be done by steam power, be self-locking, and require no muscular effort on the part of the driver.

A WELL-TO-DO citizen of Newton, Mass., formerly owned six horses and a number of carriages. A few years ago he bought a motor-car, and last year a second. He has now sold all his horses and carriages and uses the automobiles exclusively.

A NEW steam vehicle company has been incorporated in Indiana with a capital of £20,000. It will be known as the White Steam Wagon Company and will manufacture heavy steam wagons in Indianapolis.

LLANDUDNO has started a daily motor-car service to the Snowdon district, which allows sufficient time for the ascent of the famous mountain, obviates the painfully long cross-country railway journey to its base, and beats the coaches on their own ground.

THE overland automobile trip from San Francisco to New York, undertaken by Messrs. Alexander Winton and Charles B. Shanks on a 9 h.p. Winton Car, began at 7.15 a.m. on Monday, the 27th ult., from the Ferries Building, in San Francisco. A packet from General Shafter will be delivered to General Miles in New York. The route taken will probably measure four thousand miles.

UNDER the title of "Three Men in a Vehicle," the St. Louis Motor-Carriage Company, of St. Louis, Mo., U.S.A., publish a booklet, which can hardly be called a catalogue or price-list, because it contains no reference to the company's cars, excepting what is to be found in the valuable collection of testimonials from all sorts and conditions of men, which occupy alternate pages with the story of the three men and their vehicle. As for the story, it has been told before in the *Motor-Vehicle Review*, and is a most interesting account of a run from Boston to New York on one of the company's runabouts.

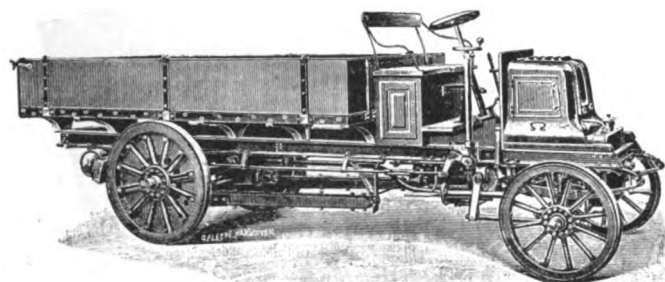
THE Straker Steam Vehicle Company, Limited, has been registered, with a capital of £12,000, to acquire from S. S. Straker the benefit of certain existing inventions belonging to him in connection with steam motor-vehicles, and to carry on the business of mechanical and electrical engineers, etc. The number of directors is not to be less than two nor more than four; the first are S. S. Straker and L. R. L. Squire. The registered office is at 9, Bush Lane, Cannon Street, E.C.

The Liverpool Heavy Motor-Vehicle Trials.



THE interest of the automobile world has this week been centred on the heavy motor-vehicle trials carried out in Lancashire under the auspices of the Liverpool Self-Propelled Traffic Association. The object of the trials and a description of the competing vehicles was given in our last issue.

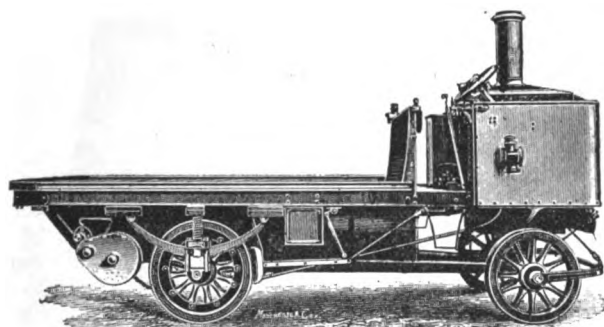
The Judges of the trials are Sir David Salomons, Professor H. S. Hele-Shaw, Mr. Everard R. Calthrop, M.Inst.C.E., Mr. S. B. Cottrell, M.Inst.C.E., Mr. Boverton Redwood, and Mr. Henry H. West, M.Inst.C.E. Mr. E. Shrapnell Smith has again proved a most enthusiastic honorary organising secretary, and he has been most ably assisted by Mr. Ernest A. Rosenheim, B.Sc., assistant hon.



MESSRS. MILNE'S PETROL LORRY.

secretary; Mr. Basil H. Joy, hon. press secretary; and Mr. Henry Fowler, Assoc.M.Inst.C.E., hon. controller of records. There was also a good staff of senior observers, depot and road observers, whose services proved indispensable.

The trials throughout the week have been followed by about twenty different motor-cars, including Mr. Critchley's 16 h.p. Daimler, Mr. A. J. Boulton's 12 h.p. Cannstatt-Daimler, Mr. H. Edmund's 9 h.p. Daimler, Mr. J. Holder's 16 h.p. Napier, Mr. Mark Mayhew's Panhard and Dr. Muhlenkamp's 8 h.p. Panhard, Mr. Critchley's car has been used throughout the tests by the Judges, while the other vehicles have been made use of by the very influential official deputations that have followed the trials. The latter included Colonel C. H. Scott, C.B., R.A.; Lieut.-Colonel F. B. Elmslie,



THE SIMPSON AND BIBBY STEAM WAGON.

R.A.; Lieut.-Colonel H. C. L. Holden, R.A., F.R.S.; Lieut.-Colonel R. E. B. Crompton, R.E.E.E.; Captain F. Lindsay Lloyd, R.E.; and Captain C. H. H. Nugent, R.E., representing the War Office; Mr. Francis Salisbury, Postmaster of Liverpool, and his assistant representing the Post Office; Colonel C. H. Scott, C.B., R.A., Ordnance Consulting Officer for India; and Commander G. T. Wingfield, R.N., Superintendent of the India Store Department, representing the India Office; Mr. A. E. Brooke-Hunt, representing the Board of Agriculture; Mr. G. W. Willcocks, M.Inst.C.E., of the Local Government Board; and representatives of the Canadian and Victorian Governments, the Manchester Chamber of Commerce, and other bodies.

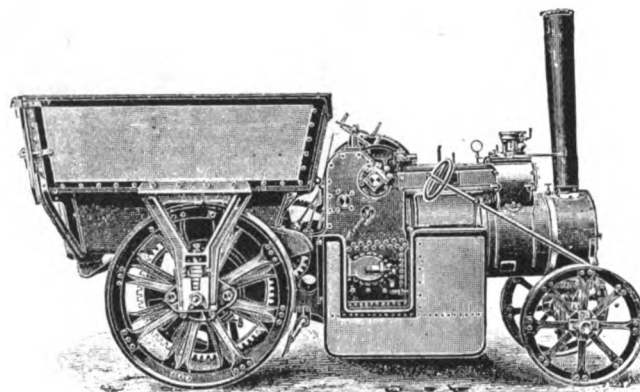
As stated in our last issue, thirteen entries were altogether received in the four classes. The following eleven vehicles put in an appearance:—

CLASS A.

Official

No.

- A 1. } Geo. F. Milnes and Co., Limited, Motor Department, "Motoria,"
A 2. } 17, Balderton Street, Oxford Street, W. Tare weight,
1 ton 19 cwt. 2 qr.



THE MANN STEAM CART.

CLASS B.

Official

No.

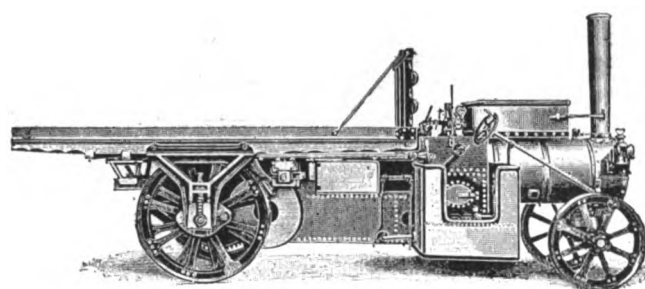
- B 1. The Lancashire Steam Motor Company, Leyland, near Preston.
Tare weight, 2 ton 19 cwt. 2 qr.

CLASS C.

Official

No.

- C 1. The Thornycroft Steam Wagon Company, Limited, Chiswick and Basingstoke. Tare weight, 6 ton 8 cwt.
C 2. C. and A. Musker, Limited, The Brook, Liverpool—oil firing. Tare weight 3 ton 16 cwt. 2 qr.
C 3. C. and A. Musker, Limited, The Brook, Liverpool—coke firing. Tare weight, 3 ton 14 cwt. 3 qr.



THE MANN STEAM WAGON.

CLASS D.

Official

No.

- D 1. The Thornycroft Steam Wagon Company, Limited. Tare weight, 3 ton 16 cwt.
D 2. T. Coulthard and Co., Limited, Cooper Road, Preston. Tare weight, 3 tons 14 cwt.
D 3. } Mann's Patent Steam Cart and Wagon Company, Limited,
D 4. } Canning Works, Dewsbury Road, Leeds—cart (tare, 4 tons) and wagon (tare, 3 ton 19 cwt. 3 qr.) respectively.
D 5. Simpson and Bibby. Tare weight, 4 ton 1 cwt.

Leamington was the appointed meeting place for those members of the Automobile Club who intended motoring down to Liverpool, but we are afraid that not a single member of the Club stayed at the Regent Hotel on Saturday night. True, Mr. Mayhew drove down from London, but he "put up" with a friend in the town. For ourselves, we grate-

fully accepted a seat on the beautiful new 16 h.p. Daimler, which attracted so much attention at the recent Exhibition, and journeyed to Coventry to meet Mr. J. S. Critchley, one time manager and now director of the Daimler Company. Assembled at Coventry were Captain Lloyd, one of the representatives of the War Office, who had come down by road on an M.M.C. Panhard, driven by Mr. Seal; the car, which had four passengers up, and also carried two heavy portmanteaux, had a very fine run down from London without accident; Mr. Muhlenkamp and party on a 6 h.p. Panhard, having ridden from Brighton; Mr. Oliver Stanton, and others.

Sunday morning was bright with sunshine, and it was intended an early start should be made—so

winding that fast travelling was out of the question. That did not matter, however; they were very beautiful, and their leafy shadiness was much appreciated. The first stop—necessitated by taking a wrong turning—was made at a pretty little village, by a river-side, about forty miles on the journey. On a restart being made it was found that the road to Stone was newly metalled, and some of the patches were over a hundred yards long. A bent stay rod, due to the fierceness of the clutch, caused a long delay, but matters were remedied by the aid of a jack and a block of wood. Stone—our luncheon place—fifty miles on the way, was reached shortly after one o'clock, but not before we had bent both stay rods again. A blacksmith this time was required, and it was not till four o'clock that we



C 1—The Thornycroft Wagon.

D 4—The Mann Wagon.

B 1—The Lancashire Wagon.

D 5—The Simpson and Bibby Wagon.

A Breakdown.

Photo by]

THE HILL-CLIMBING TRIALS AT EVERTON BROW.

[J. Watkins, Liverpool.

nine o'clock found us at the Daimler Works—but it was past ten o'clock before we could tear ourselves away from the attraction of examining the many good things there to be seen. Our fellow passenger was Capt. Lloyd, R.E., and a companion we would all wish to have when there are adjustments required. Notwithstanding the number of firms at present manufacturing cars at Coventry, it is a fact that on Saturday night there was an absolute famine of petrol in the town, and cars had to go to Stonebridge, where the landlord of the Inn was reputed to keep a stock of nearly forty gallons, which we were told he retails at 15d. a gallon.

The roads were in beautiful condition, but for the first twenty-five miles the Warwickshire lanes were so narrow and

were on our way again to Chester, where a short stop was made, only to run into the stable yard of the Grosvenor to see if there were any other cars. Birkenhead was reached at 6.20, the day's run of 110 miles having been most thoroughly enjoyed. For the crossing of the Mersey a special ferry had been chartered by Mr. Smith, but, alas! it was only used for the carriage of two cars, Mr. Critchley's and Mr. Mayhew's 24 h.p. French Panhard; this latter, however, arrived a few minutes in front of us, we having followed his tracks for the last fifty miles. On the ferry was a deputation of the Liverpool Self-Propelled Traffic Association to welcome us, and right merry were all—while waiting to see if other cars would arrive. The dinner hour passing, it was decided to cross the

river, and then to send the ferry boat back again to wait for stragglers. About ten o'clock the train party from London arrived and the Adelphi Hotel then rapidly filled with motor-men.

On arriving at the scene of operations on Monday morning it was found that of the thirteen entries, there were two absentees, D6, the vehicle of the Mechanical Transport Company, and C4, the second vehicle of Messrs. Simpson and Bibby. Of the eleven vehicles which took part in the hill-climbing trial at Everton Brow, the two entered by Messrs. C. and A. Musker, Ltd., of Liverpool, were withdrawn after having reached the foot of the Brow—one essayed to rise, but did not get so far as the pavement. In excuse it may be mentioned that both the vehicles only left the works for the first time on the Saturday previous. With Mr. Smith, punctuality is a *sine qua non*, and therefore at ten o'clock, the time set down on the programme, the first of the vehicles was sent forth on its journey up the hill. We may mention that the vehicles were all stored at the George's Docks and left that dépôt in procession at nine o'clock, Monday. Accompanying the vehicles was the huge 12 h.p. Cannstatt-Daimler, belonging to Mr. Boulton, which travelled up and down the hill with every vehicle, and carried some of the officials. All others had to walk up and

big car—a grand vehicle—C1, was started; and went through the trial well, although the wheels slipped a trifle in Rupert Lane. D1 was equally satisfactory. Milne's A2 travelled up the hill very fast, in fact, made the fastest journey of the day, stopped and started easily; came down the hill very fast and consequently took some distance to pull up. Milne's A1 performed well, but skidded a trifle at the Lane. This was the last car to go up, but its services were further required by the weary pedestrians to carry them back to the Adelphi—about twenty passengers availing themselves of the opportunity.

Directly after luncheon the vehicles were put through various manoeuvres at the docks and some of the drivers were remarkably smart in the handling of their wagons. Rain was descending most of the time the vehicles were exhibiting the ease with which they could be handled, and the morning, which had been dull and cold, was succeeded by alternating showers and weak sunshine in the afternoon.

Four o'clock once again found us at Everton Brow, the attendance, which had been but slight in the morning, being increased to a large crowd in the afternoon. The first of the laden vehicles to start was Milne's A2; then followed the Lancashire B1; Coulthard D2; Thornycroft D1; Mann's D4; Simpson and Bibby's D5; Mann's D3; Thornycroft's C1,



A2.—The Milne's Petrol Lorry.



B1.—The Lancashire Wagon.

THE HILL-CLIMBING TRIAL AT EVERTON BROW.

down each time, as it was really necessary to do so, because the two steepest portions of the rise were found to be shortly after the start and at the top of the Brow in Rupert Lane. The Coulthard was the first away, and stopped and started on the up-grade, showing great brake power down-hill. In turning into Rupert Lane, however, the lorry stuck for some time, but ultimately reached the top all right. The wheels of the Lancashire wagon skidded a trifle and had some little difficulty in starting, but afterwards proceeded all right.

Mann's D4 travelled up the hill at a great pace, and in the stopping test showed to great advantage; the brake power was also good. Mann's D3 also went up strong, but had to make three efforts to start—at each effort jumping back a couple of feet—but at last going off well, but "jibbed" a bit in turning corner into the Lane. Simpson and Bibby's D5 came up slowly, stopped, and restarted well; stuck at corner in Rupert Lane, back wheels slipping round, and ran back about a dozen feet, travelled a few feet, then stopped again; back wheels flying round and vehicle skidding. In coming down the hill when the brakes were applied this vehicle slewed round a trifle. The next vehicle was one of Musker's, but this did not travel far, although some time was spent, and half-an-hour's delay was caused in an effort to get it to go. Ultimately the Thornycroft

and Milnes A1. All travelled up well and went through their trials without incident, the whole proceedings of the afternoon being carried out briskly and with brilliant success. At one time the granite sets got rather greasy after a shower, but this did not seem to affect the travelling to any appreciable extent. The following are the official records of the day's trials:—

Gradient varying from 1 in 18 to 1 in 9.

VEHICLES UNLADEN.

VEHICLES (Continued).					Control on declivity
No. of car.	Makers	Propelled by	Mean Speed.		1 in 9 (sets) distance
			Up.	Down.	run before coming to rest.
			Miles per hour.		
A1	G. Milne and Co.	Petrol	3.77	4.27	16.5 feet.
A2	" " " " " " " "	"	4.2	5.18	51.5 "
B1	Lancashire Motor Co.	Steam	3.29	3.58	19.4 "
C1	Thornycroft Steam Wagon Co.	"	3.5	2.69	8.6 "
D1	" " " " " " " "	"	3.77	3.38	14.9 "
D2	Coulthard and Co. " " " "	"	2.97	2.38	6.5 "
D3	Mann's Cart and Wagon Co.	"	4.11	3.14	11.12 "
D4	" " " " " " " "	"	3.65	3.08	15.5 "
D5	Simpson and Bibby " " " "	"	2.75	3.86	25.1 "

THE GENERAL AUTOMOBILE AGENCY, D. Farman, Man., Garage open day and night, all cars in stock, 100-104, Long Acre, W.C.

VEHICLES LADEN.

No. of car.	Makers.	Load.	Mean speed, miles per hour.		Control on declivity 1 in 9 (setts) Distance run before coming to rest.
			Up.	Down.	
A1	G. Milne and Co.	1½ tons.	3.24	4.26	1 ft.
A2		1½ "	2.61	4.13	26.4 ft.
B1	Lancs. Motor Co.	5 "	2.95	3.12	15.5 ft.
C1	Thornycroft Steam Wagon Co.	7 "	2.92	3.15	13.6 ft.
D1		4 "	3.34	3.65	8.3 ft.
D2	Coulthard and Co.	5 "	3.08	3.05	15.4 ft.
D3	Mann's Cart and Wagon Co.	5 "	2.96	3.03	14.9 ft.
D4		5 "	2.78	3.93	13.7 ft.
D5	Simpson and Bibby	5 "	2.0	3.07	8.4 ft.

Speed of cars at moment of braking coming down Everton Brow.

CAR.	LIGHT.		LADEN.	
	Miles per hour.		Miles per hour.	
A1	...	6.6	...	2.8
A2	...	10.8	...	5.68
B1	...	3.4	...	3.36
C1	...	3.51	...	3.13
D1	...	4.21	...	3.39
D2	...	2.58	...	4.22
D3	...	2.75	...	2.66
D4	...	5.17	...	5.46
D5	...	5.33	...	3.54

belonging to the Liverpool Corporation, and the other to the Mersey Harbour Board—were seen at work, laden, on the road, while a couple of light cars were *en panne*. Mr. Boul's car, with Messrs. Worby Beaumont, F. R. Simms, and a full complement of passengers on board was soon passed. At Aigburth we came up with the Simpson and Bibby wagon, with five tons on board—travelling slowly and somewhat in distress, the rear axle having been strained by overloading, causing the slipper brakes to bind on the wheels. This trouble ultimately proved fatal, and the vehicle "gave up" at Speke. The next vehicles seen were the two Mann cars, both travelling famously. Our first stoppage was at a railway bridge, where the Thornycroft D1 was found stationary, having a hot bearing. Several cars passed, including Mr. Holden on his 16 h.p. Napier. We shortly afterwards came up with the third Thornycroft, used for the purpose of carrying the luggage of the party. Several passengers were also carried, including Mr. Spurrier, of the Lancashire Steam Motor Company. Mr. Mann also had a third vehicle engaged in carrying luggage, etc. The big Thornycroft, the Lancashire and the Coulthard were all soon passed and Widnes reached, where the Mayor held a reception and entertained the party. The townsfolk also turned out in numbers, as, indeed, did the public in large crowds all along the route, the scene reminding us

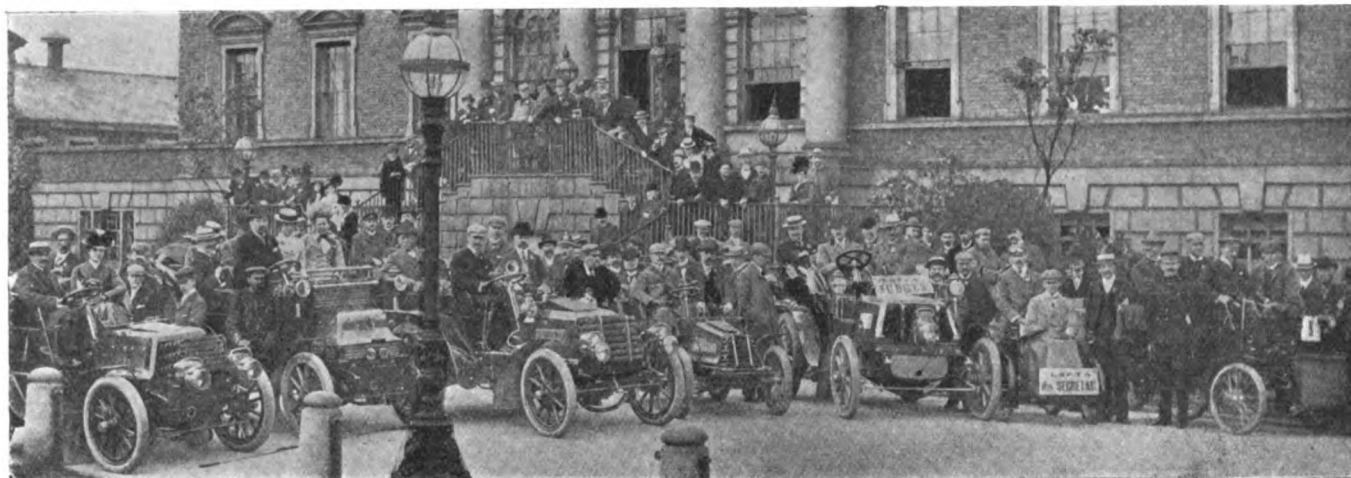


Photo by J.

THE VISITORS AT THE TOWN HALL, WARRINGTON.

[T. Birtles, Warrington.]

Tuesday opened fine and bright, and nine o'clock found all interested at the George's Depot, where a lively scene presented itself. The heavy vehicles were laden with merchandise and manoeuvring about to get into position, and by ten o'clock all had left for their journey to Manchester, via Widnes and Warrington. Appended is a tabular statement of the loads carried by the competing vehicles:—

Vehicle.

A1.—1½ tons of leather, for J. H. Fleming and Co., Ltd., Warrington, to be delivered in Manchester.

A2.—1½ tons of Pratt's M.C. spirit in cases, for Anglo-American Oil Company, Ltd.

B1. } 67 bags of flour, collected from West Hornby Dock, from D2. } Kruger, Darsie and Co., for W. T. Sutcliffe and Co., Manchester.

D4. } Each wagon carried 4½ tons.

C1.—Olive oil soap in cases for J. Smith and Co., Ltd., Manchester. Weight, 5 tons 11 cwt., 1 qr. 17 lbs.

D3.—45 bags of cement from Ingram and Clarke, for W. G. Armstrong, Whitworth and Co., Openshaw, Manchester, 4½ tons.

D5.—60 bags of sugar for Clifton's Brewery, Ltd., Stockport, from Graham, Son and Hay.

D1.—3½ tons of Red Maid soap from the United Alkali Company, for Manchester.

NOTE.—With fuel supply for two days' run, observers and passengers all these loads were increased by half a ton, and in some cases by a ton.

The light cars, to the number of about twenty, filled with pressmen, officials, etc., followed, while the Judges in the handsome 16 h.p. Daimler followed last. Two motor-lorries—the one

greatly of some of our receptions on the 1,000-mile Trial. The next stopping place was Warrington, where the local Mayor warmly welcomed us, and in that town a halt was made for luncheon. A long stay was made, our start being delayed by a puncture in the near side rear wheel, the offender being a long French nail. A few miles from Manchester another halt was made by the light cars to see the heavy vehicles pass, and all were delighted to see the smoothness with which all were travelling. At the Town Hall, Manchester, the Lord Mayor and Sir W. Bailey received the party, and the former conducted us to his parlour, where refreshments were served. The cars were afterwards taken to Belle Vue, and in the evening Sir W. Bailey presided at the dinner held at the Queen's Hotel. The subjoined table gives the performance of the vehicles on the run from Liverpool to Manchester.

No. of Car.	Net running time.		Fuel used		Water Used.
	hours	mins.	coke lbs.	petrol galls.	
A1	...	5	...	3½	...
A2	...	5	...	4½	...
B1	...	6	...	448	250
C1	...	6	...	296	505
D1	...	6	...	824	357½
D2	...	7	...	629½	422½
D3	...	8	...	603	359
D4	...	6	...	728	258
D5	Stopped at Speke.				

The vehicles, when they arrived in Albert Square, Manchester, on Wednesday morning, from their housing quarters in Belle Vue Gardens, assembled under climatic auguries which were far from encouraging. Happily, however, the clouds soon dispelled, introducing conditions exceedingly favourable for motoring. Nature's own watering-cart had so effectually laid the dust, which is the great foe of summer roadway touring in any form, that, at all events, the first half of the journey was performed with great comfort for the judges, officials, and others who accompanied the competing vehicles. The return route to Liverpool, which varied from that of the previous day, lay through Moses Gate, Bolton, Atherton, Leigh, Pennington, Newton, Haydock, St. Helens, and Prescott. The route is one which necessitates the negotiating of considerable gradients, up or down, as the case may be, but in no case did they present the same difficulties as the one-in-nine steepness of Everton Brow, on which hill-climbing was specially tested on Monday. In returning, as in going, each competing vehicle bore a tonnage of merchandise, according to its class, for delivery at the end of the journey, as follows :—

- A1 1½ tons Pulleys from the Unbreakable Pulley Company, of West Gorton.
- A2 1½ tons from William Graham and Co., of Manchester.
- B1 4 tons from Tootal, Broadhurst, Lee, and Co., Limited, of Manchester.
- C1 6 tons of bale goods from Tootal, Broadhurst, Lee, and Co., Limited.
- D1 3½ tons Red Maid Soap for the United Alkali Company.
- D2 4½ tons Bale goods from William Graham and Co.
- D3 4½ tons Machinery from Crossleys, Openshaw, for J. G. Neville and Co., Liverpool.
- D4 4 to 4½ tons Machinery from Crossleys for J. G. Neville and Co.

Between Manchester and Prescott the district may be said to be occupied almost continuously by a teeming population, the evidences of whose labours in mining, cotton-spinning, and many other extensive industries deprive the face of the country of much of its natural scenic attractiveness. To the inhabitants along the line of route the passage of the automobile procession was a most interesting sight. What with householders, operatives, school children, and others there were miles at a stretch where both sides of the roadway were occupied by cheering crowds. The first stoppage took place at Bolton, in front of its classic-looking Town Hall, where the party was received by the Mayor, and luncheon was partaken of in the Swan Hotel. Afterwards the journey was resumed, and St. Helens safely reached, Major Pilkington, the popular Mayor of the town, entertaining the visitors, refreshments being served. After a short stoppage a restart was made, and Liverpool reached without any incident, except for one or two soft places in the roads, causing the wheels of some of the heavier vehicles to sink.

On Thursday the vehicles journeyed to Blackburn, via Wigan and Chorley, and on Friday the return journey was made from Blackburn to Liverpool, via Preston, Rufford, and Ormskirk. A report of Thursday's and Friday's proceedings will be published in our next issue.

"C. N. W." in his notes in the *Traveller* remarks that "at Etampes, a little while ago, I met an enthusiastic young French amateur *chauffeur* who was driving a De Dion voiturette. He assured me that, running short of petrol in a village where the stock was all exhausted, he had replenished his tank with absinthe from the nearest *café*, and that the motor had worked excellently!"

THE Committee of the Automobile Club have announced that, with the assistance of the Scottish Automobile Club, official trials of motor-vehicles will be held in connection with the Glasgow Exhibition, from Monday, 2nd September, to Friday, the 6th September next. The trials will consist of a daily run of 90 to 110 miles. Each motor-vehicle will carry an observer, and marks will be deducted from a possible maximum for every stop. The competition will also include some hill-climbing trials. A representative of the Automobile Club of Great Britain and Ireland will proceed to Glasgow to make further arrangements in the middle of the present month.

FLOTSAM AND JETSAM.

BY "FLANEUR."

AMONG ourselves we automobilists have discussed the racing between Paris and Bordeaux from the standpoint of mechanical efficiency. But there are others. Our dear friends the reactionary County Councillors, what have they to say? They have committed themselves to the opinion that the existing legal limit of twelve miles an hour is too high, and that the law should be amended accordingly, with a view to imposing a maximum of ten. Now (as these gentlemen are able to discriminate between degrees of danger with such mathematical certitude, and possess vast stores of knowledge on the subject of automobilism such as no *chauffeur* himself can affect to claim, it is natural that one should seek for guidance at their hands with regard to the performance of M. Fournier on his redoubtable Mors. Unfortunately—or perhaps fortunately—I have not the honour of the acquaintance of a County Councillor of the reactionary type, though I know many of more enlightened views. In the circumstances, therefore, I must perforce resort to an "imaginary conversation" in order to give the County Councillor a show, though I must confess to a lurking suspicion at the outset that the language even of a Landor will prove insufficient ere the close to do justice to the C.C.'s feelings.

Approaching the subject, and the County Councillor, with becoming reverence, I venture to inquire of him if he will favour me with his views on the question of the speed of motor-cars in general and the Paris-Bordeaux race in particular.

"Paris-Bordeaux race, did you say? What was that?"

"Oh (after with difficulty suppressing my surprise), it was a motor-car race run last week in France, and reported in all the papers."

"My dear sir, I rarely read the newspapers, and if I saw anything about motor-cars I should turn immediately to something else. It is necessary that I should keep an open mind on the subject, and so avoid prejudicing the issues. For the same reason I have declined the invitations of the Automobile Club to attend a demonstration either in London or my own county. It would never do for me to allow myself to be converted by automobilists' arguments; I *must* keep an open mind."

[NOTE by the Interviewer.—The Essex County Councillors excused themselves from attending a local demonstration, arranged by the Automobile Club, on the ground that they "wished to preserve an open mind!"]

"I should be glad of your opinion, nevertheless, as to this race, as it was a most interesting affair. The winning car attained a speed of——"

"Ah, now, there is that speed question. I do feel strongly about that. These motor-cars actually go faster than horses. Is it not terrible? I cannot understand why so much liberty was ever allowed to automobilists by Parliament. But we mean to put a stop to it soon. The maximum must be reduced to ten miles an hour."

"Then you consider twelve miles an hour dangerous."

"Certainly."

"And that it is possible to differentiate between the degrees of risk represented by ten and twelve miles respectively?"

"Quite so. Two miles an hour is a considerable difference in speed."

"Then if twelve is dangerous, fourteen is——"

"Exceedingly dangerous, of course."

"And sixteen——"

"Full of terrible risks to everybody concerned. I cannot imagine how a man can drive a car at such a frightful pace without disaster. I certainly never drove my horse so fast."

"Have you ever been on a motor-car?"

"Never, and never shall! Did I not say that I wished to preserve an open mind?"

"But surely, sir, circumstances alter cases. Out on the open road, for example, what possible objection can there be to a speed of even twenty miles an hour?"

"Twenty miles! You appal me. Such a speed is almost inconceivable. Why, even when my horse is on the gallop he doesn't do more than sixteen."

"Sixteen! But I understood you to say that ten was the utmost that was safe!"

"For a motor-car. A horse, of course, is different."

"But the motor-car has two or more brakes, as required by law, and can be pulled up in a few feet."

"Oh, I don't trouble myself about such details. All I know is that horses have been in use for thousands of years, and you surely wouldn't say that a motor-car is better than the friend of man?"

"But to revert to this race in France. The first car attained a speed of —"

"Ah, yes, that race. I suppose, now, they had a trial of speed over a measured mile, or something of that sort, and ran awful risks to pedestrians and themselves by driving at about eighteen miles an hour. Shocking!"

"The race was from Paris to Bordeaux, a distance of three hundred and forty-seven miles."

"Three hundred and forty-seven miles?" Incredible! I suppose they took several days to do the distance, and that only two or three cars competed?"

"Over sixty cars started."

"It is too terrible. I wonder the French Government allowed it. Numbers of pedestrians were killed, I suppose?"

"Not a solitary one."

"And the competitors?"

"No driver of a car was hurt, and the only accident was to a motor-cyclist, who foolishly tried to light a cigarette when going at top speed."

"But the other competitors, I take it, were very careful, and went very quietly?"

"Oh, certainly. Even the fastest man did not have a single mishap from start to finish."

"Just as I thought. And his speed would be about —"

"He averaged fifty-three miles an hour."

"What?"

"Fifty-three miles an hour throughout."

"! ! ! ! !"

"Probably, however, he touched seventy-five at times."

"! ! ! ! !"

"The winner beat the Sud Express, the fastest train in France, by nearly an hour."

At this juncture the conversation abruptly closed. The County Councillor's gasps and gurgles culminated in the display of all the symptoms of a mind unhinged by a terrific shock, and he is borne to an asylum, babbling of "Fifty-three miles an hour! And nobody hurt!"

IN all seriousness, however, I do hope that the lessons of this marvellous race will be laid to heart by those hostile to the automobile movement. So far from desiring that any similar event should take place in England, it may be said at once that no one would advocate it for a moment. But the mere fact that a motor-car has been driven at this tremendous pace over an enormous distance without any catastrophe whatever, and that many other cars also went through at high speeds with equally harmless results, should surely make the "ten miles an hour" fanatic pause in his senseless campaign. The mental attitude of the Parliamentary Committee which heckled George Stephenson many decades ago was far more reasonable than that of the reactionary County Councillor of to-day, with all the advantages of accumulated experience in the use of mechanically-propelled vehicles and the growth of mechanical knowledge generally. Yet the "ten an hour" man not only denies himself the benefits of an improved means of locomotion, but would gladly drag everyone else to the level of his own abysmal ignorance.

THERE must be something very rotten in our administrative system when it is possible for magistrates to display such childish intelligence as did the Chertsey Bench last week, when they convicted Mr. Lucien Le Gros for driving a motor-tricycle and trailer

at more than six miles an hour. No suggestion of furious driving was made: the evidence of the policeman himself was to the effect that the tricycle was proceeding at a speed of "from ten to twelve miles an hour," and, allowing for the usual inefficiency of police estimates, we may set down the actual pace at eight. The magistrates simply took advantage of the ambiguous wording of the Light Locomotives Act, and imposed a fine of not less than forty shillings, for an offence that was no offence, and was clearly never contemplated by the framers of the Act, who had in view, as the context clearly shows, the drawing of goods in a secondary vehicle of appreciable size. There is not the shade of a shadow of a reason why a passenger should not travel in a basket trailer, or on a Whippet single wheel, behind a motor-tricycle at the same speed as though he sat in a chair seat in front of the machine instead. Such, indeed, was the view adopted by the Weston Bench in January of this year; but Surrey is simply overridden with the type of "great unpaid" which is opposed to improvement in every form.

"WHO was she?" This is the question a great many persons were asking in Birdcage Walk on Tuesday morning. The object of their interested attention was a young lady, strikingly handsome, and dressed after the *dernier cri* from Paris, who was calmly driving a 12 h.p. Panhard, enamelled in red, picked out with gold. The car was fitted with a hood, and most elegantly finished, while behind sat an attendant in the smartest of liveries yet seen, where *mecaniciens* are concerned. A dainty parasol and a pet dog reposed on the seat beside the fair driver, who piloted her car with the most consummate ease and an entire absence of nervous apprehension. So attractive was the turn-out that equestrians even wheeled their horses round and galloped after the disappearing car, in order to gaze anew on the lovely figure at the helm.

BRIGHTON may eventually be cured of its "motorphobia": at all events, it is paying through the nose by reason of the abstention of automobilists from visiting that particular resort. Last year's commemorative run on November 10th must have transferred hundreds of pounds from Brighton hotel-keepers to the pockets of their Southsea rivals. More recently we have seen retribution take another guise. The police had to send a cheque to Mr. Firth in payment of the costs incurred in the vexatious prosecution of Mr. Edge, and now the Brighton Board of Guardians have been cast in £250 damages, as the result of an accident to Mr. Williams, whose car was overturned by the careless driver of a workhouse van. Possibly, in due course, Brighton will learn to treat the automobilist with respect.

A LETTER which I have just seen from M. Charron states that he has tested the new 10 h.p. light Panhard, and found it to be faster than the 16 h.p. heavy car of the same make. He is supplying the former at 13,000 francs, or £520. This sounds an advantageous way of obtaining a powerful car at a medium price, for, needless to say, cars at 16 h.p. do not sell at anything like that figure. Talking of light Panhards, by the way, it would be interesting to know the horse-power of the one driven by M. Giraud in the Paris-Bordeaux race, in the extraordinary time of 8hr. 9min. 48½sec., or sixty-four kilometres an hour. It is whispered that the car was equipped with a motor of 20 h.p. After the finish, the car was objected to as over-weight, but the official scaling showed that it just came within the 650 kilogrammes limit.

IT does not do to treat a starting-handle with disrespect. Mr. W. Hatfield-Green injured his wrist severely the other day when "winding up" his new 6 h.p. Panhard, but contrived to drive to Kempton Park and back with his arm in a sling, though, when a change of speed was necessary, the manipulation of the side lever involved no small discomfort. Another automobilist of my acquaintance tells me that he once sprained his wrist so severely by a careless start that he fainted twice in half an hour with the excruciating pain; and he is not by any means the sort of man whose looks would lead one to regard him as a fainting subject.

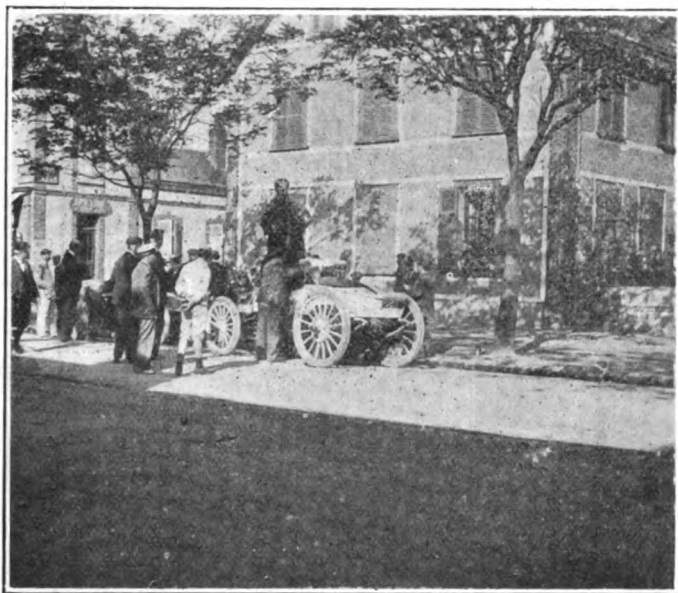
The Paris-Bordeaux and Gordon-Bennett Cup Race.

By "AUTOMAN."



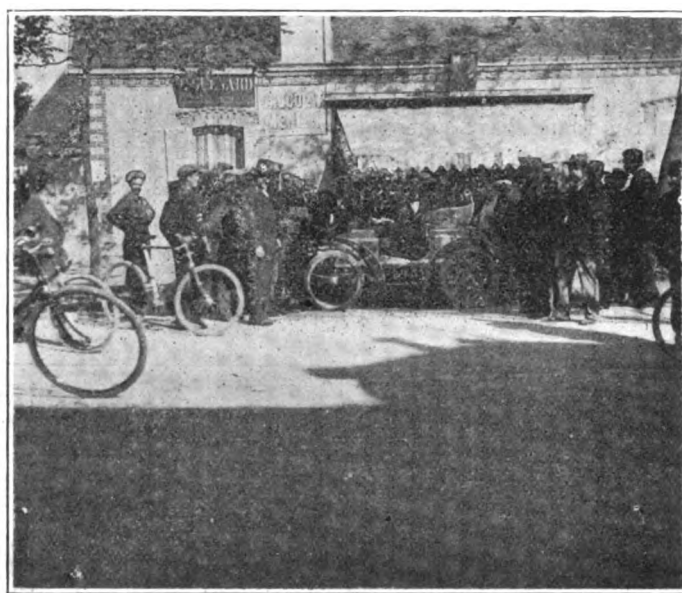
THE Paris-Bordeaux race last week, which I was just able to report in time for the *Journal* of June 1st, marks a distinct epoch in automobilism, and leaves its lessons both for the manufacturers, purchasers, and also for the public. Before

The results of the race have been a complete and irrefutable answer to all these forebodings of ill, and have established the Paris-Bordeaux as a classic event which promises very quickly to rival in importance the greatest horse races and become a



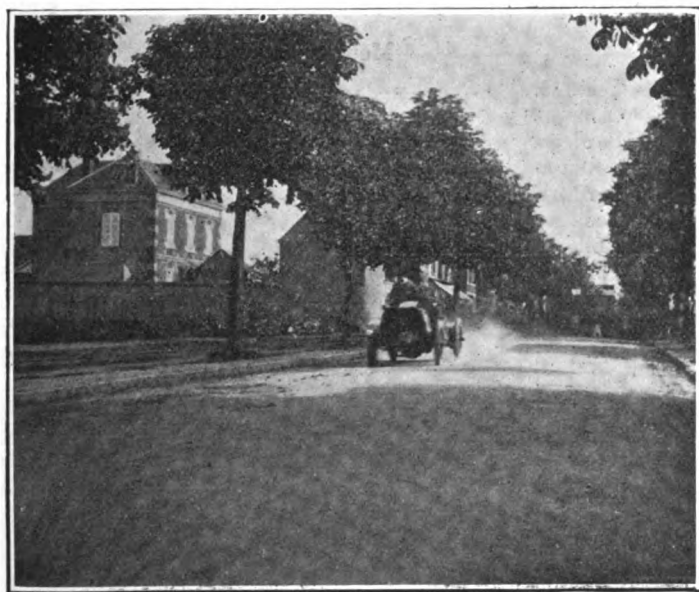
LEON LEFEBVRE ON A BOLIDE CAR AT CHARTRES.

the race, I heard it said on all sides that this would be the last great race, and many journals predicted the terrible accidents quite unavoidable in the presence of the 20, 50, and 70 h.p. leviathans which would be disputing for the honours of the road. Some of



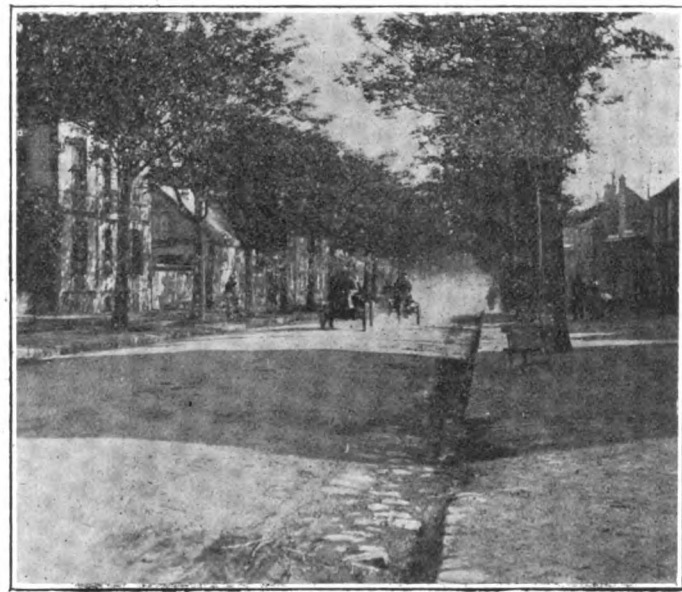
THE TURGAN-FOY CAR AT CHARTRES—REPAIRING A PUNCTURE.

general holiday along the line of route. Of third party accidents there was only the shock of fright of an inexperienced cyclist, who wobbled out of the way of a racing car and fell over in the gutter. Of accidents to competitors, one or two insisted in



GRUS ON A RENAULT CAR NEARING THE OUTER CONTROL AT CHARTRES.

the daily papers were indignant, and took up the cudgels for the poor peasants and villagers along the route who would desert their homes in terror. The least of all the terrors was the dust, which would render the roads impassable.



LEYS ON A PANHARD CAR LEAVING CHARTRES.

charging level crossings when the gates were closed, and got off with a few bruises and a broken wheel, a stone smashed the goggles of a third and the glass entered his eye, which after it had been extracted did not deter the intrepid *chauffeur* from

continuing. The only animals reported to have been killed were two unfortunate birds who wrongly estimated Fournier's speed and got caught in his radiator, and carried thus triumphantly to Bordeaux. Along the line of route it is true that everybody turned out, but it was in order to see the race and cheer the popular drivers as they flew by. As for the dust, there was no lack of it, but a few moments sufficed for it to subside. Road racing is certainly no more dangerous than any other form of sport, and, carried out under proper rules and supervision, will, in my opinion, be permanently established even in our conservative island, and will be a great boon to the sporting world and an encouragement and assistance to the manufacturers of automobiles and of all appliances connected with them.

Of the lessons of the races the most notable is the necessity of lightness. High power is of no use without great regard is paid to lessening of weight. This is where Napier went wrong, for one would have supposed that with 70 h.p. he would have been able to beat anything for a stretch at any rate, as a spurt, but the 33 cwt. odd, which I am informed the car weighs, told against Edge, even on the level, and though he was running well at various points of the route, where he was seen, I never heard of him passing any of the fast cars. Looking over the reports from the various controls one sees him falling gradually behind. Fourth at the start, fifth at Chartres, seventh at Tours, eleventh

Cars weighing over 650 kilos.—*cont.*

Girardot	...	Panhard	...	8 51 59 1-5
H. Farman	...	Panhard	...	8 53
De Crawhez	...	Panhard	...	8 55 34 2-5
Berteaux	...	Panhard	...	11 10 39
Léon Lefebvre	...	Bolide	...	11 53 50

Cars weighing between 400 and 650 kilos.

Giraud	...	Panhard	...	8 09 48 4-5
Baras	...	Darracq	...	8 42 52 2-5
Edmond	...	Darracq	...	10 25 4
Béconnais	...	Béconnais	...	10 41 25 3-5
Théry	...	Decauville	...	11 11 42
Sanz	...	Boyer	...	11 12 26
Rudeaux	...	Darracq	...	11 49 58
Uhlman	...	Decauville	...	12 18 20
Filtz	...	Turgan et Foy	...	13 57 59
Chabrières	...	Decauville	...	14 5 16

Voiturettes.

L. Renault	...	Renault	...	9 32 27
M. Renault	...	Renault	...	9 40 14 1-5
Oury	...	Renault	...	9 46 50 2-5
Grüs	...	Renault	...	9 52 41
Lot	...	Libéria	...	16 4



GIRARDOT ON HIS PANHARD CAR.

EDGE ON THE NAPIER CAR.
ON THE ROAD NEAR CHARTRES.

GIRAUD AND ANDRE AXT.

at Couhé Vêrac, where he disappears from the records. Another proof of what I advance is the performance of Giraud on a light 12 h.p. Panhard and Levassor, arriving fifth and beating half a dozen cars of nearly twice the horse power. Girardot's splendid run will be hard to beat, and ought to convince the public that pneumatic tires made in a proper manner can be relied on. Amongst the *voitures légères* two racing Darracqs did well, coming in second and third, but perhaps the most remarkable circumstance of all the race was the fact that in the class for voiturettes the four Renault cars came in, in a bunch, all inside of 21 min., doing the 327 miles at an average speed of about thirty-five miles per hour, starting together and arriving together. The fact that two Werner motor-bicycles completed the distance in about 12½ hrs. has also been much commented upon. The following are the results of the two races:—

GORDON-BENNETT CUP RACE.

				H. M. S.
Girardot	...	Panhard	...	8 51 50 1-5

THE PARIS-BORDEAUX RACE.

Cars weighing over 650 kilos.

Fournier	...	Mors	...	6 11 44 3-5
M. Farman	...	Panhard	...	6 41 1 4-5
Voigt	...	Panhard	...	7 16 11 2-5
Pinson	...	Panhard	...	7 46 51 4-5
André Axt (Hachette)	...	Panhard	...	7 47 17
Gilles Hourgières	...	Mors	...	8 37 39 1-5

Motor-cycles.

Teste	...	8 h.p. De Dion	8 1 „ 3-5
Osmont	...	„	8 3
Bardeau	...	„	8 54 6 3-5
Collignon	...	„	9 11 33 1-5
Bardin	...	„	10 30 40 2-5
Gasté	...	Libérateur	10 32 3 1-5
Holley	...	De Dion	10 30
Cormier	...	De Dion	11 34 52
G. Rivierre	...	Werner motor-bicycle	12 30 55
Bucquet	...	Werner „	12 47 6 2-5

THE great demonstration of motor-vehicles in London before delegates of County Councils commenced in London on Thursday in favourable weather. Close upon eighty cars have been placed at the disposal of the Automobile Club to convey the visitors to Richmond. We shall publish a report of the demonstration in our next issue.

WE understand that owing to every event being a handicap it will be quite impossible to accept any entries for the Tilburstow Hill climb at Godstone, on the 15th inst., after to-day (Saturday). Entry forms can be obtained from G. H. Smith, the reporting hon. Sec. of the English Motor Club, 40, Holborn Viaduct, E.C. Amongst the entries received up to time of going to press is a 70 h.p. Napier.

THE Motor-Car Exhibition at the Agricultural Hall.



(Concluded from page 253.)

THIS week we bring to a conclusion our report of the exhibits at the recent Motor-Car Exhibition. We have been at great pains to make the report as complete as possible, and, where obtainable, illustrations have been given, so that the current issue, together with its four immediate predecessors, forms a most valuable record of the many interesting novelties that have lately seen the light in the English automobile world.

Mr. T. Crowden, of the Motor Works, Leamington, exhibited several of his special appliances for use in connection with automobiles and machinery of a similar character. Amongst these we noticed a balanced speed reducer, particularly designed for use with an electric motor, in which three rollers are used for transmitting the power to an outer rim, which forms a pulley for a belt drive. The object of this device is to avoid frictional losses by entirely dispensing with gear wheels. Mr. Crowden also showed an apparatus for setting the valves and valve gear upon steam-engines. This is a kind of indicator which is designed to save a considerable amount of time in work of this nature. A tubular frame for a light steam car was also shown, and, although incomplete for the Exhibition, was interesting. This vehicle, when finished, is to burn kerosene instead of petrol, and it is fitted with arrangements for condensing the steam. Amongst other features of this exhibit were a steering joint, a special wheel of the artillery type, and one of Mr. Crowden's cooling radiators, all of which have been described in the *Journal*. Those who have suffered from pump troubles would do well to enquire into Mr. Crowden's new rotary pump. This is chain driven and is fitted with adjuster.

Mr. J. Ravel, 19, Avenue de l'Opera, Paris, exhibited a sectional drawing of his "Intensive" petroleum-spirit motor. As this comprises several novel features, we hope to refer to it at length in a later issue. In the meantime we may mention that it comprises two cylinders, the pistons of which are connected to the same crank. By the special arrangement it is claimed that for a similar volume and weight the Ravel engine will develop half as much power again as ordinary petrol engines.

If there was one stand in the Minor Hall which attracted more attention than any other it was that of Messrs. O. Ström and Fils, of 16, Rue de la Chaussée d'Antin, Paris. Here those motorists who have not as yet crossed the Channel had an opportunity of examining the curious garments which French *chauffeurs* make use of. Fur coats and cloaks for both ladies and gentlemen were in evidence, as well as leather suits in brown and black. Considerable interest was shown in "La Couverture Pantalon," a combination article which can either be used as a rug or as a motoring suit in bad weather. Messrs. Ström have made a special feature of clothing for motorists and have a big connection in France.

Quite a new car to England was the Crouan, exhibited by the Société des Automobiles Crouan, of 57, Avenue de la Grande Armée, Paris. Two cars were shown, a 16-h.p. vehicle seating six persons, and a light car fitted with a 6-h.p. motor. The larger car was fitted with a special pneumatic change-speed gear, in which the clutches holding either of four tooth wheels to their shafts are operated by admitting compressed gases to air-tight and expansible chambers inside the moving clutches. A model showing the action of this mechanism was also on view. The Crouan motor is also on novel lines, comprising four cylinders in the large car, and two cylinders in the small vehicle.

The cylinders are set opposite to one another with a central crank shaft. In an early issue we intend to refer at length to the Crouan cars; in the meantime it may be stated that the motor is fitted with an automatic regulating device. Electric ignition is adopted, a special plug being used, which it is claimed never gives trouble by reason of carbon deposits or fracture of the porcelain. The motor is controlled by one handle only.

The "Umpire" storage batteries for carriage lighting were shown by Messrs. Sutherland and Marcuson, 61, Chandos Street, W.C. Owing to the compactness of this battery it can be placed inside the driver's box or under the seat, thus rendering it well adapted for lighting vehicles. The accumulator is of a solid character, and there being no liquid space the "washing" of the electrolyte is prevented. Hence the risk of removal of the active material from the plates is obviated. A 4-cell battery with a capacity of 30 amperes is the size recommended, this being sufficient for lighting three lamps for a reasonable time. In connection with this the "Umpire" charging board is employed. This instrument enables any form of battery to be charged from direct-current electric mains at any desired rate of charge. It also acts as a resistance, and in addition to indicating the direction in which the current is flowing it gives an approximate indication of the amount of current passing. A new form of variable resistance has been introduced by the firm which can be placed in circuit with any lamps and secures perfect regulation. The "Umpire" portable testing battery was also shown. This has been previously referred to in these columns, and it need only be said that it can be readily charged from any continuous current electric light circuit, and that it will retain its charge for a reasonable time.

Accidents will happen, even on board the best regulated motor-cars, a contingency which that most enterprising of insurance companies, the Law Accident Insurance Society, whose head office is to be found at 215, Strand, W.C., has been quick to provide against. At the Society's stand in the Gallery a brisk business went on daily on the principle of small premiums and big risks. Five shillings a year provides for £500 in the unfortunate event of a fatal accident whilst riding in a motor-car, and ten shillings covers £1,000. Another policy with an annual premium of £5 provides against liability for injury or damage done to persons or property not in the service of the insured to the extent of £100, also £25 compensation for accidental damage to the motor-car insured. Sixteen shillings per cent. on the value of a car insures it to its full value against fire or explosion.

Madame L. Longuemare, 12, Rue du Buisson-Saint-Louis, Paris, had a display of the "Longuemare" carburettors, which are too well known in this country to need a lengthy description at this time. The carburettors are made in various sizes, suitable for the motors of tricycles or the largest cars. A new carburettor is one arranged to mix the necessary carburetted air in vehicles in which alcohol is employed in place of petrol. Examples were also to be seen of petrol and alcohol burners for use in connection with tube-ignited motors.

Dry batteries for ignition on motor-cars, motor-cycles, etc., were shown by the Meyra Electric Company, Limited, 78, York Road, King's Cross, N. The Meyra batteries are of English manufacture, and were supplied to the King's Daimler car. It is claimed that they are reliable in all climates, and among the special merits are long life, high amperage, low in-

THE GENERAL AUTOMOBILE AGENCY, D. Farman, Man., Garage open day and night, all cars in stock, 100-104, Long Acre, W.C.

ternal resistance, absence of local action, and generally high efficiency. Set on a motor-cycle the Meyra battery has a life of about 400 working hours, giving a long spark. These sets of batteries will give a constant spark for ignition purposes for several months, and, at the same time, supply enough current to light a 5-volt portable reflector lamp, used to examine the machinery of the motor-car when necessary at night.



FIG. 1.

The novelty at the stand of Messrs. Trier Brothers, 1, Great George Street, S.W., was a patent automatic check-valve lubricator, of which we give an illustration (Fig. 1). In this the reservoir contains a piston actuated by means of a spiral spring. The threaded rod is screwed through the piston and projects below so that the exit is closed in the shank like a valve; thus a source of waste in some lubricators is entirely prevented. In filling the lubricator the spring ring catch, by which the reservoir is locked, is released, and by turning the piston rod the piston is screwed back. This should be carried on as far as possible. When the reservoir is replaced the exit is closed by the piston rod end. In order to cause the lubricator to work effectually, the piston rod has to be screwed back according to the amount of grease required.

Then the piston and piston rod move forward together, the feed continuing until the rod again closes the exit. This lubricator has been specially designed for use on motor-cars, and will be found not to be rendered inoperative by vibration and dust—a feature of great importance to motorists. In addition to this new speciality, the firm showed the well-known "Stauffer's lubricant" and the "Centi-grade" Stauffer lubricant for motor-car bearings, gear and chains. There were also on view spring pressure lubricators, the "split-grip" collars for shafting, and grindstone dressers and emery wheel truers—a very complete and useful collection.

Very interesting was the stand occupied by Mr. H. W. Van Raden, 7, Ellys Road, Coventry. A central feature was his patent Woven-glass accumulator for automobile ignition. In this the active material is firmly held by the woven fabric, and cannot, no matter what the vibration, become detached from the electrode to cause short circuit or self discharge. Each electrode is wrapped in a sheet of spun glass, through which the electrolyte has free circulation. All plates are packed firmly together, making the whole a solid yet flexible mass, free to expand during the charging, and in which the plates of opposite mark cannot get into touch with each other. These accumulators are made in various sizes for motor cycles, voituresses, and cars. They are said to give three months' service on one charge, and from the nature of their construction can be expected to withstand vibration. Electric motor controllers, accumulator-charging dynamos and switch boards, volt meters, ampere meters, pocket watch volt meters, sparking plugs, induction coils, and all the electrical appliances necessary for motor ignition were shown by Mr. Van Raden.

An automatic machine for building cycle, motor-car, and carriage wheels, exhibited by the Wheel Machine Company, of 23, College Hill, Cannon Street, London, E.C., should revolutionise the hand process of obtaining that exact amount of tension which must exist between hub and rim in a true running wheel. The wheel, roughly put together, is finished off on the machine. Each spoke is pushed into a slotted pinion, the lever is thrown into gear, and when the nipple has been screwed the required distance, the machine is automatically thrown out of gear, and the slotted pinion carried round to receive the next spoke.

There was nothing exciting about the exhibit of Messrs. J. F. Pease and Company, Limited, of the Skerne Works, Darlington, whose display was characterised by utility rather than by brilliance. It comprised steel barrels and receptacles for the storage and carriage of petrol with safety, ease, and economy—a threefold object which is fully attained. For use with the barrels an atmospheric pump is provided, and the adoption of this secures the motorist against the troubles of stale oil. A capital syphon for use with lubricating oil was also shown. This fits, as does the pump, into a collar at the top of the receptacle, and the ordinary action ensures all the oil being drawn off in a steady and continuous flow. The barrels are jointed in the middle, thus obviating any likelihood of leakage at the top or bottom, while the handles provided in the top are so fixed in an indented centre that they can be packed one on the other in a minimum of space. These features attracted practical motorists to the gallery, where their usefulness was demonstrated daily.

Bowden's Patents Syndicate, Ltd., of 151, Farringdon Road, E.C., had an exhibit of the uses to which the Bowden wire mechanism can be put in connection with motor-cycles and cars. For the sake of those unacquainted with it we may mention that the mechanism consists of a flexible tube composed of spirally wound wire, the coils of the tube being close together and touching one another, so that it cannot be compressed. Inside this is carried a fine stranded steel wire. The spiral wire being closely coiled is incompressible longitudinally, and the stranded wire which is carried inside the spiral is inextensible. If the ends of the spiral wire are held or fixed by means of a stop, and the stranded wire is then pulled, it will be found that—although the spiral wire is bent round angles or even tied in a knot—the inner stranded wire can be easily pulled through it. In short, the patent wire mechanism forms a means of transmitting power round angles where hitherto it has been necessary to employ joints or angle levers of various kinds. In addition to a table on which were shown variable applications, such as the lifting of a 56lb. weight, and the operation of a rudder from the bow of a boat, the Bowden Company exhibited a motor-quad in which the ignition, carburettor, exhaust valve lifter, band brake, and Mercier two-speed gear were all controlled and operated by Bowden wire mechanism. One simple adaptation of the stranded wire in the coiled and flexible conduit gives a double action most useful in the application of band brakes, as it holds the band in position on the drum, both for forward and backward travelling. A novelty is the application of the mechanism to the regulation of the carburettor. The levers are drawn in one direction by the "Bowden" wire, and in the others by springs. Sufficient resistance is introduced into the apparatus to allow it to remain where set. In Fig. 2 we show the device fitted to a cross lever so arranged as to lift the exhaust valve of the motor at the will of the rider. The upright arm on the right has a long slot *a* which fits over one of the bolts of the De Dion engine case and is fastened securely by the nut. The cross bar *c* is pivotted at the end of this upright arm and extends across the side of the motor, coming in contact with the exhaust-valve stem which passes through it. Its outer end is kept normally down by means of a tension spring attached to a clip as shown, fastened on one of the crank case bolts. The end of the lever *c* is pulled up by the flexible Bowden wire *d*, the end of the wire casing being firmly attached to the lug *h*, which is attached by means of a flat plate to the head of one of the cylinder holding-down bolts *g*. The whole of the mechanism is extremely simple and forms a convenient method of operating

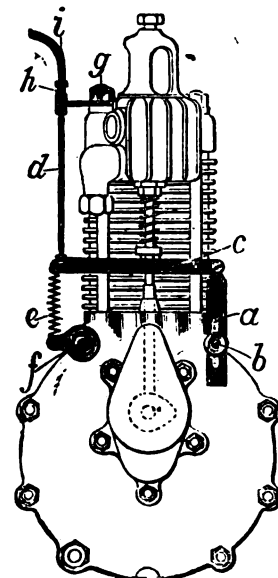


FIG. 2.

an exhaust valve lifter for starting motor-tricycles and quadricycles.

The Radax tire was shown by the Radax Pneumatic Tire Company, Limited, 51, Fountain Street, Manchester, and 32, Bread Street, London, E.C. This tire possesses a patent canvas, so woven that the sides of the outer cover fit closely in the rim, and form a sound principle of attachment. Being woven in a circle it is possible to secure the threads being small at the edges or smallest circumference of the tire, and to gradually increase in size as the circumference becomes larger. Thus the tire is

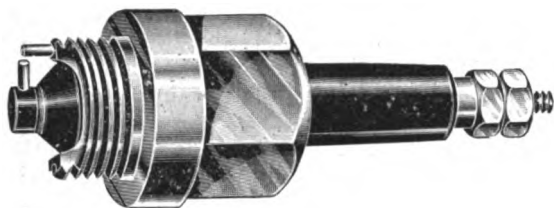
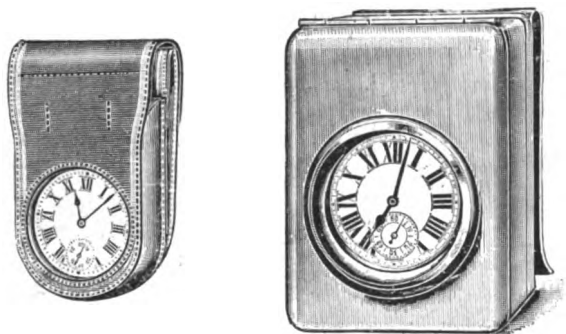


FIG. 3.

made to perfectly fit the rim and so obviate any possibility of rolling friction. Whilst in use it cannot be forced from the rim—even if it is punctured or but slightly inflated. Despite its tenacity when in actual service, there is no difficulty in taking the tire off or putting it on, while the fact that it is made to fit all kinds of rims now in use should lead to its adoption by many who have not yet found a tire to their liking. The company's stand was occupied with a selection of motor tires of various weights and sizes for vehicles up to 10 cwt., fitted on rims of different makes.

Mr. Henry Waterson, of Albert Road, Aston, Birmingham, is a man of parts, good parts too, if those applicable to motor-cars which he exhibited at Stand 25 in the hall may be taken as specimens. Radiators, accumulators, pumps, springs, switches, E.I.C. mica sparking plugs (Fig. 3), insulating wires, and a host of other things all stamped with that well-known brand of good faith which is "E.H." catered for the requirements of the motorist, no matter the type of car driven or the motive power employed. To the votaries of petrol a reservoir, made in any size, and fitted with a pump, was interesting, because it can be carried on the motor-car and replenish the exhausted tank without stop or other delay. Another important feature of this very complete exhibit was the "Progress" motor-car frame, in which the radiator of the "serpentine" order is hidden away beneath the body of the car. Besides providing the various component parts of the motor-vehicle, Mr. Waterson also caters



FIGS. 4 & 5.

for the comfort of the motorist in other respects. His "E.H." motor-valise, trunks, and visiting cases of solid leather, with steel frames, can hold a lot, yet are not too bulky to accompany the tourist on board the car. Another interesting exhibit was that of the Douglas carriage clocks (Fig. 4 and 5) the sole agency for which in this country has been secured by Mr. Waterson.

Wheels of every type and grade, of ash, acacia, hickory, oak, iron and steel, for the daintiest motor-car or heaviest traction engine, made by Messrs. Fr. Hering, of Gera, Germany, were to be seen amongst the many exhibits of Messrs. Philipp and Company, of Dashwood House, New Broad Street, London, E.C. Bearings to facilitate the running of these wheels, notably of

the ball type, are made of metal hardened by a special process. Under-carriages for motor-cars were also prominent. One in particular, with a four speed transmission gear and reverse motion controlled by one lever, attracted attention. Differential axles for motor-cars and voiturettes, steering gears, forged arms, hubs—in fact, everything calculated to combine ease, simplicity, and speed, with a minimum of weight and maximum of strength in construction, was to be seen at Messrs. Philipp's stand.

Among the several good exhibits in the Gallery was a fine collection of air cushions for motor-vehicles made by Messrs. Warburton, Allen and Company, Yeoman Buildings, Rutland Street, Leicester. These cushions (Fig. 6) are made of special pure rubber compound, which, being vulcanised, secures durability and strength, while being absolutely odourless. The main feature of the cushions is the manner in which the walls are "tied," that is, exactly as are those stuffed with hair, etc. The result is a delightfully buoyant seat, which is at the same time firm, and on any part of which one can sit without the remainder of the cushion expanding beyond its normal size. Thus a depression at one end does not secure a corresponding rise at the other—a feature which is prominent in many similar air cushions on the market. By the adoption of these cushions vibration is lessened, and they have the further advantage of being always dry and clean in appearance. They are covered in various materials, thus enabling the owner of a motor-car

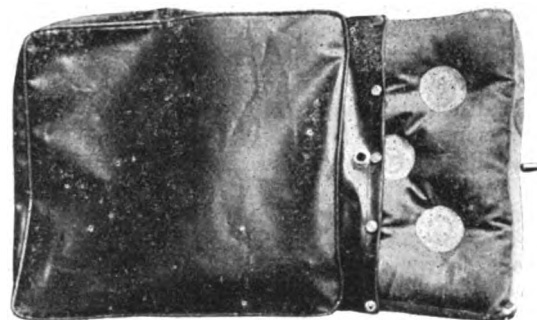


FIG. 6.

to obtain cushions of the same colour and appearance as the upholstery already in use on his vehicle. Cushions on the same principle, and by the same makers, are already in use on yachts and steamers, so that the idea is not an untried one.

A large stand in the Arcade was occupied by Messrs. Fleming, Birkby and Goodall, Limited, of Halifax, and 39, Lime Street, E.C. Beltings, of which the "Teon" is one amongst many specialities, comprised the larger part of their display. A section of an oil-less bearing which had run 15,000 miles, and was apparently fit to start upon another long run, testified to the firm's solution of a much-vexed engineering problem.

All business is capable of expansion, a want of method being as often as not the sole cause of stagnation, or, worse still, contraction. To remedy this evil the Remington Wabash Company, Limited, of 100C, Victoria Street, London, E.C., have evolved the "Expansion Business System." The system, which was on view at the Agricultural Hall, took the form of furniture for office or study, and so comfortable and elegant was it that one was puzzled to know which was for one and which for t'other. Roll-top desks, office chairs, tables, letter filing and card index cabinets are amongst the devices by which time is saved and chaos reduced to order. The "Rem-Sho" typewriter, which could be seen at work, or worked for that matter, is one of the best on the market; an interchangeable carriage holds a 9 or 14 in. paper, and, what is more important still, the operator has his work under his eyes the whole time.

Kopaline is the distinctive name given to a new puncture-proof band which deserves more than a passing glance from all who have experienced the delays and annoyance of punctures—and who has not? It was shown by Messrs. Walter Lowen and Company, 36, Aldersgate Street, E.C., and consists of a woven band which encloses scales made of a specially-prepared hide, and kept in position by sections woven into the band. The

extremities of the scales are trimmed, so that when stretched out they form a perfect belt. Lightness and durability are characteristics of the band, which does not impair the elasticity of the tire. The band can be very easily adjusted, and is said to be unaffected by changes in temperature. It certainly secures good protection against nails, glass, and other enemies to pneumatic tires.

The Crawford Gear Company, Ltd., Brooks' Motor Works, Holbrook's Lane, Coventry, had on view a compact two-speed gear,

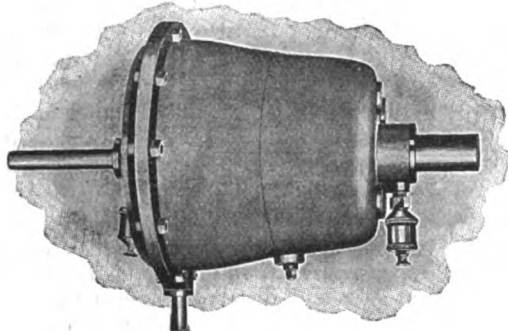


FIG. 7.

(Fig. 7) which is claimed to be particularly suitable for light or heavy oil cars, and for the transmission of any horse-power. The gear is noiseless, whilst it is claimed to have a dead central drive, to be perfectly balanced both in weight and driving strain, dust-proof, and self-oiling. The changes of speed are obtained by means of toggle action. Two speeds are available; when the friction cone is engaged the power is transmitted direct; when the cone is disengaged it is conveyed through a train of gear wheels always in mesh. The reverse motions are obtained by a gear in a separate case, but we learn that a new design is being introduced in which the forward and reverse motion mechanism will be combined in one casing.

Mr. Argent Archer, 195A, High Street, Kensington, W., had some excellent specimens of photography of motor-cars—a branch to which he is specially applying himself. Not only has he been very successful with outdoor work, but his photographs of interiors are distinctly good.

Costumes for ladies who indulge in motoring attracted many to the stand occupied by Mr. Charles R. Base, 309 and 310, High Holborn, W.C., whose enterprise in catering for automobilists is being recognised in an expanding business. Fur coats for ladies were a special feature of his display on this occasion. Neat liveries for the servants of automobilists were also on view. One of these was in black or brown leather, cut to fasten at the front with hooks, and faced with box-cloth of any colour desired. Breeches are generally worn with these, made of the same leather as the coat, and boots or gaiters. The cap can have a peak to match the facings of the jacket, and, nicely braided, makes a very effective livery. Double-breasted leather Chesterfields with Melton collars and wool lined were another exhibit worth consideration. A combined rug and foot sack was a novelty, the ordinary muff for the feet being lengthened so as to include the whole of the legs, and form a complete and perfect protection from the wind and weather.

Those who prefer leather clothing when motoring found much of interest at the stand occupied by Mr. Alfred Dunhill, 145 to 147, Euston Road, N.W. Prominent among other leading lines was a coat in very light dressed calf—much thinner than the leather hitherto employed, thus securing the minimum of weight with the maximum of flexibility and weather-resisting qualities. Storm cuffs, gauntlets, etc., were also shown, as well as leather hats, overalls, leggings, knee aprons, rugs, wraps, collapsible canvas buckets, etc. A good style of coat was seen on this stand, one with cuffs fitting tightly round the wrists, thus preventing those frequent draughts associated with much of the earlier clothing provided for motorists. A combined trousers and knee apron will be found very useful for drivers. Mr. Dunhill not only provides for the comfort of the motorists, but he is also concerned with the well-being of the

motors themselves, and in car covers he had some well-finished lines, neatly eyeletted and well designed. The "pure white" india rubber footboard mats, with slots cut in to allow for steering and brake rods, etc., were to be seen on this stand; the list of exhibits on which also included all kinds of hose, washing clogs, brushes, chamois cleaning tools, and a new lifting jack, which, although small in size, will deal with a ton weight.

Making a speciality of clothing for motorists, Messrs. Hoare and Sons, of High Holborn, naturally took occasion of the excellent opportunity which the Show presented of bringing their goods to the notice of likely customers. From a capital position in the Arcade they attracted attention to the "Marlborough" autocoat and autosuit, the "Windsor" motor-cape, the "Aquatecta" waterproof overcoat, and other excellent clothing for service against rough winds and uncertain weather. Not only are the materials employed well calculated to withstand the storm, but the designing of the garments has been well thought out, and in style and appearance Messrs. Hoare and Sons made a good show.

Very complete, so far as the motorist's personal equipment is concerned, was the stand in the Arcade whereon Messrs. A. W. Gamage, Limited, of Holborn, displayed some fashionable designs in motor clothing, including black and brown leather suits, overcoats, riding breeches, etc. Among the novelties was a tweed coat of the latest pattern with sanitary wool fittings and deer-skin lining. Attention was directed to Irish homespun coats of good design and well calculated to keep out wind and cold. Many pockets are provided in all the garments exhibited on the stand—a point of great importance to those who go on long tours. In addition to a very complete selection of clothing for automobilists, there was a capital display of motor caps, gloves, and leggings, while several specialities in gauntlets seemed to attract general attention. Gamage's are making a feature of motor caps, and these, with a collection of motor accessories, such as motor horns, lamps, etc., completed the display.

An unimpaired vision is an essential to the motorist, and a large crowd surrounded the sight-testing apparatus of the American Semetropiques Lens Company, of 55, Holywell Street, London, W.C. An easy process discovers the smallest, and often quite unexpected defect in one's eyesight, which the company is able to remedy with glasses "made to measure." A pair of blue glasses with a half mask of silk attached—exhibited by the same firm—would prove an indispensable blessing to many in a strong light or on a dusty road.

The presence of a mechanic fixing and demonstrating a quick method of altering sparking plugs and generally giving information on plugs to motorists gave added interest to the stand of Messrs. Frank F. Wellington, Limited, 36, St. George's Square, Regent's Park Road, N.W. The cars shown by Mr.

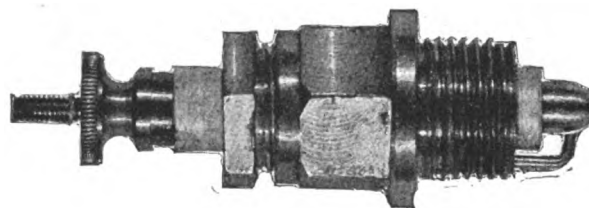


FIG. 9.

Wellington comprised an 8 h.p. Mors dog cart, a 6 h.p. M.M.C. wagonette, a Gladiator quad, and a Bayliss-Thomas motor-bicycle. Several motors were also on view, including a 3 h.p. Aster air-cooled motor and water-cooled engines of $3\frac{1}{4}$ h.p. and $6\frac{1}{2}$ h.p. respectively. Special attention was naturally directed to the Wellington sparking plug (Fig. 9), which has asbestos washers. No cement whatever is used in its construction, and it has the advantage of being easily repaired. Throughout the exhibit a battery and coil was set up on this stand in connection with a pressure gauge and a special apparatus, in which the spark was caused to jump between the platinum under air pressures ranging from 200 lbs. down to zero—an experiment which created undoubted interest.

Messrs. J. W. and T. Connolly, of 65, Wharfedale Road, King's Cross, N., had a good collection of wheels fitted with their "Ideal" rubber tires. These can be applied to all existing rims, and have been adopted by some of the leading motor-car firms with great success. The tires are held on the rim by means of two electrically-welded wires in such a way that it is claimed that the tires cannot come off the rims or creep. The tires are now being made in sizes up to 2½ in., suitable for cars of a total load, with passengers, of two tons. Samples of the tires were shown fitted to both wood and steel wire-spoked wheels. At this stand, too, were the Grant roller bearing axles, in which the necessary wear is distributed all over the surface.

"Buttercup" metal polish in tins, varying in price from a penny to a shilling, was the exhibit of the Chiswick Soap Company. It is applicable to all bright parts and produces a most pleasing and speedy effect.

The Motogear Company, 39, Cowper Street, City Road, London, E.C., make a speciality of the cutting of spur, bevel, and mitre wheels in raw hide, fibre, steel gun-metal, etc., for use on motor-cars, and the specimens they had on view of these at the Show attracted much attention on the part of trade visitors.

Price's Patent Candle Company, Limited, of Belmont Works, Battersea, London, S.W., has done so much to enlighten this dark world of ours that we naturally look to it for light on many a mooted point where motoring is concerned. At the company's stand, one of the first on the left on entering the Exhibition, light was to be obtained not only in the form of oil for lamps, lubricating and cleaning, but in two pamphlets entitled respectively, "Some Aspects of Lubrication" and "The Lubrication of Motor-Vehicles and Cycles," both by Mr. Veitch Wilson, a gentleman who writes with the authority of one who has spent years in the manufacture of lubricants, and who has also devoted much time and study to the chemical aspect of the questions with which he deals.

THERE will be an international motor-car race on the 14th of July from Moscow to St. Petersburg.

THE Alsace-Lorraine Automobile Club is organising a race from Strasburg to Colmar and back (a distance of 155 kilomètres) for the 16th inst.

REPLYING to a question in the Italian Chamber by M. Socci, the Minister of War said that all the automobiles for the Italian Army would be ordered in Italy.

THE German railways now accept motor-cars as luggage, on condition that they contain no petrol or other inflammable substances, and that they are the property of the person travelling with them.

THE Accumulatoren-Fabrik Gesellschaft, of Vienna, has secured a concession to establish and work a service of electrical omnibuses between Hirschwang and Payerbach; Lohner-Porsche hub motor-vehicles will be used, current being supplied by a battery of Tudor accumulators.

AN ordinance providing for a speed limit of nine miles an hour for motor-vehicles between 8 a.m. and 10 p.m. in the streets of Philadelphia has been introduced and referred to a sub-committee. In the meantime the police have received from the Superintendent the following instructions: "Automobiles, bicycles, and other vehicles propelled by steam or electricity must not be allowed to reach an immoderate rate of speed. This class of conveyance has no greater rights than any other vehicle."

AFTER more than a month's test of capacity and capability of an electric patrol vehicle under the hard usage such a conveyance is subjected to in police service, the Chief of Police, of Hartford, Conn., reports: "The vehicle is superior to the conveyance previously used in cleanliness and speed, and can be run more economically. The wagon does the work of four horses at a nominal expense of about 18 cents a day for power. I can safely say that the wagon is admirably adapted for the use to which it is put, and the department has occasion to feel proud that it is one of the first in America to be equipped with a vehicle that is modern and ornamental as well as useful."

CONTINENTAL NOTES.

BY AUTOMAN.

THE next great event is the Paris-Berlin race, which will be really more of an international struggle than the Paris-Bordeaux was. It will be a battle royal between Panhard, Mors, Mercedes and Serpollet, and, I hope, Napier. Panhard will have thirteen of his 50 h.p. cars in line and Mercedes has also produced a new type of 50 h.p. car. I saw the first one being driven along the Bordeaux road by its owner, Mr. Daunat, an American painter resident in Paris. M. Charley, the French agent of the Cannstatt Company, tells me that it weighs only 20cwts. 2qrs. 19lbs., and does the kilomètre in thirty to thirty-one seconds—equal to about seventy-four miles an hour.

SPEAKING of the Paris-Berlin race, I would remind the readers of the *Journal* that the A.C.F. propose to run a special train to take passengers along the route in such a manner that they shall see the arrival at each lap. The train will consist of sleeping and dining cars, and the fare to Berlin will be £8. Applications for places must be made not later than to-day, June 8th, and should be addressed to the Secretary of the A.C.F., Place de la Concorde, Paris. The train is open to all, whether members of the affiliated clubs or not, and ladies are also entitled to reserve places.

WAR has been declared by the A.C.B. against the Moto-Club of Belgium, an edict having gone forth that in future in all the contests and fêtes organised by the A.C.B., and in which members are alone allowed to compete or take part, such members will be disqualified if they should also belong to the Moto-Club.

THE Nice Automobile Club is organising a touring competition on original lines. The competitors are first handicapped according to the weight and horse power of their cars, and marks will be given in accordance with the distance covered, the altitude attained, the countries visited, the best account of the journey, and the best photographs taken en route. The competitors will have to send in the largest number of post cards they can during the course of their wanderings. The prizes will consist of a cup and two medals.

THE Touring Club of France has decided to hold a competition for brake power some time in August next. There will be three different trials—viz., (1) going slowly down an incline of from 5 to 6 per cent.; (2) going steadily down a hill of 10 per cent. for 3¼ miles; (3) stopping suddenly.

THE new regulations for motor-cars in Berlin come into force on June 15th. The following are the most important clauses: Every car must have two independent brakes, each capable of stopping the car in eight meters whilst going at a speed of 9.1-3 miles per hour. The lamps must be powerful enough to light up the road for twenty metres ahead. Any person under eighteen years of age is forbidden to drive a car. Every car must have a registered number given by the police, and also must have attached to it the name and address of the owner. There are no restrictions as to speed but a recommendation to reduce the pace to nine miles per hour at night, in crowded streets, and on bridges, etc., etc.

MR. J. N. TATA, a Parsee millionaire, is establishing a service of motor-cars from Poona to Mahabaleshwar, the hot weather seat of the Bombay Government.

WHILST taking a spin in a motor-car two gentlemen recently came to grief over a dog at St. Anne's. The animal defied their advance, and in order to avoid running it down the driver slightly changed his course and ran against the kerbstone. The car rolled over, knocking over a bassinette containing a baby, and the oil receiver caught fire. Fortunately, all concerned, even the dog, escaped without injury.

CORRESPONDENCE.

WET AND DRY BATTERIES.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—In reply to Mr. Foster's letter in last week's issue, re the merits of wet and dry cells for ignition purposes on a tricycle, I should recommend him to try Van Raden's Woven-glass accumulators, which have given satisfaction to all the people I know who use them. The great advantage of secondary cells over dry cells is the constant, or practically constant, voltage. Of course an accumulator on no account should be "shorted" with a wire across the terminals—as I have seen done—to see if they are charged, as permanent injury is done to the plates. These cells will run as long as any dry cell, and, instead of being thrown away, can be charged for about 1s., as against about £1 for a new set of dry cells. I see Mr. Foster mentions charging by the roadside; is he referring to primary cells? Of this type I believe the Doe is the best, but personally I know no one who uses these. The accumulators for a tricycle should be charged at a fairly low current for several hours; the lower the current and the longer the time gives the more efficiency. Meyra dry cells, I believe, are the best, if Mr. Foster intends to stick to dry cells. If there are any more points about the respective merits of cells, I shall be very pleased to give Mr. Foster any information on them.—Yours truly,

C. P. COBB.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—In reply to Mr. W. T. Foster, I would strongly advise him to dispense with both. I have had a lengthy experience with dry and wet batteries, neither are practical for electrical ignition; I recommend him to use only an accumulator. If Mr. Foster will write to me I shall have pleasure in giving him any information upon the subject.—Yours truly,

J. B. MORRIS.

WINDING-UP.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I find the "winding-up" necessary to start my 5 h.p. petrol car a considerable exertion and a nuisance; so much so, in fact, that I feel inclined to sell it at a sacrifice. Is any kind of motor-car made that can be started without having to be wound-up?—Yours truly,

WORK SHIRKER.

GREASE CUPS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I remember seeing a lubricator at the Exhibition, marked "Patent Central Screw," which I think is what the P. and W. Company want. Referring to my catalogue, I find this lubricator illustrated on page 138. Messrs. Trier Brothers, of Great George Street, Westminster, were the exhibitors.—Yours truly,

W. HAMPSTEAD.

THE NAPIER RACING CARS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—In your issue of the 25th ult. you kindly mentioned that one of our friction clutches had been fitted to one of the Napier racing cars. It was to the car which ran in the Paris-Bordeaux race. A correspondent of one of the London daily newspapers has sent a so-called explanation of the withdrawal of the car from the race, stating that it was due to something being wrong with the "cones," the natural inference from such a statement being that the clutch failed. Under these circumstances we would esteem it a favour if you could kindly assist us in preventing the spread of such an impression, by permitting us to state that Mr. Napier has assured us he has no complaint whatever against the clutch, and, in confirmation of this, he has favoured us with an order for two exactly similar clutches for the other two cars.—Yours faithfully,

THE CHAMPION FRICTION CLUTCH COMPANY, LTD.

WATER FOR LOCOMOBILE STEAM CARS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—It will probably interest the users of Locomobile cars to know I have demonstrated that the single-seated car can be run ninety miles with one supply of water by recovering the water of condensation and purifying it from oil, for repeated use in the boiler. During the Whitsuntide holidays I ran about 300 miles with the first car fitted with our improvements, and have pleasure in forwarding for your inspection a sample of the water remaining in the tank at the end of the journey, which you will observe is remarkably pure, free from grease, and in fact is most accurately described as distilled water. The efficient separation of oil from the water of condensation, which has proved a most difficult problem, is now done so thoroughly that it is possible for the cylinder lubricating oil to be recovered for use again, which has the double advantage of reducing the cost of expensive cylinder oil, and rendering one largely independent of fresh supplies when touring.

The car referred to above is the one that was exhibited at the Agricultural Hall, and is fired with kerosene. The consumption of kerosene in the above trial comes out one gallon per fourteen miles. I made the run from London to Littlehampton (sixty-two miles) without a stop for fuel or water, and the steadiness of the steaming and general running may be inferred from the fact that I was able to keep an appointment at Pulborough, Sussex, exactly to the minute, doing the run from Dorking, a distance of twenty-eight miles, in 1 h. 56 min.

It may be possible to run even longer distances than the above with one supply.—Yours faithfully,

THE CLARKSON AND CAPEL STEAM CAR
SYNDICATE, LIMITED.

(T. CLARKSON.)

MOTOR-BICYCLES AND TRICYCLES.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I am anxious to know if there is any kind of a guard made to fix on behind a motor-tricycle, to prevent the machine from tipping backwards, in case the sparking lever should happen to be advanced when starting the tricycle.

In answer to your correspondent's inquiry, motor-bicycles are, I think, liable to be taxed, as I know that motor-tricycles are liable, having had a reply to that effect from Somerset House, in answer to an inquiry which I made. I hope that the tax will be eventually repealed, so as to place all cycles on an equal footing of freedom from taxation.—Yours truly,

CECIL JACKSON.

MR. J. W. STOCKS, in company with F. T. Bidlake, proposes starting at 6 a.m. on the 9th inst., on an Ariel quadricycle, for a jaunt from Land's End to John o' Groat's.

MR. FRANK MORRIS, sole Norfolk agent for Daimler cars, has recently extended his works at King's Lynn. The new plant includes milling and drilling machines driven by a Robey gas engine, with which he is now constructing interchangeable parts for Daimler cars. Mr. Morris is also turning out some complete cars.

A NOTICEABLE feature of this year's Derby was the number of motor-cars which took the road for the historic Downs. Not only did their owners arrive at the course in good time, but they had a decided advantage in getting away, and mostly arrived early in town, well before the hurly-burly. No need for them to undergo that appalling delay usually associated with the process of finding and harnessing one's horses after the races.

MR. F. PARKER, of the Cycle and Motor works, High Street Slough, has been doing good service in the cause of motoring for the last two years. During that period he has conveyed hundreds of people, including local Magistrates, County Councillors, and policemen about the Thames Valley in motor-cars. He has recently moved to the above extensive premises, which are close to the post office, where he can store a dozen large cars, do repairs, and supply Pratt's motor spirit.

HERE AND THERE.



DR. BONSAILL, of Aberystwith, is one of the latest additions to the ranks of motoring doctors.

TWO motor-trolleys recently appeared at Hadley, and underwent a trial to the complete satisfaction of all concerned.

MR. E. O. HERBERT, of Upton-on-Severn, has been appointed agent for the Locomobile steam cars in that district.

THERE is some talk of starting a service of motor-cars between Darlington and Richmond, Yorks., a distance of 12 miles.

DURING the past month a weekly average of eighty-five automobilists have been fined for exceeding the legal rate of speed in the streets of Paris.

THE Lincolnshire Automobile Club held a run to Revesby on Saturday last, but only a few enthusiasts turned up. The proceedings were, however, very enjoyable.

USERS of motor-cars must expect some obstacles from obstinate people, but both the obstacles and the raisers thereof will gradually disappear.

DR. CAUDWELL, of Ropsley, near Grantham, has lately purchased a "Stonebow" car. He was such an apt pupil that he drove most of the way home from Lincoln, and then took the *mecanicien* down to Grantham Station and returned alone.

"MY AUTOMOBILE BOY" is the title of a new song brought out by the Chadwick Music Publishing Company, of Westfield, Mass. The air is catchy and the words appropriate.

THE Tyne Traction Company, Limited, has been registered, with a capital of £2,000, to carry on the business of hauliers, carriers by means of motor-cars, etc. The registered office is at Bank Chambers, Laygate Lane, South Shields.

THE new light carriage introduced by Messrs. Charron, Girardot and Voigt, of Paris, is extremely speedy, as well it may be, fitted with a Cannstatt-Daimler motor developing 22 h.p. The power is transmitted direct to the driving wheels.

THREE Blackpool men whilst riding in a motor-car had the misfortune to capsize it, with the result that two of them were conveyed to the hospital, where their injuries were found to be of such a nature as not to require their detention.

WHILST riding a motor-tricycle at Hyde, Mr. Joseph Wild, an ex-Mayor of the borough, who is over seventy years of age, lost control of the machine, which collided with the kerb and overturned, causing serious injury to the rider.

THE Reading and District Motor-car Company, Ltd., has been registered with a capital of £5,000 to carry on in Reading, or elsewhere, the business of builders of, and dealers in motor-cars, omnibuses, wagons, etc.

MR. OLIVER STANTON is the subject of an article in a recent number of the *Onlooker* as "The Man Who Drives the King." In the course of the interview Mr. Stanton is reported to have stated that the Daimler Motor Company are building a new body, specially designed to cope with the dust question.

A MOTOR-CAR accident occurred on the Chester to Manchester high road, near Tarvin, last week. A motor-car, which commenced a few days ago to run between Chester and Kelsall, left the former place, and was in the act of passing the Manchester coach, which was running in the same direction, when a collision occurred, and resulted in serious damage to the motor-car. The car was full of passengers at the time, but all escaped injury.

THE Roadway Autocar Company, Ltd., inform us that they can now deliver from stock 6 h.p. Mors cars fitted with new patent regulator, magneto-electric ignition, and wheel steering. The new regulator acts both on the valves and the governor, and greatly facilitates the handling of the car in traffic and for slowing down and quietening the engine when the car is standing. We understand that all the Mors 10 h.p. cars will be fitted with the new regulator and magneto-electric ignition in future.

A SOMEWHAT serious accident befell Mr. H. Brampton, of Kettering, on Whit Monday, whilst riding a motor-bicycle on the

Stamford road. One of the front forks becoming detached from the hub, the rider was thrown to the ground, and sustained a severe fracture of the left leg. First aid was promptly rendered by some men of the local ambulance, pending the arrival of a doctor.

SO fully is the economy of the motor-car appreciated in Philadelphia that the city employees wish to exchange the horses and vehicles which they now use for inspection purposes for automobiles. The city allows them 400 dollars per year for the keep of the horse and equipment, and this allowance the employees wish continued for taking care of the horseless vehicles. This, however, is meeting with some opposition from the authorities, who consider the sum excessive for the upkeep of a motor-car.

MR. H. A. O. MACKENZIE has presented to the Automobile Club a photograph of a steam-carriage which he built in 1874. This was the first self-propelled carriage which had the compensating gear upon the countershaft instead of on the axle. The carriage is believed to be unique in having had "mortice" wheels (wood teeth) for the driven wheels on the countershaft; these "mortice" wheels were substituted for the original cast-steel wheels in 1876, and were perfectly successful and silent in working.

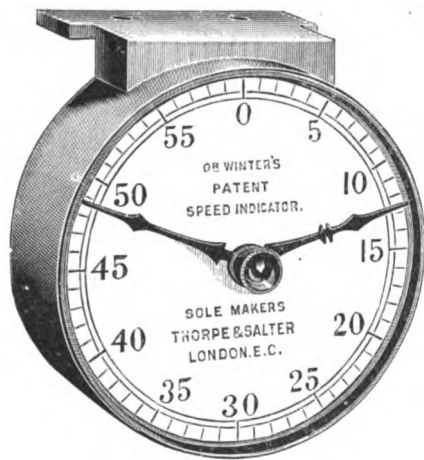
SEVERAL daily papers lately devoted considerable space to the doings of the Worcester motor steam fire-engine which belongs to the Norwich Union Fire Insurance Company. The facts are as follow:—The engine was being fitted with a new steam pipe when an alarm of fire was given. In ten minutes the engine was on its way to the fire without its ashpan and proper chimney and spark arrester used when travelling. It went about five miles in fifteen minutes, when a tube burst in the boiler and blew the fire all over the road. This accident might have happened when the engine was pumping, and considering the age of the boiler, and the long time since it was examined, it speaks much for the type of boiler employed.

IN placing their catalogue before the public the Pollock Engineering Company, of Ashton-under-Lyne, who are the sole manufacturers of the Turrell motor-cars and motors, make a big bid for favour. In the first place they state the important fact that all parts and workmanship, even to upholstering, are their own, excepting only tires and electrical ignition apparatus, which come from outside. The Turrell system, it is claimed, is no longer experimental, having stood the test of fifteen months' practical work. The economy of the system is evident when it is known that the normal number of revolutions per minute of the motor is less than 750. Diagrams explain the working of the belt and all mechanical details. The cars which are illustrated are neat, well turned out, and serviceable looking. With each is given away a liberal supply of spare parts and all necessary accessories, as well as a guarantee for six months.

THE latest thing in head lights for motor-cars is the Acetyloid motor-car lamp, the most recent development of the well-known series of apparatus on the Acetyloid system. This system is claimed to be the only one by which a self-contained portable lamp or generator, free from screws, joints, or other devices of a pressure-resisting nature, is rendered possible. The lamp has a handsome appearance, being strongly made of brass, nickel-plated throughout, and fitted with a silver parabolic reflector and convex lens, which gives the appearance of a ball of white fire to the lamp when lighted. The arrangement of the lamp consists of two detachable parts, the front portion containing the lens and reflector; the back part consisting of a case containing the generator, which is attached to the burner by means of a tube, to which is connected a rubber gas bag, which takes the effect of any jolting the car meets with, and thus maintains a regular uniform light throughout the journey. Another form of the lamp is made, wherein the generator is placed in a convenient position on the car, and attached to the head lamp in front by flexible metal tubing. The lamps are made by Messrs. Worsnop and Co., Limited, of Halifax.

DR. WINTER'S SPEED INDICATOR.

THE accompanying illustration shows the speed indicator for use on motor-cars which has lately been devised by Dr. Winter. The indicator, when attached to a motor-car, indicates in miles per hour the actual speed at which the car is travelling. Should the speed vary, the indicator shows all variations. A maximum index is also provided, showing the highest rate of speed made at any part of the journey. The principle of the instrument is that two cog-wheels are thrown into gear with each other automatically and, after gearing together for a certain fixed and known time, automatically separated. Of these two wheels, the driver is actuated by one of the carrying wheels of the vehicle, while the follower communicates with an index moving round a graduated dial. It follows, therefore, that while the wheels are in gear the faster the driver revolves, the further will the index be carried round the dial before the wheels are automatically separated. Before another record of speed can be taken the following wheel is returned to a "zero" position, ready for a fresh measurement; in the meantime, of course, the dial index remains pointing to that speed on the dial (in terms of miles per hour) which was measured in the last record. It will thus be seen that the method adopted secures a fixed and immovable reading during the time the cog-wheels are disengaged (approximately two



seconds). The automatic mechanism by which the cogs are engaged and disengaged is most ingenious, as is also the means by which the index corresponds to the varying speeds. Since the wheel train is carefully calculated, the indicator is, of course, accurate as to reading. The wheels and pinions are cut from steel, and all wearing parts are hardened, tempered, and ground true. The case is practically dust-tight. A maximum speed index is attached, recording up to 55 miles an hour. The instrument, which is slightly larger than an ordinary ammeter, is readily fitted to any description of car, usually and preferably upon the splashboard, the drive being obtained either from the axle or from the hub, any difference in driving wheel diameter being corrected in the gearing between the drive and the indicator itself. The instrument is manufactured by Messrs. Thorpe and Salter, of Clerkenwell, and is being introduced by Mr. F. L. Anderson, of 1, Farnival Street, London, E.C.

THE Automobile Agency, of 3, Cope Street, Dublin, have been appointed Irish agents for the Stirling motor-cars.

OUR paragraph last week regarding the public motor-car service at Bournemouth has brought some interesting information from Mr. W. Parker-Thomas, the manager of the Aberdare Valley Motor Company, Ltd., of Aberdare, South Wales. On Whit Monday this company had five cars out on the road, the number of passengers carried being 2,002 and the total distance run 320 miles. It speaks well for the Aberdare service that not a single mishap occurred to mar the success of the day's working.

THE LIVERPOOL SELF-PROPELLED TRAFFIC ASSOCIATION.

THE Earl of Derby, K.G., presided at the third Trials dinner of the Liverpool Self-Propelled Traffic Association, held at the Adelphi Hotel, Liverpool, on Monday night. A very large and influential company gathered together, his Lordship being supported by the Lord Mayor of Liverpool (Mr. Arthur Crosthwaite), Mr. Alfred L. Jones, the Hon. A. F. Stanley, M.P.; Mr. A. F. Warr, M.P.; Mr. W. F. Lawrence, M.P.; Mr. Charles M'Arthur, M.P.; Sir John Alexander Cockburn (Agent-General for South Australia), and other gentlemen. The Earl of Derby proposed the toast of "The King," remarking, among other things, upon the interest his Majesty takes in the science with which the Association is connected. The toast and the other customary loyal toasts were duly honoured. Mr. Charles M'Arthur, M.P., proposed "The Navy and Army."

Commander G. T. Wingfield, R.N., responded, as did also Colonel C. H. Scott, C.B., R.A. The last-named remarked that, if the Army had a more free hand, it might be a self-propelled association. He hoped the result of the trials in Liverpool would be the discovery of the best motor-lorry for military purposes.

Dr. Boverton Redwood, in proposing "The Houses of Parliament," said that the progress of the industry in which the Association was so much interested would largely depend upon the attitude of the Legislature. Fortunately, they had friends in court, who had already shown a deep interest in the subject. With the growth of population they could not rest satisfied with the means of locomotion which had sufficed for the past, and transport must receive much greater attention than hitherto, and he could not conceive of any subject more worthy the attention of Parliament.

Mr. W. F. Lawrence, M.P., and the Hon. Arthur Stanley, M.P., responded to the toast, the latter in his best and most facetious vein. He, referring to the Leader of the House of Commons as an automobilist, said that from what little he had seen of him on a motor-car he was certain that they would find in him an ardent supporter of accelerated speed. The Front Bench, he thought, would also follow the Leader's example in time. He thought, however, that instead of leaving it to policemen to say when a speed of twelve miles an hour was exceeded, it might be better to say that they were not to endanger the public safety.

Mr. A. G. Lyster, engineer-in-chief of the Dock Board, proposed "Automobilism, Heavy and Light." He felt certain of the ultimate success of automobilism, though there were necessarily anxieties arising from the opposition in certain quarters, which tended to delay its progress. The Automobile Club was warmly to be congratulated on the way in which it was approaching the difficulties of prejudice and obstruction by demonstrating the value and safety of the automobile. Regarding the heavy motor-wagon and the legislative difficulties it had to contend with, Mr. Lyster said that the series of trials held by the Self-Propelled Traffic Association demonstrated that an excellent working machine could be constructed, though they were prevented by legal restrictions from building a wagon which could compete with the heaviest form of horse-drawn lorry. This was an unsatisfactory condition, and it was to be hoped that Parliament would take an early opportunity to remove the restriction. Personally, he had every confidence in the commercial value of the wagon. Having had twelve months' experience of one, he was enabled to say that it could do four times as much work as a horse and lorry, and at one-half the cost.

Mr. Alfred L. Jones, responding, said nothing could be of more importance to Liverpool shipping than cheap motor traffic. There was no end to its possibilities. Regarding the relations of this country to its colonies, there never was a time when those relations had more need to be strengthened in view of foreign competition. The remaining toasts included "The Corporation of Liverpool and Other Corporations," proposed by Mr. W. Becket Hill, and responded to by the Lord Mayor of Liverpool and the Mayor of St. Helens; "The Automobile Club and its Affiliated Centres," given by Professor Hele-Shaw, and acknowledged by Mr. M. Mayhew and Mr. Norman Macdonald; "The Officers and Competitors of the Trials," proposed by Mr. A. L. Jones, and responded to by Mr. S. B. Cottrell and Mr. J. L. Thornycroft; and "The Chairman," proposed by the Hon. John Scott-Montagu, M.P., and suitably acknowledged by the Earl of Derby.

FURIOUS DRIVING CASES.

AT Marylebone, before Mr. Plowden, J. Lawson, of Hampstead, was charged on a summons with driving a motor-car at a furious pace on the 18th May. Police-constable Wood, 434 D, said he saw a motor-car containing four persons travelling along Park Road, Regent's Park, at half-past two in the morning at the rate of 20 miles an hour. The defendant was in charge of the motor, and when the witness called upon him to stop, he and the others in the car simply laughed and went on. About 100 yards further down the road the car collided with the wall of a depository and damaged the gates to the extent of a couple of guineas. Mr. Plowden: Was he still laughing? Constable: When I told him he would be summoned he said, "By jove, wasn't it a lark." Mr. Plowden: What caused him to collide? The Witness: A van turned out of a side street, and when the defendant put on his brake the motor swerved and ran into the wall. It was a danger to the public. A solicitor, who defended,

THE AUTOMOBILE MANUFACTURING Co., Ltd., 48/49, Long Acre, and North St., Manchester Sq., all cars in stock, Garage, Repairs.

said his client started with some other young men from Hampstead, intending to run to Margate, and they chose the early hours of the day as most suitable, as there was but little traffic then. But the police had made a mistake as to the pace, as they were not going faster than from 10 to 12 miles an hour. The motor skidded, and ran against the wall. The defendant, in his evidence, bore out his solicitor's statement, and added that he did not recollect laughing at the constable. Mr. Plowden: Surely you must know; are you always laughing at policemen? The Witness: Oh, no. Mr. Plowden: Perhaps there is something in what you said to the constable, you were out for a lark. But this rapid travelling is a serious danger to the public in towns, and you will have to pay a fine of 40s., with 2s. costs.

At Clerkenwell, Edouard Miscopain, of Long Acre, was summoned by Inspector Dyball for driving a motor-car on the 4th May, in Camden Road at a greater speed than was reasonable having regard to the traffic on the highway. Evidence was given that the car was going at about 20 miles an hour. Defendant said he lost control of the machine on going down an incline. He was ordered to pay the costs, 2s.

At Steyning, Augustine Gustave was summoned for driving a motor-car at an improper speed at Southwick. Police-constable Bristow stated that on Sunday, May 12th, in consequence of complaints received, he was in Albion Street, Southwick, and at half-past six in the evening he saw a motor-car coming along very fast from the direction of Shoreham. He timed it along a measured furlong with a stop watch, and finding that it was travelling at an excessive pace he ordered the driver to stop. He told defendant he had covered the furlong in 21 3-5ths sec., which worked out at the rate of over 20 miles an hour. There were a lot of people about at the time. Questioned by Mr. P. de la Chapelle, the witness affirmed that he could correctly gauge the time when the defendant reached the commencement of the furlong, notwithstanding the fact that he was stationed about 300 yards away. The defendant, questioned by his advocate, stated that his motor was travelling at the rate of about 10 miles an hour. He knew that because the rate was controlled by a lever. Answering the Magistrates, the defendant said it was possible for him to go faster. The Magistrates convicted, and stated that motor-cars were limited to a speed of 12 miles an hour. A fine of 17s. 6d., including costs, was imposed.

At East Harling Petty Sessions, Paul Delawille, a Frenchman, employed by Count Zborowski, of The Manor, Garboldisham, was summoned for having, on the 9th May, at Bridgham, driven a motor-car at a greater speed than 12 miles an hour. Defendant admitted the offence and said he did not know the law in this country. Superintendent Wright said he had seen the Count, and it was not his wish that his servant should drive so fast. A penalty of 10s. and costs, 11s., was imposed.

At Steyning, Harvey Ducros was summoned for driving a motor-car at an improper speed at Southwick on Sunday, May 19th. He did not appear, and Police-constable Bristow, who proved the offence, stated that defendant was going 15 miles an hour. After defendant left him he timed him for a furlong, and found that he covered it at the rate of about 14 miles an hour. Henry Chatfield, a gardener, of Southwick, also gave evidence. Superintendent Hooker stated that he had received complaints from the Southwick Urban Council on the subject. A fine of £1 7s., inclusive of costs, was imposed.

At Sevenoaks Police Court L. F. Harrison, a resident of Sevenoaks, was summoned for driving a motor-car at a greater speed than was reasonable and proper on May 16th. Mr. W. A. Wardley, solicitor, appeared for the defendant, and pleaded not guilty. P. S. Croucher stated that, seeing a motor-car being driven at a very furious rate in the Bradbourne Park Road, he stopped it and asked Mr. Harrison if he was in charge of it. When he replied in the affirmative witness said he should report him for travelling at an excessive speed. Witness had measured out a distance of 130 yards in the road, which was covered by the car in just under ten seconds. Therefore, the car had been travelling at the rate of nearly 27 miles an hour.—Cross-examined: When he first saw the car it was just rising on the brow of the hill. The driver stopped it within sixty yards after witness put up his hand. There was nothing to obstruct his view of the car. A constable who was in company with the last witness corroborated. Charles Poole said the motor-car passed his house "like a flash of lightning." Without exaggeration, he should say it was travelling from 25 to 30 miles an hour. Mr. Wardley, in addressing the Bench, said the value of the evidence of the last witness could be gained from his statement that a flash of lightning travelled from twenty-five to thirty miles an hour. He submitted that the police had made a miscalculation, but if the defendant had travelled at a greater speed than was reasonable he was extremely sorry. The safety of the public, however, was well looked after in the inventions made from time to time, and a car could be stopped almost instantly. Mr. Wardley called David Haxton, private engineer to the defendant, who said the car was one of the best made, and the brakes were so powerful that if he chose he could stop it dead. With regard to the summons against Mr. Harrison, witness said that on the other side of the hill he slowed down to a speed of about four miles an hour to allow a cart to pass, but when he went down the hill he drove at about fourteen miles an hour. It was quite impossible for the car to travel at twenty-seven miles an hour. After brief deliberation the Magistrates decided to impose a fine of £1 and 19s. 6d. costs.

At Gravesend Police Court last week Harold Cosh, son of the licensee of the Clarendon Hotel, was summoned for furiously driving a motor-car

on the 14th ult. The case had previously been adjourned. P. C. Pagram said at about 5.35 on the 4th ult., he was going up Windmill Street to Victoria Avenue. He saw a motor-car coming over the Hill, and noticed that it was coming at a very furious rate. He considered it was going at the rate of twelve to fourteen miles an hour. He could scarcely see the car for the dust it was throwing up. He did not believe it would have been possible to pull up the car in its own length. John Adlington Mason, considered that the policeman was quite within bounds in saying that its pace was twelve miles an hour. Other evidence having been given as to excessive speed, Mr. Clinch, addressing the Bench for the defence, asked the Magistrates to keep their minds perfectly open until they had heard all the evidence. They had not had a witness before them who had had the slightest experience of motor-cars. Mr. Mason had said he was nervous of them, perhaps, not unnaturally. There were persons in the car whose word could not be disputed by anybody. Defendant was driving Captain Kidston, of the Black Watch, who had taken Wombwell Hall and the Earl of Darnley's shooting. The car was going at less than ten miles an hour, and could be stopped in three yards. Captain Kidston, 3rd Black Watch, said he had business at Cobham, and arranged with the defendant to take him over. There were six in the car. They returned to Gravesend for him to go back to town by the South Eastern Railway. He had had considerable experience of motor-cars, and one of his friends on the car had had as much experience as he. It took them a little under half an hour to get from the keeper's house at the top of Thong Lane, at Cobham, to the station. They came down Windmill Street at a pace under ten miles an hour. He had ridden up and down Shaftesbury Avenue in London at a greater speed than this. Harold Cosh, the defendant, said he was the owner of the car, and drove it on this occasion. In Windmill Street, on the day mentioned, they were going at ten miles an hour. The clutch was off the engine, and the car was going down the decline by its own weight. There were two brakes on the car. They were not going at a furious rate, and there was no occasion to go fast. He could pull up the car in its own length (about three yards), when on its highest speed. On this occasion he could have pulled up in eight feet. The Bench retired, and after deliberation the Mayor said they had come to the conclusion that the case was proved, and defendant would be fined a guinea and costs. Mr. Clinch said, on the previous Friday the witnesses for the prosecution were not present, and he applied for the costs to be allowed for that hearing. The judgment was then altered to a fine of one guinea, without costs, and the Chief Constable was allowed to pay the costs of his witnesses from this amount.

At the Leeds City Police Court before the Deputy Stipendiary Magistrate (Mr. B. R. Stansfeld) Mr. Herbert Walter Ladell, surgeon, was charged with having driven a motor-tricycle "at a greater speed than was reasonable." Police-sergeant Rudd stated that at six o'clock on the evening of the 21st ult., Mr. Ladell passed along Beeston Road on a motor-tricycle, and for a distance of 250 yards he travelled at more than twelve miles an hour. Inspector Blakey was going in the same direction on a bicycle, and was left a long way behind. Mr. Arthur Willey observed that the provisions of the Order only forbade a greater speed than fourteen miles an hour, and it was impossible for the machine to go ten miles an hour on the day in question as it was out of order. Mr. Stansfeld said that on a much-frequented road it was required that the speed should be reasonable, and ten miles an hour was not reasonable on Beeston Road, which was within the city boundary. Inspector Blakey deposed that the machine passed him at a speed of about fourteen miles an hour. Mr. Willey said he would be surprised if it were held that ten miles an hour was too great a speed for such a vehicle. Defendant stated that the motor was out of order as it "missed fire," and he had to use the pedals for the slightest incline. He never got up to nine miles an hour. He called Dr. Rock, who had ridden the machine the same day, in support of his statement. Mr. Stansfeld said it was very difficult to deal with questions of speed, and a good deal of the evidence was speculative, but he thought the motor was going more than ten miles an hour, which was too great a speed in that locality. As the police did not ask for more than a nominal penalty the fine would be one of 10s. including costs.

COLONEL KNOX, Aldershot, pleaded guilty to driving a motor-tricycle at a speed exceeding twelve miles an hour at Frimley on May 15th. P. S. Coleman gave evidence. The defendant said he had his machine under perfect control. Fined 10s. and costs.

At the Chertsey Petty Sessions, Lucian Le Gros, civil engineer, London, was summoned for driving a light locomotive which was drawing another vehicle, at a greater speed than six miles an hour, in Weybridge, on May 5th. Mr. Staples Firth defended. P. C. Killick stated that at 7.20 p.m. on the 5th ult. he was on duty in Thames Street, Weybridge, when he saw defendant driving a motor-tricycle at a rate of from 10 to 12 miles an hour. As he approached witness saw he had a trailer attached. A lady was riding in the trailer. He called to defendant to stop, and he pulled up in about thirty or forty yards. Defendant admitted that he was travelling from 10 to 12 miles an hour. He produced a licence, which witness examined to verify his name and address. He did not read the licence to see what it contained. Defendant, in evidence, said he had been largely identified with motor mechanics for many years. When he got the car in question the officials at the local office of the Inland Revenue told him that for all purposes of the law the tricycle with the attachment was treated as one vehicle. He paid two guineas for his licence, the Inland Revenue people telling him that the vehicle must be classed as one with more than three wheels.

He got the two guinea licence after the policeman stopped him. Basil Joy, London, consulting engineer, gave it as his opinion that, considering the fact that the back seats were fastened to the tricycle with nuts, and that to attach it required a spanner and a certain amount of mechanical knowledge, the tricycle with the attachment was one vehicle. With regard to the tricycle alone, the front wheel could be removed and a couple put in its place, fastened in just the same manner as the attachment that had been described as a "trailer." He would not call that anything but one vehicle. Mr. Firth, in addressing the Bench, argued that the Act was intended to refer only to vehicles that could stand independently and be used without other machines. The attachment to Mr. Le Gros' tricycle had nothing with which it could be steered. After a short discussion, the chairman (Mr. J. G. Pilcher) announced that defendant would be fined 40s. Mr. Firth: 40s.! Why? The chairman: Because we think so. Mr. Firth: Then I must take the case to the High Court. I ask you to stay execution for seven days.

We understand that the case will probably be taken up by the Motor Union. As is well known in the motoring world, but apparently not yet in magisterial circles, the Inland Revenue authorities long ago decided that a motor-cycle and a trailer are to be treated as one vehicle.

WITHOUT A LIGHT

At Peterboro' Arthur J. Robertson, of Woodstone, was summoned for riding upon a motor-car in Narrow Street at 11.5 p.m. on May 22nd without having a light attached. John A. Bingham, auctioneer and landlord of the Royal Oak, Bridge End, was summoned for using improper language at the same time and place. Mr. F. W. Atter represented the defendants. P.C. Hall said he saw the motor-car enter Narrow Street at the market-place end. It was travelling at a high rate, and when it passed Wentworth Street someone shouted, "You've got no light." Mr. Robertson at once stopped the car and attempted to light the lamp. Witness, who had been standing near the Waggon and Horses, spoke to him about the speed and also about riding without a light. Mr. Robertson apologised, and, failing in his effort to obtain a light, went to his shop in Bridge Street and procured another lamp. There was no oil in the first lamp. As to the second case: when witness said the car was going at from twelve to fifteen miles an hour, Mr. Bingham, who was with Mr. Robertson, made use of an improper expression. He repeated the bad language two or three times. In cross-examination witness admitted that he might have said to Mr. Bingham "It won't pay you to dictate to a policeman." Defendants went into the witness box and said they started out for a ride at 9 p.m., lighting up beforehand. When they reached the Cathedral gateway on the return journey they noticed that the lamp was out. They got out and relighted it. The vibration caused by running down Narrow Street extinguished it again, and directly they discovered the fact they stopped the car. Mr. Bingham admitted that he might have used one word attributed to him, but not the other. The Bench convicted in each case. Robertson was fined 10s. with 2s. costs, and Bingham 10s. with 5s. costs.

MOTOR-CYCLE RACING AT CHICHESTER.

Two motor-cycle events were included in the race meeting held at Chichester, under the auspices of the Chichester Cycling Club, on Whit Monday. In the two miles motor-cycle handicap there were three competitors, H. Humphry and W. J. Shippam (scratch), and T. S. Adeock (360 yards). Humphry at scratch passed Adeock after completing the first mile and eventually won by half a lap, Shippam being fifty yards behind Adeock. Time, 4 min. 47 secs.

The second event was a Three Miles Motor-Cycle Handicap. First heat: R. Dennis, Guildford, tricycle (scratch), T. H. Tessier, London, bicycle (440 yards), H. Humphrey, tricycle (100 yards), W. J. Shippam, tricycle (100 yards). Dennis, who rode a tricycle of his firm's make, managed to beat the bicycle (a Werner) by about fifty yards. Tessier was greatly favoured because of the fine speed he showed in a trial spin, and it was subsequently elicited that before the contest the machine was knocked over, fracturing the pipe from the carburettor to the mixing chamber. Humphry was third with Shippam close up. Time 6 min. 52.4-5 sec. In the second heat E. B. Blaker, tricycle (50 yards) beat T. S. Adeock, tricycle (400 yards) at the first corner of the last lap, and won by about 50 yards. Time 7 min. 34.1-5 sec. The final heat, which was likely to be the most exciting, so far as the result was concerned, was deprived of a big finale through Dennis getting hung up in the clump of bushes at the south end, and losing a lap. He started again, winning the applause of the crowd. Tessier, on the Werner bicycle, won easily, however, from Adeock, Blaker securing third place.

TRACTION ENGINE OR MOTOR-LORRY.

In the Aberdeen Justice of Peace Court ex-Baillies Archibald Mackenzie and Sangster and Messrs. Hugh Cowan and John Johnston on the bench, the Speedwell Motor-Car and Cycle Company, Ltd., Aberdeen, for whom the secretary of the Company, William Hendry, appeared, were charged with having on 5th April, driven a locomotive propelled by steam, and a loaded wagon on which it was erected, and a loaded wagon

attached thereto, along Hutcheon Street West, and with having, on the 11th April, driven the locomotive and wagons along Rosemount Place, with only two persons in charge, instead of three. Mr. E. Rennet, advocate, appeared for the company, and the Procurator-Fiscal prosecuted. A large number of witnesses were examined, and their evidence went to show that at times the vehicle did emit smoke and vapour, which would bring it under the Locomotives Act. For the defence it was contended that no smoke or vapour was emitted unless from some accidental or temporary cause, which was allowed light locomotives under the bye-laws. It was also contended that the engine was not drawing two vehicles, as the car on which it was set could not be looked at as a separate vehicle any more than a tender was separate from an engine. The bench, after consideration, said they had come to the conclusion that both as regards the emission of smoke or vapour from the engine, and on the question of having two vehicles instead of one they were of opinion that the machine must come under the Locomotive Act. They therefore found the charge proven, but as this was the first offence of the kind, they restricted the penalty to £2 2s. The driver of the vehicle, Donald Donaldson, was also charged with having driven the machine, but the Fiscal said he would depart from this case, as it depended on the first one.

M. SERPOLLET has just been over the Paris-Berlin route on one of his steam cars, as a kind of preparation for the forthcoming race.

THE English entries in the Paris-Berlin race so far are—the Hon. C. S. Rolls, Count Zborowski, Mr. S. F. Edge, and Mr. C. Jarrott, the last-named being entered to ride a motor-cycle.

THE Crawford Gear Company, Ltd., has been registered with a capital of £1,000 to adopt an agreement with M. Crawford, to carry on the business of engineers, motor, motor-cycle, and carriage manufacturers, etc. The registered office is at Holbrooks Lane, Foleshill, Coventry.

AMERICAN motorists are in a pleasant flutter of anticipation just now. A few weeks ago President McKinley was seen on a motor-car, driven by a young lady, not altogether unknown at White House. It was observed on that occasion that Mr. McKinley was the victim of violent emotion, and his conversion to automobilism is now looked upon as assured.

TO CORRESPONDENTS.

All communications intended for insertion in this Journal or relating to Editorial matters should be addressed to THE EDITORIAL DEPARTMENT, MOTOR-CAR JOURNAL, 39 and 40, Shoe Lane, London, E.C. Letters must in all cases be accompanied by the name and address of the writer, as no notice will be taken of anonymous communications.

The Editors cannot undertake to return MSS. or drawings, although every effort will be made to do so in the case of rejected communications. Where such are regarded as of value, correspondents are requested to retain copies.

The Editors do not hold themselves responsible for the opinions expressed by their correspondents, or for statements and facts which do not appear in the editorial columns.

The Editors and publishers beg also to state that they will accept no responsibility for unsolicited contributions, even if used, unless payment for same is directly specified in forwarding, and the terms arranged before publication.

To insure insertion communications and contributions must be in the Editor's hands by Wednesday forenoon of the week in which the same are intended to appear. Disappointment may be caused by non-compliance with this rule, and to avoid this earlier receipt, if possible, is necessary.

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THE Motor-Car Journal.

VOL. III.]

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COMMENTS.

THAT constructors of electric vehicles are not standing still is evidenced by the two long-distance runs that have just been made, and it is satisfactory to find that a British firm has secured the record. M. Krieger, on a car of his own construction, drove one day last week from Paris to Mantes and back—a distance of 144.90 kils., or 89 miles—in 6 hrs. 47 mins. 21 secs., on a single charge. A battery of forty-four Fulmen accumulators weighing 783lbs. was used. This new record was not allowed to stand long, however, for on Tuesday last the

British and Foreign Electrical Vehicle Company, Ltd., submitted one of their cars to a long-distance test. Leaving Westminster Bridge in the morning, a run was made to Reading and back to the Automobile Club in Whitehall Court. There being still a supply of electrical energy in the battery, the run was continued to Balham, the total distance run on one charge of the battery—which is of a new type—being 94½ miles. The time occupied was about eight hours, but it must not be forgotten that a good portion of the run was through heavy traffic, a strong head-wind being also encountered on the outward journey. The British and Foreign Company are naturally very proud of the achievement, but we believe that they will not be happy until they touch the 100 miles on one charge.

Mails by Motor-Car.

AN experiment was successfully made on Monday by the Liverpool postal officials in carrying the mails between that city and Southport by motor-vehicles. At last week's trials the representatives of the Post Office were greatly impressed with the utility of the motor-carriages for road work, and it was decided that further experiments should be conducted to test the value of the vehicles for mail-carrying purposes. Accordingly the Milnes petrol motor-lorry (A2 of the trials) was requisitioned, and a start made at 4.30 a.m. on Monday. Mr. F. Salisbury, Postmaster of Liverpool, rode on the lorry while Mr. E. Shrapnell Smith and Mr. E. A. Rosenheim rode alongside on the former's Ariel quad. Southport was safely reached, and the Liverpool Postmaster is reporting to the G.P.O. headquarters in London on the result of the trial.

The Numbering of Motor-Cars.

At the last meeting of the Berks and Oxon Chamber of Agriculture, Mr. W. J. Henman opened a discussion with reference to motor-cars. He thought some steps should be taken to have the vehicles numbered and their speed restricted. He had seen motor-cars come down Moulshod Hill at twenty miles an hour, and some day there would be an accident, and, with no number on the car, there would be no means of finding out the name of the driver or owner. He also thought there

should be some restriction to compel them to slow down when meeting conveyances. At present they shot by before anyone was hardly aware of their approach. Mr. Henman gave notice that he would bring the matter forward again at the next meeting, and the secretary was instructed to put it on the agenda.

The Motor-Car Service for Reading.

WE have already mentioned that Reading and district are to be provided with a public service of motor-cars. At the last meeting of the Caversham Urban District Council, the Reading and District Motor-Car Company applied for licences for six motor-cars to ply for hire in Caversham. The Chairman said that he had received complaints about the speed of the cars in the streets of Caversham. He moved that the Clerk be instructed to make a formal complaint to the police with reference to the matter. Mr. Parfitt remarked that they had heard of few accidents, and he should be sorry, as a member of the Council, to put difficulties in the way of using the cars. They were marvellously controlled, and, although the speed might be somewhat high, the danger was infinitesimal. Unless they had good grounds for it he would be sorry to see the Council take the first or any steps unnecessarily. He did not think the legal speed was exceeded, although it was difficult to tell. Mr. Fidler considered they should encourage every means of communication between Caversham and Reading. Mr. Allwright seconded the Chairman's resolution, and observed that it was time to put the nuisance down. The resolution was then put and passed. The licences were, however, all granted.

Motor-Cars as Remounts.

DURING a recent debate on Army Estimates Mr. Louis Sinclair made the suggestion that motor-cars should be used as remounts. For £80 a small motor-car could be obtained, capable of carrying two men and a small gun much longer distances than horses. Motor-vehicles were greatly used in the armies abroad, and, he predicted, would be an important factor in future warfare. On horseback, argued the hon. member, a man could be shot down rapidly, but he would not be so liable to be sniped on a motor-car. Lord Stanley replied that the whole question of motor-cars for transport service was being gone into. The spectacle of a regiment of motor-cars would be inspiring, but he thought it was one we should never see. Lord Stanley may be right—neither he nor the *present* generation may see such a spectacle, but posterity will.

Helps to Horticulturalists.

WE had just read an article in the *Gardeners' Magazine*, declaring that the possibilities of the motor-car in commercial horticulture are very great, when we visited one of the best known nurseries in Surrey and found a notice, "Dogs, perambulators, bicycles, and motor-cars are not allowed in these grounds." Such a statement was not encouraging until we learned that some motor tricyclists and others had gone on tours of inspection among the flowers on their machines, and had

not always kept to the beaten paths. Seriously, however, the same qualities that are rendering the automobile useful to the market gardener will make it indispensable to the horticulturist of the future who seeks a market for his produce in the nearest town. The competition of English-grown with foreign flowers in London, mainly due to increased railway facilities, should be brought within measurable and reasonable limits by the motor-car.

Motor-Cars in Workhouses.

ONE of the problems that ever presents itself to Boards of Guardians is that of securing easy access to fresh air on the part of the infants. At West Ham a perambulator to carry twelve juveniles has just been purchased, and at Mutford, in Norfolk, a motion to supply two smaller vehicles has been lost. In the course of the discussion a motor-car was suggested by one facetious guardian, which, we are glad to see, was not adopted. Norfolk has yet to wear down a great deal of prejudice against the motor-car, and the presence of such a vehicle in a workhouse yard would have caused much pious horror in the county. At the same time, it would have emphasised the universality of the automobile, for, had the suggestion been adopted, we should have had both the Union and the Palace in one county acknowledging the merits of the motor-car.

Curious Police Ac- tion in the City.

THE case of Mr. L. Sinclair, M.P. for Romford, is one that ought not to be lightly forgotten, and one which should be investigated by all interested in the development of motoring as a pastime. Mr. Sinclair was summoned before the magistrates. The police alleged that he was driving furiously through the City. After hearing the evidence the summons was dismissed by Alderman Sir Marcus Samuel, and everyone thought that was the end of the case. But according to a letter which Mr. Sinclair has addressed to several of his constituents that is not so. The constables who gave evidence contradictory to Mr. Sinclair's statements have been granted additional holidays by Sir Henry Smith, the City Police Commissioner, who, when written to on the subject, said he had held an exhaustive inquiry and had arrived at a different conclusion to that reached by the magistrates. To be consistent the Commissioner should have hauled the M.P. into one of the dungeons of the Tower, and probably had he lived a couple of centuries ago some such fate would have been his. The matter is noteworthy as opening up the possibility of policemen regarding the proceedings as justifying them in persecuting motorists. Surely the better course would have been to have acknowledged the decision of the magistrates, and not to have shown a want of discipline by subsequent inquiry. Mr. Sinclair asks what effect this will have on the police. They will naturally say, he adds, "If we get the magistrate to convict, well and good. If not, why the Commissioner will reward us; so we are all right anyway."

Nottingham Automobilists.

ON Thursday, the 6th inst., the Nottingham and Notts Automobile Club paid a visit to Ringwood Hall, Brimington, the residence of Miss Bayley, sister of Mr. Thomas Bayley, M.P. for Chesterfield. Mr. Bayley, who is also vice-president of the Club, joined his sister in welcoming the visitors who, to the number of about fifty, made the journey via Mansfield in eleven cars of varying descriptions. The start was made about three o'clock, and the thirty miles were accomplished in a little over two hours. The condition of the cars and passengers on arrival at Ringwood testified to the dustiness of the roads. The party included Mr. and Mrs. Coken, Mr. and Mrs. Wells, Mr. and Mrs. Watts, Mr. and Mrs. Percy Huskinson, Mr. and Mrs. Rimmington, Mr. W. Knowles (president of the Club), Mr. Burton and Dr. Hogarth, and Mr. Cutts. After tea and a rest, the return journey was commenced shortly before seven o'clock.

An "Opportune" Moment.

"DOGBERRY," one of the best known contributors to the *City Press*, declares that "each day seems to witness an increase in the number of motor-cars used for commercial purposes." And then having recognised what is perfectly obvious to all who have occasion to travel in our large towns, he goes on to observe that "the moment is therefore opportune for suggesting the advisability of regulations for their control being drawn up by the authorities." This is almost identical with the attitude of the early days of last century, when the authorities regulated the new industry to such an extent as to seriously retard any chance of its progress for a number of years. Just when they are coming into prominence seems to be regarded by some people as the proper time to work destruction on new ideas.

Arrested for Furious Driving.

MR. S. F. BEEVOR was summoned at the Marylebone Police Court on Friday last week, June 7th, for driving at too great a speed having regard to the traffic on the highway. Mr. and Mrs. Beevor were driving from Maidenhead, and the constable stated that as he drove down Pembridge Road he was going three times faster than the ordinary traffic and collided with a hansom cab causing injury to it. The constable insisted on arresting him and taking him to the police station, leaving Mrs. Beevor sitting on the car in the road. He was, however, soon released. Mr. Staplee Firth defended. Mr. Plowden, the magistrate who tried the case, dismissed the charge, and in dealing with the unjustifiable arrest by the policeman stated that he was sorry that Mr. Beevor had been placed in such an unpleasant predicament. The constable had no right to act as he had, and he hoped Mr. Beevor would forget this unpleasant incident.

Unfair Methods— or What?

THE friendly attitude of the "powers that be" at Southsea towards automobilists is well known, and it is the more to be regretted that the police should resort to underhand methods against supposed infringers of the law, unless indeed there is another explanation of the following occurrences. A well-known sportsman and motorist was driving along the front on Friday last week, in a venerable car of his which is not exactly qualified for a Gordon-Bennett defender, and on returning to his coach-house was confronted by a couple of men in plain clothes who accused him of driving furiously, and whose want of courtesy seems to have nearly led to a breach of the peace. On being challenged to show that they were constables they would not or could not do so, and the automobilist, whose name and address were well known, dismissed them with the advice that they had better summons him. As another and faster car, of a similar colour to his, had been seen also indulging in an evening promenade, he thought it possible that it was a case of mistaken identity, as his vehicle could hardly have been fairly accused of excessive speed. The next evening, however, a local cycle agent was the victim of similar threats from, apparently, the same men, whose assertion that they were police he allowed to pass without question. If this sort of thing is permitted, it is within the power of any malicious person to annoy automobilists by tricks of the same kind, without the latter having any means of knowing whether or no he is the subject of a practical joke.

The Kentish Motor- Car Service.

A GREAT deal of attention has been drawn to the Kentish motor-car service successfully inaugurated between London and Tunbridge Wells last week. Distressed agriculturists throughout the Home Counties are anticipating big things in the near future, and now that the service is a *fait accompli*, congratulations are pouring in from all quarters. Perhaps the most valuable of these is a letter from Sir David Salomons, a director of the South-Eastern Railway Company, who has for long advocated the employment of motor-cars as a

means of rapidly delivering light and perishable goods. From the tone of Sir David's letter it seems that a railway company derives no profit from short-distance goods traffic, therefore there is little fear of an all-round lowering of rates as a means of keeping the motor-car out of the running.

Horse Dangers at Guildford.

MESSRS. DENNIS BROS., of Guildford, were very busy on Saturday, as was also Mr. F. Ostler, whose premises are only a few yards from the "Speed King" factory, in the windows of which a photograph of the arena at the Motor-Car Exhibition is a popular attraction. Guildford people, writes a contributor of the *Motor-Car Journal*, who has just spent some time in the town, are well accustomed to the motor-car, thanks to the geographical position of the town as well as its pleasant location and the frequent tours down its steep main street which have been organised by the Automobile Club. In fact, the horse-drawn vehicle is acknowledged to be more dangerous in such a district. One day last week a serious accident happened to the four-horse parcels coach, which would have been impossible had a motor-car been employed. When descending a steep hill one of the horses

have been accustomed to linger when the horse-drawn vehicle comes upon them and have not yet realised the new conditions. But the educational process is going on with birds—as it is with horses and their drivers.

Lightning's Latest.

OF all the newspaper comments on the French races none have been so absurd as those of our quick-witted contemporary *Lightning*, which, under the heading of "Electric Automobile Notes," gives many weary lines of attempted strong writing with a view apparently of filling space and appearing critical. *Lightning's* young man was reminded by the Paris-Bordeaux race of the nursery rhyme of "The ten little nigger boys"—a fact which leads us to suppose the writer must be younger than was commonly supposed. The Automobile Club is asked to assist the trade in the conveyance of fruit and dairy produce "instead of the continual organising of competitions for the benefit of councillors." Really we had hoped that the time had gone when such insipid vapouring would have been found in the columns of a technical journal. Just fancy *Lightning* deploring speed on the highway!



AN AUTOMOBILE PICNIC AT BLYDI, ALGERIA.

fell, with the result that the coach was sharply directed towards the gutter and overturned. Fortunately, the driver escaped serious injury, but the guard was considerably bruised and the horse was killed. The dangers of horse-drawn vehicles have been adequately proved during the Epsom week, and, as the *Westminster Gazette* remarks, "There is always more or less danger lurking in the use of the char-à-banc"—a fact proved in two or three dreadful incidents on the road to Epsom.

The Paris-Bordeaux Race.

ELSEWHERE we give some interesting extracts from comments by contemporaries on the recent great race. These are chiefly valuable as being the testimony of the leaders of public opinion in the provinces with regard to speed and safety being combined, and show very clearly that the conversion of every thinking man is only a matter of time. Much has been made of the remains of several small birds found on the front of some of the cars, one competitor explaining that he overtook some small birds pecking corn in the road and the automobile was upon them ere they had risen far from the ground. We remember similar experiences on the first day of the 1,000-mile Trial in this country, and have often noticed that birds in the road frequently misjudge the speed of the motor-car. They

Work for Surrey Police.

MOTORISTS in Surrey have to be careful just now, for the police are on the prowl seeking whom they can imagine is going at an accelerated pace. The pity is they did not exercise more supervision of the traffic on the roads at Epsom during the race week. Throughout the summer, too, parties of beanfeasters and trippers generally will be straining the pace and the tempers of horses to the utmost, and we should like to hear that cruelty had been stopped, so far as these poor animals are concerned. That would be better than annoying motorists who are still subject to much of the suspicion with which the railway was regarded some years ago.

Safer than Horses.

ALTHOUGH we do not expect to be believed by the world at large, we venture to state our firm conviction that the distressing accident which cast its shadow over Derby week could not have happened had the unfortunate char-à-banc been propelled by a motor. A motor-car does not bolt, or take fright, as do horses. It is, moreover, usually provided with three brakes, and not with one only, which too frequently causes a swerving movement trying to the nerves of a restive horse

Further, if by any chance every brake refuses to act it is always possible to turn a motor-car against such an obstacle as a ditch or bank before a dangerous rate of speed is developed.

The Scottish Automobile Club.

A MEETING of gentlemen interested in automobilism was held on Tuesday afternoon in Glasgow, for the purpose of inaugurating a Glasgow and West of Scotland section of the Scottish Automobile Club. There were about thirty gentlemen present; the Right. Hon. J. H. A. Macdonald, K.C.B., Lord Justice Clerk of Scotland, presiding. Mr. Norman D. Macdonald moved, "That a Glasgow and West of Scotland section of the Scottish Automobile Club be formed forthwith." Having explained that the Club existed for organisation, information, advice, assistance, and protection, he said the work of the Club in the past had been to some extent of a social character. There were also things of interest which had taken place behind the scenes, such as had occurred recently in Edinburgh, in which the Club had shown itself to be of use in a very practical way. The authorities there had framed an obnoxious set of clauses in a Bill whereby, by advertising two notices covering twenty-four hours each, they could cause any class of traffic to be stopped in any street in the city, or any class of traffic to go at a certain speed, and various regulations of that sort. The Automobile Club took up the matter, and brought pressure to bear upon the Lord Advocate and the Secretary for Scotland, so that when the Bill came up before the House it was then found that the Secretary for Scotland had insisted upon the insertion of a clause making the period of notice sufficiently long to allow of any objections being lodged and argued before the Sheriff. By taking such important action, the Club were seeking to conserve and look after the liberty of the subject. Mr. H. N. Napier, shipbuilder, seconded. He urged that the Club should not countenance fast running along the streets and roads. Automobilism was a good thing: it had come to stay, and ought to be encouraged in Glasgow. The Chairman, in supporting the resolution, said the principle upon which they were proceeding, and which they were urging upon Glasgow automobilists, was a principle of decentralisation. Speaking upon the general question of automobilism, his lordship said the movement was rapidly progressing. Perhaps it had not progressed in Scotland as speedily as it might have done. He hoped that the members of the Club would conduct their proceedings on the highways reasonably and sensibly. He did not suggest for a moment that it was sensible to suppose they were going to drive only at the rate of nine miles an hour, yet he did not wish to see men with enormous goggles and black half-masks upon their faces tearing along in a cloud of dust through which you could not see an inch of road for a distance of seventy or eighty yards. That was not reasonable. If their proceedings were conducted reasonably, all the fears of the general public would rapidly disappear. Mr. J. R. Nisbet moved, and Mr. James Burns, Motherwell, seconded, the appointment of the following gentlemen to act as the first Committee, with powers to add to their numbers, and to elect for the first year the representatives to Council and other representative bodies:—Messrs. James Burns, J. B. Talbot Crosbie, Wm. Kingsbury, D. McColl, Henry M. Napier, John R. Nisbet, Robert J. Smith, A. W. Steven, P. Stirling, and Thomas Syminton.

The Effect of Artificial Restrictions.

THERE are few arts or sciences the progress of which is not, in one way or another, impeded by artificial restrictions, but it is nevertheless true that these are sometimes the unintended source of certain compensations. The speed limits on French railways have been the cause of the development of express locomotives which surpass those of this country on up grades: while the three-ton limit for motor vehicles has undoubtedly stimulated improvement in construction and material; and to the limit—though this cannot be classed among artificial ones—of the "motor" of an ordinary bicycle to 1.6 h.p., must be attributed its marvellous lightness and efficiency, an

indirect evidence of which is the curious fact that the motor-cycle, its mechanical descendant, is the only rival in speed to the heavy racing car. No benefit, it is true, can be attributed to our own universally-observed speed limit; but the proposed limitation of racing cars by the A.C.F. to 18 cwt. should do much to encourage improvement in constructional design, and the reduction of the ratio of dead weight to useful load. In a motor-bicycle, it may be remarked, capable of about 25 miles an hour, this ratio is 2.3 approximately; in an ordinary light car it may vary from 3 to 6, and in a 30 h.p. racer it is nearer 12 or 14.

IMPORTANT TRADE MEETING.

ON Tuesday last, at the Automobile Club, Mr. Roger Wallace, K.C., took the chair at a meeting called together to consult upon the future of exhibitions. The meeting was on this occasion restricted to manufacturers and agents of whole cars. It was fully representative of this most important section of the trade, confirmed all the resolutions of a previous meeting, adjourned from May 21st, and went still further, practically tabooing all projected exhibitions, otherwise than the one to be held annually at the Agricultural Hall, under the supervision of the Club, and management of Mr. C. Cordingley.

On the first resolution, proposed by Mr. W. H. Astell, being put to the meeting, it was carried unanimously, "That manufacturers and agents of motor-cars here present recognise that the Automobile Club held the first purely Automobile Exhibition in this country; has been, and is, the recognised authority to hold trials of motor-vehicles and to give certificates in connection therewith, and has rendered, and is rendering, invaluable services to the automobile movement in this country. They therefore consider the Automobile Club is the proper authority to supervise exhibitions in this country, and seek that the Club should continue that supervision."

The second resolution, proposed by Sir Edward Jenkinson, "That the manufacturers and agents here represented are of opinion that there should only be one exhibition of automobiles in London or about per year," was carried with equal unanimity.

Mr. J. J. Mann's third resolution, "That there shall be only one exhibition per annum; that it shall be under the same management as the recent exhibition; that it shall be at the Agricultural Hall at the same time approximately as the recent exhibition, and under the control of the Automobile Club," met with the same cordial reception.

So far, the meeting had only gone over old ground. A fourth resolution, also proposed by Mr. J. J. Mann, and carried, was, "That a circular letter be issued by the Automobile Club to manufacturers and agents, enclosing a printed letter to be signed by each individual firm or agent, declaring that they will not exhibit at any exhibition in London or within twenty miles of Charing Cross which is not recognised by the Automobile Club. This agreement to hold good until the end of 1903. The exhibition space of the Automobile Club Exhibition to be open only to those who sign the agreement above named."

To guard against the remote contingency of back-sliding, Mr. Simms proposed as a fifth resolution, "That the Automobile Club shall have the right to refuse space at their exhibitions to all who have exhibited automobiles or their parts at any exhibition within twenty miles of Charing Cross, which is not recognised by the Automobile Club," which was also carried.

Mr. Shrapnell Smith, who called attention to the fact that provincial shows were not covered by the above resolutions, proposed as a sixth, which was carried, "That the Automobile Club withholds its patronage from motor-car exhibitions held in other parts of the country, not within twenty miles of Charing Cross, unless such exhibitions are held under the auspices of the local centre of the Club."

A discussion followed as to the position of manufacturers who had signed contracts to appear at other exhibitions. No one, however, seemed willing to admit this, till, amidst much laughter, a gentleman confessed to having done so—on April 1st. Encouraged by this open confession two other gentlemen owned up to having booked space elsewhere—provisionally.

The Automobile Club and County Councils.

DEMONSTRATIONS IN LONDON.



A GREAT upheaval of their prepossessions on the subject of motor-car control is what a number of British County Councillors must have experienced last week. Indeed, they made open confession, many of them, that such was actually the case, after they had taken part in the mammoth demonstrations which had been so long maturing, and which the Automobile Club brought to so triumphant an issue on Thursday, Friday, and Saturday, the 6th, 7th, and 8th of June.

So far as human agencies could ensure success, everything that was possible had been done in the way of previous arrangements, and the sole remaining factors that were at all uncertain were a continuance of the fine weather, and the presence of the County Councillors themselves. In neither respect was any disappointment forthcoming. The weather was glorious; the Councillors came forth in considerable array.

One could have wished for even more, it is true; but over 250 were appointed to seats on cars, and in the majority of

visitors had not much difficulty in discovering their allotted seats.

First to arrive on the scene were the 12 h.p. Panhard and 6 h.p. Daimler of Mr. R. W. Hudson, the former being the once famous car which led the van throughout the 1,000-Mile Trial, under the masterly control of the Hon. C. S. Rolls. Only thirteen months have elapsed since that historic event, yet what changes have taken place in English automobilism! This particular 12 h.p. Panhard is not only one of many now in use in this country, but all alike have ceased to be regarded as of exceptional power, considering the fact that cars of sixteen, twenty-four, and even fifty horse power have been built in English factories, to say nothing of recent importations as well.

The next car up was peculiarly noteworthy, not only by reason of its distinguished ownership, but because of its being the first of its type to be seen on the road. This was a Panhard *voiture légère* of seven, not five, horse power, and it belonged to

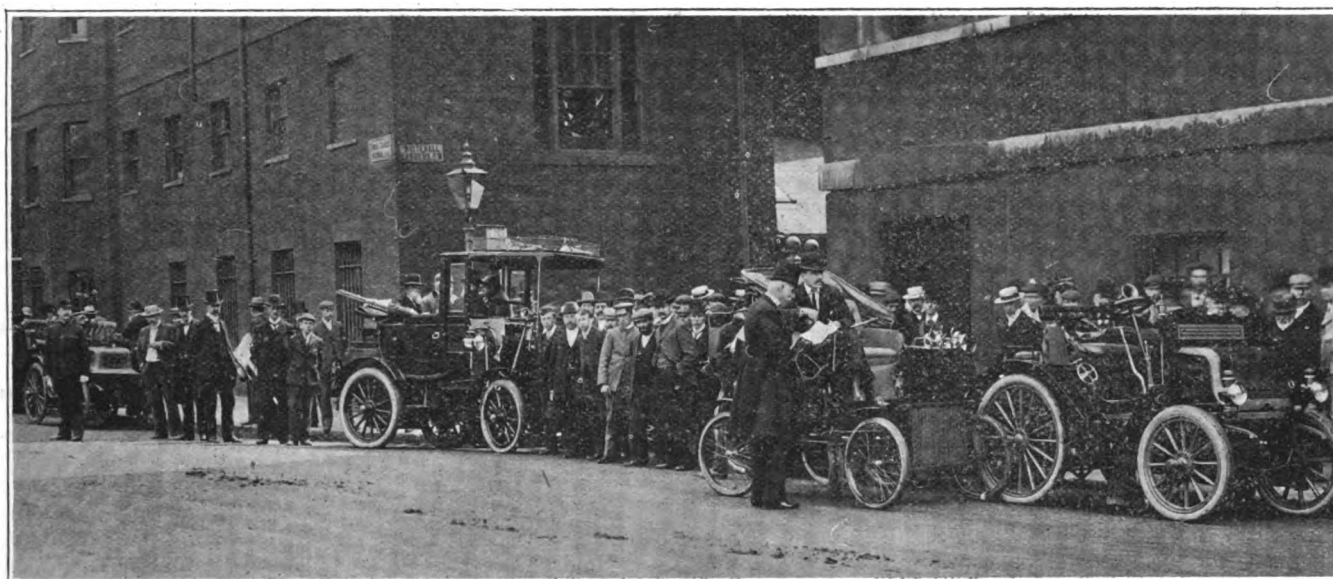


Photo by]

THE START FROM THE AUTOMOBILE CLUB.

[Argent Archer.

cases they faced the music. There were some who came without standing in any need of conversion towards automobilism, to which their sympathies had already been accorded; but there is no manner of doubt that the majority of the assembled Councillors had come in at least an apathetic, and in some cases a hostile, spirit, and it is with gratification, therefore, that one is able to record a complete change of front in practically every case before the week was over.

FIRST DAY.

Whitehall Court and the Horse Guards Avenue began to be busy by ten o'clock on Thursday morning, when a squad of District Messenger boys marched out of the Automobile Club and took up their positions along the kerb, their mission being to stand with uplifted poles bearing placards indicating the positions of the cars in intervals of ten. The intermediate numbers were also chalked along the pavement, so that no County Councillor stood in any quandary as to the whereabouts of his car, provided only that it turned up in due time. Some confusion necessarily arose in cases where a driver was unpunctual, or failed wholly to appear, but, on the whole, the

the Earl of Carnarvon, one of the first of our prominent sportsmen to take kindly to the new pastime. Painted in French grey and nicely finished throughout, the little car presented a most elegant appearance, its comparatively roomy tonneau being a welcome departure from the abbreviated types familiar on the various single-cylinder voiturettes.

Mr. W. J. Peall drove up on his well-known 6½ h.p. Daimler, and then came a fine 12 h.p. Daimler belonging to Mr. J. Lindsay Scott. Yet another Daimler, the 6½ h.p. of Mr. Herbert W. Lewin, followed, and then came Mr. Charles F. Torrey's 8 h.p. Peugeot. The next car to appear on the scene was one of imposing appearance, with most unusual carrying capacity; in fact, it was practically a bus with the top off, but without any suggestion of unwieldiness, or, indeed, aught but exceeding comfort. This was the new 12 h.p. Daimler of Mr. T. R. B. Elliott, and attracted much attention.

The air was now resonant with "teuf-teufs," and cars rolled up in quick succession. A 6 h.p. Motor Manufacturing was followed by Earl Russell's 7 h.p. Napier-Panhard, and then came the old reliable 6 h.p. Daimler of Mr. H. H. L. Lewis, a car which carried 300 voters to the poll for Mr. Mark Mayhew

at the last London County Council election. Two smart little cars from the Roadway Autocar Company—a 6 h.p. Mors and a 4½ h.p. Renault—then enlivened the scene, after which the snow-white Krieger electric car of the British and Foreign Electrical Vehicle Company glided gracefully into its place.

Mr. Alfred Bird next drove up on his plum-coloured 12 h.p. Panhard, followed by the well-known 7 h.p. Daimler of Mr. Ernest Estcourt. A car seen by many for the first time was the 5 h.p. Wilson, driven by its designer, Mr. Walter G. Wilson, which interested the *cognoscenti* by the extraordinary silence of its gearing. The vehicle, however, which was the cynosure of most observers was the new 12 h.p. Serpollet of Mr. Alfred Harmsworth, driven by Lancaster, his *mécanicien-in-chief*. The car was fitted with a landau body, and, being very lofty, presented a quite unusual appearance. Its burners gave a curious roaring sound as it stood, like the blast of a small furnace, and occasional puffs of smoke were visible from the same source.

The handsome 12 h.p. Panhard of Mr. Harmsworth was also placed at the disposal of the County Councillors, as also was the big 24 h.p. Daimler of the Hon. John Scott Montagu, M.P., piloted by its owner. Mr. Roger W. Wallace, K.C., the Chairman of the Automobile Club, drove up in a smart-looking red and black Motor Manufacturing car of 7 h.p.; Mr. T. B. Browne brought his 6 h.p. Panhard, another car which braved the ordeals of the 1,000-Mile Trial; Mr. Percy Richardson's 6 h.p. Daimler was another familiar object, as also was the powerful 19 h.p. Daimler of Mr. J. R. Hargreaves, J.P., which—whisper it not in the ears of scandalised anti-automobilists—he had driven all the way from Norwich that very morning! The white and red 12 h.p. Panhard which Sir Hickman Bacon, the premier baronet of England, has lately acquired from Mr. Lazenby was also on the ground, its wings having been clipped to the extent of a reduction of its sprocket teeth from 19 to 13 since the transference.

Most interesting of all, however, from one point of view, was the little 5 h.p. Renault of Miss Vera Butler, which Mr. Frank Butler drove up at a smart pace, and pulled up and turned in its tracks to the visible amazement of County Councillors who were hard by. The fact that this car had been driven from the north of France to the Riviera and back without a solitary mishap, and by a young lady, speaks volumes for the efficiency of even small automobiles; and if actual records like this were only more widely known, we should hear far less of the popular but fallacious theories as to break-downs than is at present the case.

But we have not by any means exhausted the list of cars which put in an appearance. In addition to the foregoing there were Mr. Rendle's 6 h.p. Daimler, until recently the property of Mr. E. Manville—the car which Mr. Pitman drove through the 1,000-Mile Trial; Mr. Henry Edmunds's 9 h.p. Daimler "Antrona"; Mr. Roger H. Fuller's 4½ h.p. De Dion phaeton, with an awning; Mr. W. M. Hodges's 6 h.p. London Motor Company's Daimler; Mr. Granville M. Kenyon's 6 h.p. Darracq; Mr. Charles Threlfall's 6 h.p. Daimler; Mr. Fred. A. Rodewald's 6 h.p. New Orleans; Mr. W. H. Astell's 7 h.p. New Orleans; Mr. Thomas Wood's 4 h.p. Locomobile; Mr. J. H. Adams's 8 h.p. Canello-Dürkopp, driven by the Rev. Arundell Whatton; Mr. C. N. Williamson's 7 h.p. Orient Express, driven by Dr. E. E. Lehweß; Mr. Edwin Midgley's 5½ h.p. Gladiator; a 4½ h.p. Humber; Mr. F. N. Horne's 7 h.p. Parisian Daimler; Mr. H. E. Hooper's 8 h.p. Panhard; Mr. A. Carlsh's 8 h.p. Georges Richard; Mr. J. C. Layng's 3½ h.p. International; Mr. C. Cordingley's 6 h.p. M.C.C. Panhard; Mr. G. Souther's 3 h.p. Benz; Mr. H. F. Englehardt's 6 h.p. M.C.C. Iveagh phaeton; Mr. L. A. T. Johnson's 9 h.p. Benz; Mr. Herbert St. Smith's 6 h.p. Panhard; Mr. G. Cornwallis-West's 8 h.p. Panhard; Mr. H. L. Kosh's 6 h.p. Daimler; Dr. C. Whitehall Cooke's 3 h.p. New Orleans; Mr. Clement Braby's 4½ h.p. De Dion; Mr. C. W. Mitchell's 12 h.p. Panhard; and Mr. A. G. Sharpe's 5 h.p. Locomobile.

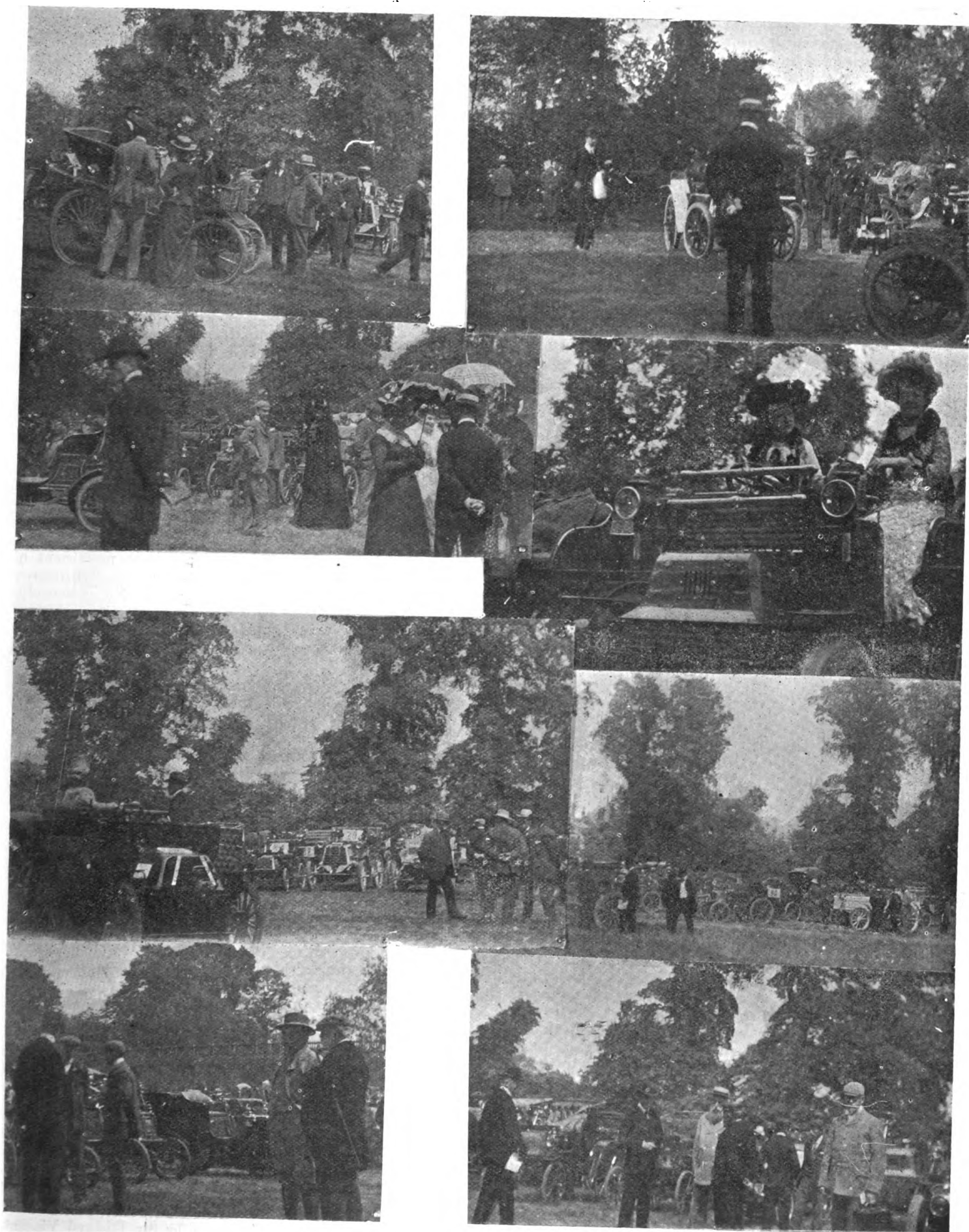
It is hardly necessary to remark that the vehicles above enumerated constituted a very fine display of up-to-date automobiles, and it goes without saying that their presence in such force formed a very interesting sight.

The following were the gentlemen who had accepted invitations for the opening day:—Colonel W. Gwynne-Hughes, the Earl of Wharnccliffe, Lord Llangattock, Mr. W. Franks, Colonel G. B. Hobart, Major D. C. Budd, Mr. H. R. D'A. Willis, Lord Glanusk, Rev. St. A. H. Molesworth St. Aubyn, Captain Clarke, Major S. N. Thompson, Mr. T. Davies, Mr. J. Monks, Mr. H. Bradford, Mr. W. Bean, Alderman J. Joseph, J.P., Mr. Owen Thomas, Mr. Collingwood Hope, Colonel J. Baskerville, Colonel G. H. C. Beisiegel, Mr. E. R. James, Mr. Fairless-Humphreys, Mr. E. R. Trotman, Mr. Charles Bailey, Mr. C. H. Pedley, Mr. J. Straker, Mr. J. Blackham, Mr. J. Chettle, Mr. H. Dennis, Mr. J. H. Bullock, Mr. J. L. Greenway, Mr. T. B. Cope, Mr. C. Birchall, Mr. J. P. Coultas, Mr. C. D. Nicholson, Mr. James Wright, Mr. J. W. Smithies, Mr. Scott Barrett, Mr. Thomas Savage, Mr. J. D. James, Mr. Arthur Carkeek, Mr. Arthur Vernon, Mr. T. Horberry, Mr. W. W. B. Hulton, Mr. E. W. Gooch, Mr. C. H. C. Brady, Mr. G. G. Lewis, Mr. D. Davies, Colonel G. Dixon, Mr. Jno. W. Dingle, Dr. Thompson, Mr. A. C. Duncombe, Mr. Stanley Bligh, Mr. Edward Phillips, Sir J. Pender, Captain Fullarton Jones, Mr. W. Haworth, Mr. E. A. Taylor, Mr. F. C. Loder Symonds, Mr. Walker, Mr. H. S. Pyman, Mr. H. A. L. Francis, Mr. J. K. Bourne, Mr. A. G. Buckhardt-Ashton, Mr. Bingley, Mr. W. J. Payne, Mr. J. D. Cradock, Mr. F. M. Northen, Mr. G. R. Harris, Mr. O. H. Jones, Mr. T. N. F. Bardwell, Mr. W. E. Garnett-Botfield, Mr. Tonman Mosley, Mr. E. Hyde Greg, Mr. C. E. Shaw, M.P., Mr. J. Wright, Mr. T. Round, Mr. J. H. Watson, Mr. S. Farrow, Mr. A. Elwell, Mr. A. A. Spilman, Mr. W. H. Parkin, Mr. Robert Fox, Mr. B. A. Adam, Mr. C. B. Crawshaw, Mr. Duke Fox, Mr. B. T. Ringrose, Mr. J. Franklin-Hindle, Alderman Cockerill, Alderman Britten, Mr. G. Lawrence, Mr. A. R. Empson, Mr. H. Ellis, Mr. Bourne, Mr. Slater Harrison, Mr. Gwynne Holford, Mr. W. W. J. Mansbridge, Mr. Francis Meade, Mr. T. Dutfeld, Mr. W. Gething, Mr. J. W. Rowe, Mr. Geo. R. Dickens, Mr. Hy. Bonsall, Mr. Fairfax Lucy, Mr. R. Hollick, Mr. Sticking, Mr. Wm. Wilson, Mr. R. T. Richardson, Mr. W. A. Standing, and Mr. J. A. Wilson.

It is not practicable to give the county represented in each case by the foregoing gentlemen; no details having been furnished to that end, but it may be said of them collectively that they emanated from Berkshire, Carmarthenshire, Cardiganshire, Cheshire, Cornwall, Denbighshire, Flintshire, Glamorganshire, Lancashire, Lincolnshire, Merionethshire, Monmouthshire, Montgomeryshire, Northamptonshire, Nottinghamshire, Oxfordshire, Rutlandshire, Somersetshire, Staffordshire, Westmorland, Warwickshire, and Yorkshire. It will readily be seen that "gallant little Wales" was strongly represented on this the opening day's programme.

About a quarter past eleven Mr. Roger Wallace, whose car was "number one," was the first to move off, and gradually, but without any desire to form a procession, the other cars followed suit. It was left to the discretion of the individual drivers to choose their own route, and some of them drove their guests round Richmond Park, or elsewhere, before finishing at Sheen. By one o'clock, however, the lawn at Sheen House presented a truly animated spectacle, what with some sixty automobiles and scores of well-known *chauffeurs* and their County Council visitors.

Now, while it is impossible to speak for every unit in the gathering, and injudicious to assume that everybody was precisely of the same mind, this much may be said with emphasis, that not only were no signs of disapproval in the least degree apparent, but expressions of delight, commingled with surprise, seemed all but universal. It was clear that the ease with which the cars could be controlled, the celerity with which they could slip through traffic as compared with vehicles elongated by shafts, and the entire absence of alarm on the part of the



SNAP-SHOTS AT SHEEN HOUSE CLUB,

animals passed on the way, were nothing short of a revelation to those previously unacquainted with the *nuances* of automobile locomotion.

When the muster was complete a general adjournment was made to the large room, which at one time was used as a cycle showroom, but which now served excellently well as a dining-hall. Here Lord Llangattock presided over the numerous company of Councillors and their charioteers, and a "cold collation" was served. At the conclusion of the repast the toast of "The King" was of course proposed, and honoured with especial appropriateness and fervour from the fact that His Majesty is the most distinguished of *chauffeurs*. Then Lord Llangattock, whose kindly hospitality at his Monmouth seat last October will always be remembered by those who took part in the Club's autumn tour, extended a cordial welcome to the visitors, whom he congratulated upon the fact that their names would go down to history as of men who did not adopt the view that a new movement, because it was new, should be squashed without thought or consideration of its possible importance to the country. The movement, he said, was one which should give employment at high wages to thousands of our artisans, and provide rapid means of transport for agricultural produce and merchandise. [2]



DUKE OF NORTHUMBERLAND AND SIR ARTHUR ARNOLD WITH
MR. ROGER WALLACE, K.C.

Photo by]

[Argent Archer.

Then came an encouraging speech from Mr. C. E. Shaw, M.P., in support of the Chairman; after which it was the turn of the County Councillors. Alderman Joseph Joseph, J.P., Chairman of the Carmarthen County Council, responded to the toast of "The Visitors," and Colonel Geo. Dixon, Chairman of the Cheshire County Council, proposed "The Automobile Club," and wished it every success in its great work. He was strongly of opinion that the new industry should not be hampered in any way, and urged County Councillors to consider well their attitude towards automobiles. For himself, he saw no reason why they should not go at twenty or thirty miles an hour where a good view of the road ahead was to be obtained.

In his customary tactful manner Mr. Roger Wallace replied on behalf of the Club, and was glad to note that some of the Councillors were beginning to realise how the motor-car would open up districts that had hitherto been unknown. It only remained for county authorities to see that all the roads were good, and the motor-car would soon follow with plenty of visitors. A sympathetic speech was made by Alderman W. B. B. Hulton, a well-known member of the Lancashire County Council, in proposing the Chairman's health, in the course of which he made it clear that that important county

would not throw in its lot with the obstructives. One can remember the time when it used to be the Lancastrian's boast that "What Lancashire thinks to-day England thinks to-morrow." It is devoutly to be hoped that the apothegm may be justified anew.

Subsequently the County Councillors again took their seats in the cars, with an obvious anticipation of a pleasurable experience and an entire absence of the trepidation that some of them appeared to entertain before the outward journey. Some of the cars were driven straight to town, and others took more devious routes, according to the preferences of the guests.

SECOND DAY.

Friday morning again broke gloriously fine, with every prospect of another successful demonstration. The list of Councillors able to attend on that day was less numerous than on Thursday, and fewer cars, in consequence, were pressed into the service. Over thirty of those previously named, however, again turned up, and there were also several new arrivals. Prominent among these was the 12 h.p. Daimler of Mr. E. Manville, fresh from the factory at Coventry, and with a still unfinished body. The *tonneau* was exceedingly capacious, and the car should make an admirable touring vehicle. Mr. A. H. Howard brought his 5 h.p. Marshall, the back wheels of which he has fitted with Collier tyres of 120 millimetres diameter. So far they had given no trouble, and had been driven some six hundred miles. Another car which had not appeared on the first day was the 8 h.p. Motor Manufacturing car of Mr. C. A. Moreing, a nicely-finished vehicle with a particularly smart bonnet. Mr. Scott Montagu's big 24 h.p. Daimler, Mr. J. R. Hargreaves's 19 h.p. Daimler, and Mr. A. Harmsworth's Serpollet were again the most prominent of the assembled vehicles, and the Roadway Autocar Company's Renault turned up with a "Mylord" body, fitted in lieu of a *tonneau*, the occupant being a lady, who was well shielded from the dust.

Though less numerous, as we have said, the second day's list of visitors was still imposing. They were set down on the list as follows:—Col. G. Gascoyne, Sir H. Pelly, Mr. G. Manners, Mr. R. Elcock, Mr. A. O. Sillifant, Mr. M. Hulton-Harrop, Mr. E. A. Fooks, Mr. J. G. Wood, Mr. J. Bowen-Jones, Mr. J. W. Cripps, Mr. W. Failes, Mr. E. Powell-King, Mr. J. T. Homer, Mr. J. F. Symonds, Mr. S. Oldman, Mr. R. Kerrison, Mr. E. Dudley, Mr. Bentley-George, Mr. C. E. Hobhouse, Mr. M. B. Marshall, Major Carthew, Mr. W. Snell, Mr. W. Priestley, Mr. Courtenay F. Wilson, Mr. T. Ellis, Mr. E. Playne, Col. J. A. Austin, Mr. E. R. Pratt, Mr. J. W. Beeton, Mr. W. E. Baker, Mr. J. Lloyd Price, Mr. J. W. T. Tyler, Mr. W. Somers, Mr. J. Amphlett, Mr. E. B. Sparke, Mr. John Linton, Rev. J. Young, Mr. G. Fiske, Mr. Barham Carter, Mr. C. Manby, Colonel Goodden, Mr. G. W. Thompson, Mr. A. Dennis, and Sir William Vincent.

The counties from which these gentlemen hailed were Derbyshire, Dorsetshire, Gloucestershire, Hampshire, Herefordshire, Huntingdonshire, Norfolk, Shropshire, Suffolk, Wiltshire, and Worcestershire.

So far as we could gather—for, of course, the cars went singly down to Sheen—there was nothing to differentiate the drive down from that of the previous day. We have heard of no untoward incident whatever, and, happening to be one of the first to reach Sheen House, we were able to note, as on Thursday, the obvious delight, both spoken and unspoken, of the County Councillors as they arrived. They seemed more struck with the unconcern of the animals on the route than anything else, having no doubt heard already something of the wonderful controlling powers of the automobilist over his machine, but still entertaining supersensitive ideas as to the frightening of horses. Those notions had manifestly vanished into thin air, however, ere the ride was over.

The luncheon was presided over by Sir Edward Vincent, and his speech in welcoming the visitors was admirable in form

and matter alike. He remarked appositely enough that what they all hoped was that the County Councillors present would take advantage of the opportunity of seeing what automobilists could do, and they (the Councillors) would then be able to decide what automobilists ought to do. He laid strong stress on the good feeling that ought to be displayed by every automobilist, and said that if a motor-car was controlled by an experienced driver, whether professional or amateur, and if that driver was animated by the good feeling and consideration for others which had always characterised English gentlemen, then an automobile was absolutely no danger, and was not even a nuisance to others. The solution of the question was that cars should only be driven by those who were competent for the work. It was absolutely feasible to have the best and fastest cars in England, and to make full use of them, without being in the least degree a danger to the community at large. Then Sir Edward spoke with telling effect upon the absurdity of having laws which were in direct conflict with the good sense

Mr. John Bowen-Jones, J.P., Chairman of the Shropshire County Council, responded for the visitors, and said that he felt very strongly that no speed limit should be imposed. He admitted that the control a driver had over his car was much greater than he had supposed.

Mr. J. W. Beeton, of the Norfolk County Council, said that all the opposition to automobilists would be effaced in time. He would go back to his Council, and, when the opportunity occurred, support, if not move, that every restriction should be removed from the automobile pastime and the industries connected with it.

Sir William Vincent said that that day had witnessed his conversion. He would go back from his drive that day feeling that along the open roads there need be no limit of speed whatever.

Mr. A. Dennis, Dorset County Council, was of opinion that this was a question of forbearance all round. Common sense, mutual forbearance, and ordinary courtesies should



Photo L. H.

THE SCENE AT SHEEN HOUSE CLUB.

[Argent Archer.

of the public, and, therefore, liable to be neglected in the observance. Speaking from his own personal experience, he was absolutely convinced that there was no danger to traffic in going at 30 or 40 miles an hour along a broad straight road—and, he added, he spoke as an owner of many horses. As regards numbering, he could not believe that anything of that kind would be beneficial. Nothing satisfactory would be done unless the working of the law was facilitated by good feeling on all sides.

Then the Hon. John Scott-Montagu, M.P., supported the toast, and defined the policy of the Automobile Club as one of conciliation. He said how glad they were to see the County Councillors there, and hoped that the gathering would tend to spread among them a better knowledge of how motor-cars were controlled, and to help them realise that automobilists were not such "horrible beasts" as they had sometimes been represented.

be the things which were demanded on the road. They did not want restrictive legislation at all, and should rely upon the common law of the country instead of presenting special bye-laws to the legislature.

Colonel Goodden (Dorset) said that to treat every driver of a motor-car as a convict was a useless and irritating provision.

A Hampshire Councillor said that the time for numbering had not arrived. It was perfect folly to try to choke off a movement that must come. He spoke feelingly, because he drove a pony that invariably turned tail when it met a car, but he had rather submit to that than see a motor-car stopped.

Another Councillor, from Flintshire, testified to the way in which Wales was looking forward to the extension of the motor-car industry as their very salvation. They were handicapped by railway rates, and when the motor-car industry became general it would restore their country to what it was in the old coaching days.

Colonel Gascoyne (Derby) spoke against both speed restrictions and numbering proposals. He was sure that motor-cars were the vehicles of the future.

Mr. Roger Wallace made another able speech, and emphasised anew the fact that the common law should be sufficient for all purposes. A sportsmanlike feeling among drivers of cars would do far more than any regulation could ever accomplish.

After Alderman Kerrison, of the East Suffolk Council, had also spoken against a speed limit, the proceedings closed and the return to town was made as on the previous day.

THIRD DAY.

Splendid weather and another imposing array of cars were the dominant features at the opening of Saturday's proceedings. Nearly all the vehicles which had been in use on Thursday and Friday were on the ground, while several others made a first appearance. The Hon. C. S. Rolls drove an 8 h.p. Panhard, with *tonneau* body; Mr. Alfred Harmsworth sent a 6 h.p. Daimler; Mr. Henry Edmunds had his 1,000-Mile Trial car "Rhoda" as well as the "Antrona"; Mr. Ernest Pitman turned up on his new $7\frac{1}{2}$ h.p. Daimler phaeton, with yellow panels and grey under-frame, the car being noteworthy for its lengthy wheel base. Mr. T. Schlentheim brought down his new 12 h.p. Motor Manufacturing car, with wagonette body and a special spider seat behind; Mr. Ballin Hinde sent a red Panhard of 12 h.p., and also a 6 h.p. Benz; Mr. C. Friswell drove a 12 h.p. Gobron-Brillié; Mr. F. W. H. Hutchinson, a 10 h.p. Benz; Mr. Percy Richardson, a Kimberley dog-cart; Humbers, Ltd., sent one of their phaetons as well as the new $4\frac{1}{2}$ h.p. car previously in evidence; Mr. T. F. Toovey drove a $7\frac{1}{2}$ h.p. Peugeot, Mr. A. W. Heard a smart Century tandem, and Mr. P. McMahon a $3\frac{1}{2}$ h.p. Aster. Two cars were sent by the Locomobile Company, and Mr. R. E. Phillips drove a Mors Petit Duc. There was almost a rush for seats, but sufficient cars were in attendance to accommodate all the Councillors who had foregathered.

The Duke of Northumberland's was the first name on the list, which also included Lord Saltoun, Sir G. M. Grant, Lt.-Col. St. John, Mr. W. J. Bull, M.P.; Sir Arthur Arnold, Mr. A. Inskip, Mr. W. W. Marks, Commr. O. Young, Mr. J. Twinch, Mr. H. J. Johnston, Lt.-Col. J. Colquhoun, Mr. H. W. Tinne, Mr. H. J. Bristowe, Mr. W. Fox, Mr. W. H. B. Rosher, Mr. T. H. W. Idris, Mr. G. H. Radford, Mr. W. P. Warren, Mr. J. Edgell, Mr. T. Latham, Mr. A. W. Marshall, Mr. F. Jenkins, Mr. C. E. Grey, Mr. E. O. Fordham, Mr. J. Wicks, Mr. T. P. Brand, Mr. S. R. Ginn, Mr. W. W. Green, Mr. H. E. Brooks, Mr. D. Bower, Mr. H. Cumberland, Mr. C. Hayles, Mr. R. C. Lambert, Mr. G. A. Jeffery, Mr. M. Millard, and Mr. C. Soundy.

Among these Councillors and visitors the London County Council was strongly represented, and other counties which sent delegates were Bedfordshire, Berkshire, Buckinghamshire, Cambridgeshire, Essex, Hertfordshire, Kent, Leicestershire, Middlesex, Northumberland, Surrey, and Sussex.

When Mr. Roger Wallace, for the third time, led the way to Sheen, he must have felt that the Automobile Club had ensured itself a triumph. Everything had been fully satisfactory on the two preceding days, and the speeches at the lunch of Friday were particularly encouraging; it only remained to complete the rubber with a third success.

This the Club unquestionably achieved. The same easy run to Sheen House, with displays on every hand of the steering and stopping powers of the cars, the same facile passage through the traffic with such conspicuous adroitness as compared with the horse-drawn turnouts; the same unfeigned astonishment of the County Councillors who were taking their first automobile ride—all these features were repeated anew.

Better than ever, however, was the speaking after lunch. Post-prandial oratory, at night, is not always taken seriously, but there was nothing of the merely complimentary or platitudinarian about this after-luncheon oratory. For the most part it was incisive, logical, irrefutable, and if the County

Councillors had heard nothing but Earl Grey's testimony to the new movement the meeting would not have been in vain. What made his lordship's vigorous harangue so convincing was the obvious sincerity with which he set high store upon a movement to which, he frankly confesses, his personal interests were opposed, but the gathering force of which in common fairness he was unable to gainsay.

Earl Grey said that if all the County Councillors had been steered thither by half as efficient a coachman as he had been that morning they must have been convinced that there was no machine on wheels that was so wonderfully under the control of the driver as the motor-car. Though he did not own a motor-car, and had not been in one more than a dozen times, his common sense told him that there was no safer conveyance. He had joined the Automobile Club because he recognised that the great problem of the day was how to empty the towns of their population. Speedy locomotion was absolutely essential for that object. He was told that there was some idea abroad of legislation which would make it illegal to drive motor-cars at more than ten miles an hour. (Great laughter). All his personal interests were against motor-cars, for he was a breeder of horses, and the fortunate possessor of a shire stallion whose yearlings sold at £500. But he could not conceive anything so harmful to the true interests of this country as such restrictive legislation as would prevent men from going into what was now the sport of motor-car driving. If they made that sport difficult they would be killing an invention which would be in the future a blessing to the working-men of this country. A motor-car in the hands of an experienced driver could go very fast at very much less risk to people who used the roads than he could go in a dog-cart at six miles an hour. It was not a question of pace. Four miles an hour in traffic might be very dangerous; forty miles an hour on the road was a very safe one. Another point in favour of the motor-car was that it did not require a scavenger behind it. The wear and tear of the roads, too, was absolutely nil. He could not conceive any greater friend to the local rate-payer than the motor-car, if its uses were extended. It was a distinct danger to the future of this country that we were so awfully frightened of a new invention. They all loathed the bicycle at first. He had gone through the phase of hatred of the bicycle, and thinking everyone who used it a cad; now he had come to think that a free wheel bicycle was the poetry of motion. As time went on they would become so accustomed to the motor-car that they would regard it as a beautiful object, and be very sorry if they did not meet it when they went out for an afternoon walk. In conclusion, Earl Grey expressed a fervent wish that no restrictive legislation would be enacted against motor-cars.

The Duke of Northumberland said that all the visitors had been impressed with the power an automobilist had over his vehicle. His own belief was that motor-cars would be the great means of locomotion in the future, and that an enormous amount of goods and passenger traffic would be taken from the railways.

Sir Arthur Arnold made an entertaining speech in proposing the toast of the Automobile Club, and recalled an incident of how, when he was a young man, he was endeavouring to secure the introduction of gas into a certain township. A blind man arose and clinched the matter with the dictum, "Let those have lights as wants 'em;" and the proposal was rejected by an overwhelming majority. Sir Arthur predicted a great future for the automobile, and said that the London County Council was keenly interested in the subject and would do nothing to hamper the movement.

Mr. Roger Wallace was received with three cheers as he rose to respond. Once more he urged the importance of control and the efficiency of the driver, as compared with the unimportance of mere speed.

After a few words from Mr. Johnstone, the chairman of the Essex County Council, the speaking was closed, and after the "Biograph" had done its worst on the cars outside, the visitors returned to town. So ended a noteworthy and successful demonstration, a unique example of the triumph of a good cause over prejudice and useless opposition.

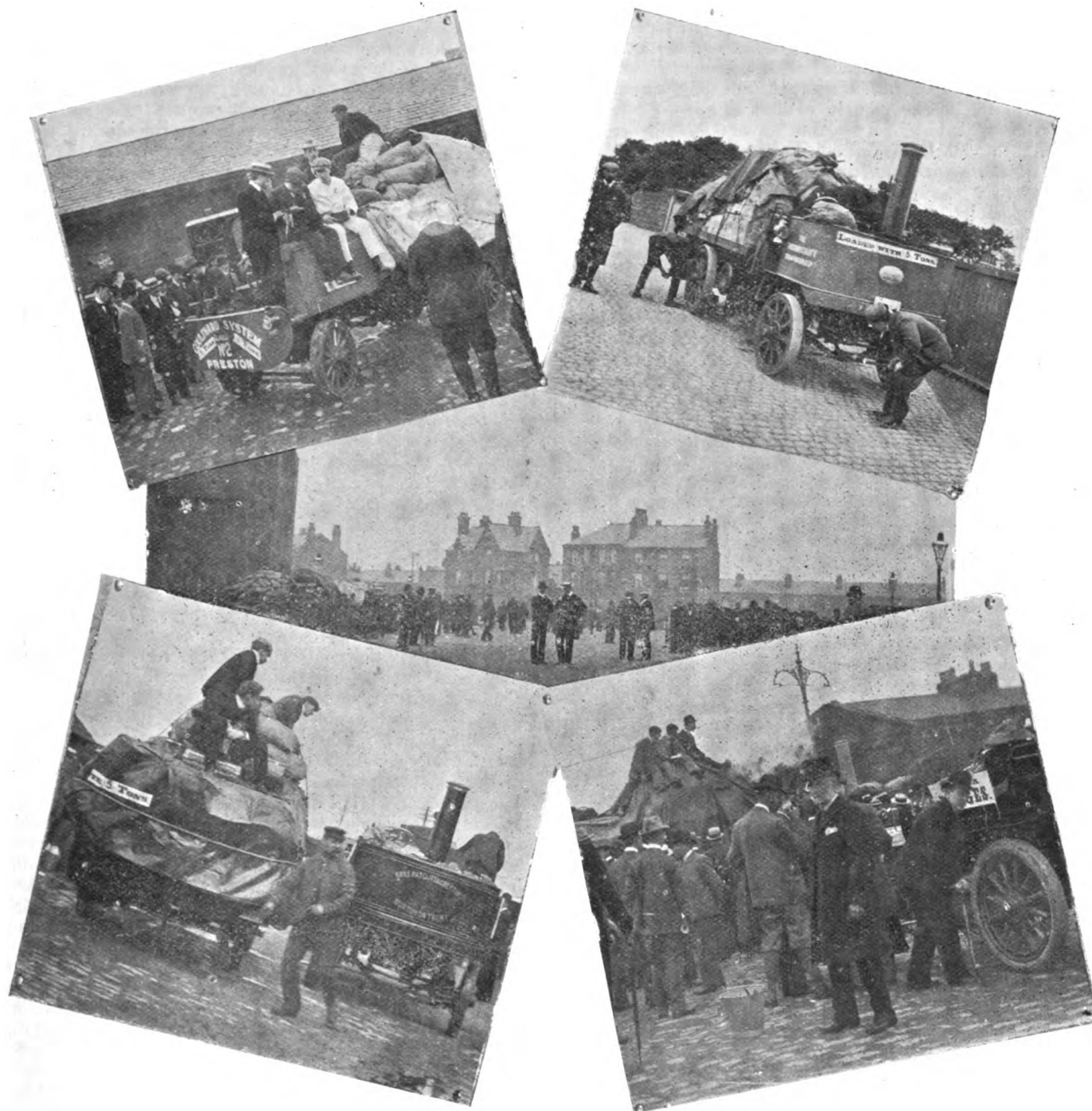
FLANEUR.

THE LIVERPOOL HEAVY MOTOR-VEHICLE TRIALS.

LAST week we brought our account of the heavy motor-vehicle trials organised by the Liverpool Self-Propelled Traffic Association up to the end of the proceedings on

C1	...	6 0 0	...	...	439	..	...	6 58
D1	...	4 1 24	...	...	338	..	...	5 46
D2	...	6 1 14	...	...	389	..	...	7 43
D3	...		...	Not arrived at 8.45 p.m.				
D4	...	7 2 14	...	...	415	..	...	5 39

Fine weather favoured the proceedings on Thursday, the 6th, when the destination was Blackburn, *via* Wigan and Chorley,



SNAP-SHOTS ON THE JOURNEY FROM LIVERPOOL TO MANCHESTER.

Wednesday, the 5th inst. The official returns of the day's run are appended:—

WEDNESDAY, JUNE 5TH.					
No. of car.	Coke used. cwt. qr. lbs.	Motor Spirit used. galls.	Water used.	Running Time. h. m.	
A1	...	53 (tank leaked)	In cooler ¼ pt.	6 35	
A2	...	31	In cooler ¼ pt.	5 47	
B1	4 2 4	...	277 gallons	7 14	

a distance of forty-one miles. The loads assigned to the competing vehicles were as follows:—

- A1. 1½ tons (50 cases) canned pears from R. Crook for Wm. Hindle, Blackburn.
- A2. 1½ tons salmon from Simpson, Roberts and Co., of Liverpool, for H. F. Whalley, of Blackburn.
- B1. 4 tons grain for Richard Shackleton and Son, Blackburn.
- C1. 6 tons (185 cases) canned goods from Richard B. Green and Co., Liverpool, for Wm. Hindle.
- D1. 4 tons grain for Richard Shackleton and Son.

THE GENERAL AUTOMOBILE AGENCY, D. Farman, Man., Garage open day and night, all cars in stock, 100-104, Long Acre, W.C.

- D2. 4½ tons grain for Appleby and Sons.
 D3. 4 tons grain for Appleby and Sons.
 D4. 4½ tons grain for Appleby and Sons.

The start at George's Dock, Liverpool, was timed for 9.15 a.m., but it was ten o'clock ere all the vehicles got away. The route, after getting beyond the city boundaries at Old Swan, lay through Knotty Ash, and the level, well cultivated, and pleasant agricultural district comprising Knowsley estate. The roads traversed after passing the latter were largely of the rolling prairie order. The way in which the hills were for the most part negotiated by the loaded wagons was an agreeable contrast to what would have been experienced with horse-drawn wagons. Wigan was safely reached a little after schedule time, the vehicles drawing up in the market square to allow of a stop for lunch, the visitors being entertained by the Mayor and Mayoress of Wigan. At the luncheon Colonel Farrington proposed the prosperity of the Association, coupled with the names of the officers. The toast was responded to by Mr. Henry H. West, one of the Judges.

It was about three o'clock that a start was made for Chorley, where the Mayor was waiting to receive the party. The gradients are particularly severe between Wigan and Blackburn, and Botany Brow, rising out of Chorley, is an exceptionally stiff climb. Most of the passenger cars halted at the top of the hill, to see how the steam wagons took it. If their pace was sometimes slow, the wagons, however, kept moving. On reaching Blackburn we found the entire population had turned out to welcome us. The vehicles were driven to the Artillery Barracks, where they were stored for the night.

Appended is a table giving the official return for the day:—

No. of car.	Coke used. cwt. qr. lbs.	Motor Spirit used. galls.	Water used.	Running Time. h. m.
A1	1 pt. for cooler	7 49
A2	1 pt. for cooler	5 54
B1	283 gallons	7 3
C1	532 "	7 43
D1	347 "	7 5
D2	(see note)	...	...	...
D3	394 "	9 28
D4	398 "	6 13

The Coulthard vehicle D2, which carried 4½ tons of wheat, broke one of the axle springs, due, it was said, to the shifting of the load over to one side. The breakage was, however, repaired and, as will be seen below, the vehicle took part in the concluding run.

Friday witnessed the consummation of the trials. The concluding run was from Blackburn to Liverpool, by way of Preston, Ormskirk, and Rufford. The journey was one of the most successful of the week, the heavy vehicles doing some good performances. The wagons were again laden, the loads carried being:—

- A1. 1 ton 7 cwt. 2 qrs. machinery from Yates and Thompson.
 A2. 1½ tons ditto ditto.
 B1. 4 tons 8 cwt. 2 qrs. flour from H. T. Livesey and Sons.
 C1. 5 tons 3 cwt. machinery from Dickenson and Sons.
 D1. 3 tons 17 cwt. paper from the Star Paper Company.
 D2. 3 tons 4 cwt. 1 qr. 4 lbs. flour from Appleby and Son.
 D3. 3 tons 10 cwt. machinery on account Crossley Brothers, Limited, Manchester.
 D4. 4 tons 5 cwt. 2 qrs. 24 lbs. flour from Appleby and Son.

Blackburn was left about ten o'clock, and the route offered considerable difficulties in the way of hills, both in the first and the last stage of the journey. On leaving Blackburn there was a long and somewhat difficult slope to be encountered, but which the wagons ascended with comparative ease, to the admiration of the onlookers. Further along there was a stretch of some miles for the most part consisting of gentle declivity. Brockholes-brow, *alias* the Halfpenny Bridge-brow, however, presented the longest, and at the same time the steepest climb of the day. Between the motor-vehicles, cyclists, and the general crowd, the long slope was covered almost from top to bottom, and the climb was witnessed with great interest. The grade is given as 1 in 14, but in places it must be 1 in 8 or 9. It served as a good test of hill-climbing for the vehicles, and it is satisfactory to state that they all took the hill in fine style.

At the first stopping place, in the covered market at Preston, the arrival of the vehicles was awaited with very great interest by a vast crowd, and in the Town Hall the party was cordially welcomed by Alderman Pearson in the absence of the Mayor, owing to illness. Mr. Shrapnell Smith warmly expressed the thanks of the Liverpool Self-Propelled Traffic Association for the cordial reception extended to them, and for their co-operation in the movement, by arranging for water supplies, etc. Among voluntaries which joined in the procession at Preston were a self-propelled vehicle from Cox's Milling Company, the Liverpool Corporation's tramway store wagon, and a Coulthard vehicle from the Ramsgate Pure Ice Company.

From Preston on to Rufford there was opportunity for a capital spin on the part of the light cars, the roads being in splendid condition. At many points on the country roads were groups of villagers, who watched the passage of the motor-cars with much interest. At Rufford excellent fare was served at the Hesketh Arms; and after a stoppage of about an hour off went the vehicles to Liverpool, the George's Dock Sheds being reached in good time, the last car arriving by seven o'clock. Appended are the returns for Friday's run:—

No. of car.	Coke used. cwt. qr. lbs.	Motor Spirit used. galls.	Water used.	Running Time. h. m.
A1	...	5½ (tank still leaking slightly)	In cooler ½ pt.	6 28
A2	...	4	In cooler 1 pt.	6 3
B1	4 2 0	...	288 gallons	7 8
C1	7 0 0	...	455 "	7 6
D1	5 2 22	...	355 "	6 43
D2	6 3 9	...	473 "	7 30
D3	5 3 0	...	414 "	9 8
D4	6 1 4	...	291 "	6 16

The Trials have gone a long way to demonstrate the point which the Association wish to be borne in mind, viz., that the motor wagon is a practical and commercial success. Goods have been collected from the Liverpool docks, the vehicles carrying them have been subjected to a severe ordeal of hill-climbing, which proved that exceptionally steep gradients have no terrors for them, as well as showing the capability to arrest their progress in the descent. Pursuing the test in another direction they next hauled their loads at a creditable rate of speed distances of thirty or forty miles a day, at the end of which they delivered them at the places to which they were consigned, safe and sound. Their performances have, indeed, astonished many who have hitherto regarded them as the reverse of useful, non-economical, and poor substitutes for horses. The trials cannot fail to have made a deep impression on the owners of the many large industrial undertakings in Lancashire, and the Liverpool Self-Propelled Traffic Association has every reason to be satisfied with the result. To the officials, one and all, great praise is due for the way in which the arrangements have been carried through. We may add that Pratt's motor-spirit was used by the two competing petrol lorries and the cars which followed the Trials. The Judges have awarded a gold medal and diploma of merit to vehicles A1 and A2, Messrs. George F. Milnes and Co., Limited; B1, the Lancashire Steam Motor Company, Leyland; and C1, the Thornycroft Steam Wagon Company, Limited, Basingstoke. The awards in Class D will be delayed for about three weeks.

THE Automobile Street Sweeper Company has been organised at Portland, Me., U.S.A., for the purpose of cleaning streets, etc.

At the last meeting of the Inkberrow Parish Council, Mr. Lowe called attention to the dangerous speed indulged in by drivers of motor-cars, and considered that something should be done to moderate the speed. The clerk was directed to give attention to the matter.

SOME alarm was caused in Cross Cheaping, Coventry, last week, by a motor-car skidding upon the tram line. Swerving on one side, the car knocked down a commercial traveller, Mr. Ernest Troughton, who had his ankle sprained, and was removed to the Coventry and Warwickshire Hospital.

A RUN ACROSS FRANCE ON A RACER.

By A. R. SENNETT.

(Continued from page 246.)

DOGS, no matter what colour, are *bêtes noires* to the racer, and the question is often asked, "What is the best thing to do when one sees that the dog is bent upon either opposing your progress or on measuring his pace with your carriage?" Our reply is, that usually shouting is worse than useless, but that the most efficacious thing is to gesticulate vigorously, as if throwing a missile at the canine competitor. He will then generally deviate to one or the other side of the road, and possibly to reflect that he would quickly have been out of the running as well as out of this world had he essayed to remain in front. Continental cycle tourists, as we can testify from considerable experience, were much inconvenienced from the same cause, and it is found that shouting, and even the business-like whip carried upon the cycle in Austria, were of little effect until the pyrotechnist came to the cyclist's aid with those ingenious little fireworks which made him the terror of the dog instead of the dog the terror of him.

From a high-speed run much might be learned in the domain of zoology. Why, for example, dogs should have a predilection for sleeping in the middle of the road and a tantalisingly sluggish addiction to remove themselves from rapidly approaching sudden death, the ordinary *chauffeur* understands not. Animal idiosyncrasies are clearly displayed to the motorist; the militant audacity of the dog, the painfully nervous tension of the horse, the delicious contempt and imperturbability of the ass, the crass stupidity of the omnipresent fowl or cockerel, who invariably has an appointment to keep on the opposite side of the road at the moment when your car is within five yards of him, with the result that a catherine-wheel of feathers is seen to gyrate over *poulet à l'automobile*. The "stupid" goose, who is not so stupid after all, seeing that he merely stands by the roadside, temporarily converting his curved neck into a straight red-tipped pipe, from which he belches forth hissing defiance as we pass. In this he reads a lesson to the more stupid duck, whose characteristic seems to be her power of waddling clear of danger without hurrying. We remember an old Cornish post-driver offering to present us with a sovereign if he drove over a duck, "For, said he, 'I have driven for thirty years and have not yet succeeded.'" The stupidity of animals, however, is not to be compared with that of many bipeds in charge of quadrupeds. The horse, though such a noble creature, is at the same time a dependent creature: he can be made to do almost anything by sympathetic companionship. Every motor-driver knows that horses seldom misbehave when in company with their four-footed *confères*. For this reason, a gentle word and friendly caress from his master will in ninety-nine cases out of a hundred suffice to dispel from the animal's mind all thought of coming danger. The fact that his master stands by him and speaks to him contents him. But does the master usually treat his horse in this common-sense manner? Not according to our experience! The willing animal is left absolutely unattended and often with his bit removed—a practice which we feel should be made punishable by law—the horseless carriage is heard approaching, his master rushes out of the taproom alongside his horse, to whom he speaks never a word, and clutches violently at the animal's head with an abruptness which would startle any human body, much less a horse. Should the driver be in a cart he usually finds himself with more than half a yard of "slack" in his reins, enabling him the more effectively to "job" his horse's mouth in gathering them up taut—and his horse almost on to his haunches, and, having done this, he finds his hands one on either side of his head and behind his ears, and therefore in the worst possible position to control his horse, who by that time is trying to do the most sensible thing that a horse can do—viz., to turn completely round and run away from the oncoming danger.

Our experience, indeed, is that the annoyances to *chauffeurs* arise more from the ill behaviour of man than of beast. One of the most annoying and indeed most dangerous malpractices of which the waggoner is guilty, and which becomes more pro-

nounced as one gets down towards the somnolent south, is that of sleeping in his wagon behind his slowly plodding teams. If he be going in your direction you are stopped by his ponderous caravansary, and waste much time and lung effort in waking him up. Whereas if he, or rather his team, meet you, you are forced to take up a position on the roadside, and wait the passing of a sleeping mass of negligence drawn by duty-respecting quadrupeds, whose conscientious behaviour should put him to the blush, even though they are unable to rate him in words. Another very dangerous practice on the part of the rural carter is that of rigging up a seat constructed of a couple of poles, and a kind of canvas hammock projecting two or three feet from the side of the cart, and which is not noticeable until one is quite close up to the slowly lumbering conveyance.

For such reasons, amongst others, automobile travelling by night is found to be very enjoyable, and this has been rendered practicable by the recent invention of acetylene gas. In using this, however, the correct design of the projector is a matter of great importance. It is not everything to have a very powerful light, indeed this may be a positive disadvantage. What is wanted is a *phare* constructed upon the *dioptric* principle, and so arranged as to prevent the road being too brilliantly illuminated just in front of the carriage, for the reflected glare from the white road seriously interferes with clear discernment far ahead, namely, at that point where the projector should focus its beams if one is to travel at a good speed.

The automobile of to-day provides an effective means of high speed, common road transport. It is no longer a toy and should no longer be considered as an entity to be utilized as an exhilarating pastime alone. For in addition to this it is ready for efficient service in peace or in war, in pleasurable personal transport, in the despatch of mails, and in the expeditious forwarding of merchandise; nevertheless, the next year or two will, without doubt, bring material developments. Wherein these developments will evince themselves is matter open to discussion. There can be no doubt, however, that where improvement is most necessary is in the tires and in the gearing. Very material improvement has been made in high-speed internal combustion engines, but little that is laudatory is to be chronicled in regard to the *engrenage*. It is certainly disheartening to the builder of high-class motors to feel that not more than fifty or sixty per cent. of the power of his motor ever reaches the road wheels. The system of step by step speeds controlled by the engagement of spur gearing and its release by a formidable clutch is, as a French manufacturer put it, *brusque et brutale*. Obviously what is wanted is a gear that will at all times be in mesh and yet be capable of an indefinite variation in its ratio from zero to the maximum speed of the vehicle.

(To be continued.)

THE Wandsworth Borough Council is making experiments with a view to transforming the dust carts into motor-vehicles.

A MOTOR-LORRY is being experimented with by Messrs. M'Farlane, Lang, and Co., the well-known Scottish biscuit manufacturers, with, we understand, most satisfactory results.

ONE of the first entries for the Strasburg-Colmar-Strasburg race, which is to be run off on Sunday next, under the auspices of the Alsace-Lorraine Automobile Club, was that of a lady—Madame Clemence Hirtzlin, of Strasburg.

MESSRS. MONTAGUE HAUNT AND Co., of 146, Clerkenwell Road, E.C., and Sparkbrook, Birmingham, have sent us a copy of their season's catalogue of motor-cars, cycles, accessories, tools, and electrical fittings. It is an exhaustive and well-illustrated work which should appeal to the motor-car builder. Everything in the way of parts, fittings, or accessories, is quoted in an all but endless list of sizes, with prices graduating to match. Three complete motor-cars of well-known pattern and modest price are also in evidence. Accumulators, batteries, coils, ampèremeters, voltmeters, and electrical sundries appear to be a strong feature. Another point of interest is sets of cells, small but powerful. Repairs and recharging are also quoted for.

THE GENERAL AUTOMOBILE AGENCY, D. Farman, Man., Garage open day and night, all cars in stock, 100-104, Long Acre, W.C.

CORRESPONDENCE.

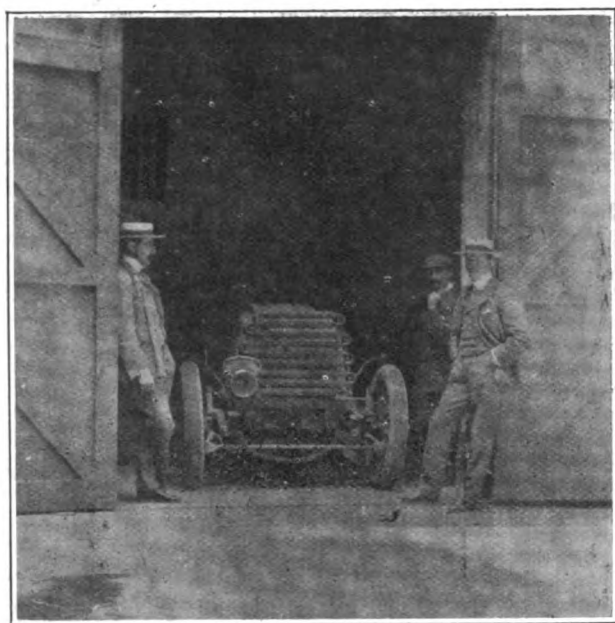
THE 70 H.P. NAPIER CAR IN FRANCE.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR—As there seems to be a great deal of uncertainty as to why I discontinued the Paris-Bordeaux Race soon after Tours, I think it may be interesting to your readers to let them know the reason, and also deal with a few other points which I think are of interest to all English automobilists.

The withdrawal from the race was caused through the clutch wearing to a greater extent than any allowance had been made for, with the result that the lever for pulling same out rested up against a brake lever, and kept the cone from properly engaging, the consequence being that the engine went round, but did not drive the car.

I notice that the makers of the clutch have thought it necessary to write to the papers on the subject. They are quite right in saying that Mr. Napier approves of the clutch, and it is



THE 70 H.P. NAPIER CAR IN ITS GARAGE IN PARIS, WITH MESSRS. EDGE, JARROTT, AND H. DUCROS, JUN.

not only approved, but we have to thank them very much indeed for stepping into the breach at the last moment, as they did, to supply us with a clutch which did its work very excellently in nearly every respect. This trouble that was caused with it will very quickly be remedied and prevented for the future. The main feature of the clutch was successful, but at the same time it was an unfortunate fact that it was the clutch that caused the withdrawal from the race. In no way do I suggest blaming the clutch, as I believe it is one that for these high-powered carriages will have a very successful future.

There seems to be a great deal of misconception, so far as writers in the daily press are concerned, wherein some of them, after dealing with the result of the race, point out that this proves that French automobiles are far ahead of English ones, and that we have a great deal to learn. No doubt there is quite a considerable amount of truth in this so far as racing vehicles are concerned, and it is for this reason that Mr. Napier and I will take racing vehicles to France to compete in the various races. We feel that it is our duty towards our customers to keep ourselves thoroughly informed as to everything that is going on on the Continent, and by actual competition with the very latest products of the French factories get to thoroughly understand our own strength and our own weaknesses, and I am sure on this point every one must agree with me.

Referring to your correspondent's report, I am afraid he has not truly turned to account everything that he saw, as he assumes that because the Napier car weighs 33 cwt. it is necessarily slower than any of the French cars. If he will make it his business to find out the exact weight of Levegh's car and Fournier's car, he will find that the weight carried by each h.p. is possibly even less on the Napier than on the winning car, and if he will them make inquiries in France he will find that on several parts of the road many competitors were timed over one or two kilos. distances, and that wherever this timing was carried out, the Napier car actually did one or two kilos. per hour faster than any car in the race. Mr. Napier's and my tests in France showed us that so far as sheer speed was concerned we seem to be a little bit faster than anything hitherto produced, and I hope at a very early date to very thoroughly demonstrate this publicly. When, however, it came to racing over a long journey, some little points which, unfortunately, time had not allowed us to find out, developed themselves, which caused us delays, three of which are mentioned below.

At Versailles we had to wait some time on the out-word control, being there before our time, and with a wish to prevent the engine getting hotter than necessary I cut out two of the cylinders, but unfortunately had the engine running too slowly, and stopped it. These big engines are of course somewhat difficult to start, and before we had got them started we lost no less than twelve minutes. The reason for this trouble in starting I found, after the stoppage in the race, was an accumulation of dust in my valves. Soon after leaving Chartres some obstacle from the road in travelling fast carried away the belt which drove my pump. This took us eighteen minutes to put right, having to fit a new belt and pump wheel. At Cloyes, again, when waiting at the control, and running the engines slowly, I was unfortunate enough to stop again, and lost eight minutes in starting.

These troubles you will understand were chiefly the result of driving a new car, with which I had had practically no experience, and I may say that Mr. Napier was very much averse to running the car at all, as he did not see how it could possibly do itself justice at such short notice; but personally I felt that there was a great deal of experience to be gained, that I must gain this experience as soon as possible, and that success or failure would be quite understood by any thoughtful person, and that it would be recognised that one could not reasonably expect success over a long journey with an untried vehicle.

The result, however, showed us that a number of little details could be improved, and I hope all of them will be carried out in time for next Saturday's hill climb at Tilburstow Hill, when those interested in watching the struggle Mr. Napier and I are making to produce as successful a racing English car as we have a touring one, to compete with the world, will treat us in exactly the same way as the British public treat the builders of the yacht cup challenger. One must remember that in these vehicles the margin of safety is cut down to an almost vanishing degree for every part. If you will take the history of the French races you will find that in nearly every case, unless every French manufacturer ran a fairly large fleet of vehicles, he would not have much continuity of success with only one in each race. This unfortunately we are unable to do at present, and we have therefore got to do the best we can with one or two in each race.

Yours truly,

S. F. EDGE.

WET AND DRY BATTERIES.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—We have read with interest the correspondence contained in your issues of the 1st and 8th inst., with regard to wet and dry batteries. We have found with accumulators that certainly at the start there is an inflated amperage, and we have known on many occasions that through the jarring and jaunting of the car the plates have been affected, and the accumulators have given out very quickly. Again, when the accumulators are

being re-charged this operation is often done too quickly, and there is no satisfaction to the driver.

With regard to the Meyra dry cells to which your correspondent C. P. Cobb refers, we have found that on every occasion that we have supplied these they have given entire satisfaction, and we might add that we have sold several thousand sets ourselves. We think he is somewhat wrong with regard to the price, seeing that they are only listed at 15s., and we believe the Meyra Company allow a rebate for old cells of their manufacture, if returned to them in good condition.—Yours faithfully,
B. BRIDGEWATER AND CO.

THE PARIS-BERLIN RACE.

TO THE EDITOR OF *The Motor-Car Journal*.

DEAR SIR,—As I see there are a good many entries for the big international race, Paris-Berlin, it might be, perhaps, interesting to a number of your readers to bring before them a few words of timely warning upon the state of the roads on which the race is to be run, and which route I myself, as a starter in this race, have just gone over in a Durkopp car.

There is no doubt that every driver in an automobile race, and who has been over the route before, will find that he has a great advantage over his opponents who have not taken this precaution. The more so in the case of the Paris-Berlin, as this journey through three countries, with their totally different roads, will require on the part of all drivers the utmost discretion in not over-rating the staying powers of their cars. They should remember the old saying, "Festina lente," however paradoxical this might sound as applied to automobile racing.

Those automobilists who have seen the wonderful *Belles Routes de France* will be bitterly disappointed when they make acquaintance with miles and miles of villainous Belgian *pave*, where, to put it mildly, one is almost shaken off one's seat, and which also means an enormous strain on the springs of one's car.

After passing the Belgian frontier, the road surface is slightly better from Malingen to Aix-la-Chapelle, but any person attempting on this road, with its unexpected zig-zag turnings, any higher speed than 50 kilometres per hour would throw away any chance he may have had of winning the race.

From Aix-la-Chapelle to Hanover the roads, with the exception of the neighbourhood of the Ruhrgebiet, is fairly flat, although, again, almost half of this road is *pave*, but certainly of rather a better class than the Belgian.

There is a kind of track on either side of this *pave* which looks rather tempting to the *chauffeur*, but this nice-looking road is deceptive, and, as often in life, the glittering surface proves otherwise than golden; firstly, as it leaves only a few inches clearance of the wheel track of a racing automobile, it does not recommend itself to high speed; and, secondly, there are little cross channels from time to time (most likely to drain the water off the *pave*) which, although scarcely perceptible in approaching them, are deep enough to almost throw the steering out of one's hands, and deviate the car into the ditch. Therefore, take my advice, choosing out of two evils the lesser: steer straight on the fairly good *pave* in the middle. I have always had to return to this course myself, after having lost much valuable time in attempting to reach higher speeds on the side tracks.

From Hanover to Berlin, which part of the route, by the way, is the least interesting as far as scenery goes, is quite level, and especially on the latter part of this journey. The bugbear of the race will be the tires. Here the famous "Markische" sand, intermixed with sharp flints, will play havoc with pneumatics, and I feel sure that it is an absolute necessity to put on a fresh set of tires at Hanover, as no one can expect that pneumatics that have sustained the severe strain of over 600 miles hard racing will stand the terrors of the sand of the Mark Brandenburg, the famous sandbox of the old Holy Roman Empire.—Yours truly,

ED. E. LEHWESS.

WINDING UP.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—In reply to "Work Shirker," I would advise him to communicate with the "Creese" Self Starter Company. I have had some experience with this firm's inventions, and find that it is never necessary to have recourse to the handle for starting my car, a 6 h.p. Daimler.—Yours truly,
SHIFTER.

MR. A. E. J. STEELE writes:—"I note your paragraph *re* A.C.G.B.I. Motor-Cycle Race meeting; you have got the Cup holders mixed up. The *Autocar* Cup holder should be Machin (F. F. Wellington); the *Motor-Car Journal* Cup (five miles) is held by, and in the possession of myself, and I have had no intimation that it will be a handicap, etc. The *Automotor* Cup is held by Buck (Motor Manufacturing Company).

MR. C. JARROTT writes:—"I notice that in a paragraph in your last issue I am stated to be competing in the Paris-Berlin race on a motor-cycle. Apparently some mistake has been made in this respect, as I am not riding a motor-cycle, but am driving one of the new 40 h.p. Panhard cars (Paris-Berlin type). The car is the property of Mr. Harvey du Cros, on whose behalf I am taking it through the race.

PRESS VIEWS ON FRENCH RACES.

RARELY has a race in another country excited so much attention in the English press as did the motor-car contest between Paris and Bordeaux, in which M. Fournier covered the distance of 350 miles in eight hours and forty-four minutes. On the whole, the views of our contemporaries were extremely kind, and although we have noticed an occasional growl, the general tendency of the criticisms on that event has been very fair. Some extracts will be of interest.

"In France," says the *Liverpool Mercury*, "the benevolence of the law and local conditions favour rapid travelling, and automobilists may amuse themselves and others by giving demonstrations of the speed possible of attainment with the new vehicle; but these object lessons are of no profit to residents of the United Kingdom, who are forbidden to run at a faster rate than twelve miles an hour."

The *York Daily Herald* regards the speed as remarkable, and adds that "there was an entire absence of accidents, and the fact that such a race was run in safety ought to reconcile people in this country to a greater rate of speed than that which is at present permitted."

Ireland is evidently prepared to welcome the automobile, for the *Dublin Daily Express* declares that the race "has established the claim of the motor-car to be regarded as the vehicle of the future," and adds, "the question that we have to consider is, What are we doing to help automobilism? The answer is to be found in the state of our country roads, and in the absurd restrictions which are due to the idea of the genus parish councillor that the automobile is an *edition de luxe* of the traction-engine. We ought, at least, to do something practical to encourage automobilism in this country."

Commenting on the race, the *Manchester Guardian* truly remarks, "France has chosen to encourage the new industry of motor-car engineering by allowing self-propelled vehicles to run at high speeds on the public highways, whilst England has discouraged it, at first by subjecting motor-cars to regulations which were framed for the government of traction engines, and even now by limiting the paces of motor-cars to those of a fast-trotting cob. We have succeeded in keeping down the 'motor-car nuisance,' as we are pleased to call it; France has sacrificed something that we cherish, but has gained an undisputed pre-eminence in a craft which bids fair to become one of the most important and profitable branches of mechanical engineering."

"Facts like these," observes the *Globe*, in chronicling the result, "ought to make our local authorities reflect upon the harshness of the regulations affecting speed in this country, by which one of the most promising enterprises of the new century is being stifled."

HERE AND THERE.



TO-DAY (Saturday), the Manchester Automobile Club will hold a run to Nantwich.

ON Saturday, the 22nd inst., the Automobile Club will have a run to Henley, starting at 2.30 p.m.

THERE is some talk of a company being formed to establish a motor-car service between Hill Top and Loscoe, Derbyshire.

WE hear that the Milnes petrol lorry, A1 of the trials last week, is being prepared by the Liverpool Corporation as a high-speed water-van.

WINDSOR Town Council has licensed several motor-cars which are to convey visitors and townspeople to places of interest in the neighbourhood.

MESSRS. LONSDALE, official repairers to De Dion-Bouton, Limited, have removed to new premises, at 41, Waterloo Street, Western Road, Brighton.

THE motor-brougham with a uniformed driver on the box is growing in favour. The Baron and Baroness de Meyer and Monsieur and Madame Von André are amongst the latest who have adopted it.

THE official report for 1900 of the Controller-General of Patents, Designs, and Trade Marks shows a decline in patents relating to cycles, but an increase in the matter of oil engines for use with motor-cars.

THE Empire Roller Bearings Company, Limited, has been registered with a capital of £10,000 to adopt an agreement with the Cooper Steam Digger Company, Limited, and T. Cooper, and to carry on the business of manufacturers of roller and other bearings, etc.

A MOTOR-CAR proceeding down Bishopsgate the other day came into collision with the law, as represented by a police-van. The contact was so violent that the driver of the motor-car was shot out of his vehicle against a lamp-post, and was removed to St. Bartholomew's Hospital.

THE motor-bus which has recently started running in and about Larne is the envy of many a less fortunate Irish district, where railway service is not too convenient. A farmer writing from Crumlin draws attention to the good reception which would certainly greet such a vehicle if run between that place and Lisburn.

MESSRS. BREWER AND SON, Patent Agents, of 33, Chancery Lane, are issuing an index of specifications of patents connected with motor-cars taken out in the United States between the years 1860 and 1900. The work, which is very complete, is published at 7s. 6d., and will be brought up-to-date from time to time. To all interested in patents, as users or as patentees, the list should be of service.

PRIORY MOTOR, LIMITED, has been registered, with a capital of £5,000, to adopt agreements with Arthur Hallett and Co., Limited, with C. L. Loveridge, with the Crawford Gear Company, Limited, and with the Hamilton Motor Patents Syndicate, to carry on the business of engineers, makers and repairers of motors, motor-carriages, cycles, etc. The registered office is at 18, Hertford Street, Coventry.

NOTTINGHAM motorists must look out for squalls. The Workson District Council has been discussing them and their ways, and has estimated the speed at which they negotiate the corners of that town at anything from sixteen to twenty miles an hour. The attention of the police has been called to the matter, and it is hardly likely that the harvest of fines to be reaped from such a source will continue to be ignored.

THE Eagle Engineering and Motor Company, Limited, has been registered, with a capital of £6,000, to adopt an agreement between R. Jackson, of the one part, and J. Kenworthy and J. B. Bindloss, jun. (for the company), of the other part, and to carry on the business of engineers, motor-car and cycle makers. The subscribers are R. Jackson (Mayor's Road, Altrincham),

J. Kenworthy, J. B. Bindloss, J. Brooks, J. W. Hurrell, F. C. Catterall, and J. Rumney.

MESSRS. BAINBRIDGE AND COMPANY, of Newcastle-on-Tyne, are making an experiment in the carrying of the somewhat lighter class of goods in which they deal. They have just imported from Paris an 8 h.p. Panhard motor-car, which they are now using for the purpose of carrying goods ordered by customers to their destination, and if the experiment proves successful they will probably extend the principle to the larger part of their carrying work.

WE understand that the business of the London Motor Company, Ltd., has been taken over by Mr. W. M. Hodges, who will carry it on in future. The premises at Tottenham Street, Tottenham Court Road, W.C., are extensive, and well adapted for garage purposes, and arrangements are being made whereby all classes of repairs to motor-cars can be carried out. Mr. Hodges has had a long connection with the motor-trade, and knows the requirements of motorists thoroughly. We wish him all success in his new venture.

MILLINGTON, EVERITT, AND CO., LIMITED, is the name of a company which has been registered, with a capital of £3,000, to carry on the business of motor-carriage manufacturers, cycle and velocipede builders, etc., and in particular to acquire from F. Millington, of 16, Market Hill, Cambridge, the benefit of certain existing inventions relating to electric motors, starting resistance, and ampère meter, and all patents connected therewith and any improvements thereon. The registered office is at 20, Regent Street, Cambridge.

A FANCY dress carnival, organised by cycling clubs affiliated to the Essex and Middlesex Cycling Union, in aid of the funds of various hospitals, took place last Saturday. This year eighteen clubs and 502 riders took part in the procession, which, after forming in the field adjoining the Eagle Hotel, Snaresbrook, proceeded via High Street, Wanstead, Cambridge Park, Leytonstone, into Woodford Road, again passing the Eagle, Woodford Green, Woodford Wells, and Rangers Road, to Chingford. A notable feature was the motor vehicles which headed the procession. Mr. W. T. Pearce, on a motor-tricycle, was in command, followed by several decorated motor-cars.

A CYCLE and motor race meeting was held on the track at the Glasgow International Exhibition grounds on Wednesday last week, the events including a two-miles motor-bicycle race and a five miles motor-car match between a Darracq and an Argyll car. In the motor bicycle race the result was—1, R. M'Ewan, Ayer (Werner); 2, H. Cantrell, Coventry (Excelsior). Time, 4m. 33s. Only three started, and the other competitor retired early, leaving the race to the placed men. M'Ewan led the whole journey and won by thirty yards, Cantrell giving up in the last lap when he found it impossible to pass his opponent. In the motor-car match, W. M'Lean on a Darracq car beat A. Govan on an Argyll car.

THE other day we had an opportunity of inspecting a new petroleum-spirit motor which has lately been completed by the Eclipse Engineering and Motor Company, of 255, Earlsfield-road, Wandsworth, S.W. The new engine, which is very compact, comprises two water-jacketed cylinders, the jackets and cylinders being cast in a single piece. The cylinders are 3½ in. diameter by 3½ in. stroke, and at a speed of 1800 revolutions per minute the engine will develop 6 h.p. The ordinary practice is departed from in that the inlet valves as well as the exhaust valves are operated mechanically; they are all so disposed as to be readily removed when necessary. Electrical ignition is used to fire the charge, one coil only being employed for the two sparking plugs. A sensitive form of governor is fitted, as also are balanced cranks on the engine shaft. The flywheel is outside the crank chamber, the lower half of the latter being detachable. The engine weighs complete about 1 cwt., and measures about 18 in. by 12 in. by 10½ in. The Eclipse Company are also about to build a new light car to their own designs, which include several new features, to which we hope to refer later on.

CONTINENTAL NOTES.

BY AUTOMAN.

In the Namur-Bastogne-Namur race, 220 miles, held on the 3rd inst., under the auspices of the A.C.B., the results were as follows:—

1st Class: Cars of 6 to 10 h.p., and at least two passengers.—(1) Roland, on an 8 h.p. Gobron-Brillié, in 4 hr. 25 min.; (2) Conrard, on an 8 h.p. Gobron-Brillié, in 4 hr. 45 min.; (3) Dernier, on an 8 h.p. Gobron-Brillié, in 4 hr. 50 min.; (4) Pirmez, on a 6 h.p. Delahaye, in 6 hr. 53 min.

2nd Class: 10 h.p. or over.—(1) Guders, on a 12 h.p. Pipe, in 4 hr. 37 min.; (2) De T'Serclaes, on a 12 h.p. Germain, in 5 hr. 28 min.; (3) Coppée, on a 12 h.p. Germain, in 5 hr. 53 min.

3rd Class.—(1) Hautvast, on a 6 h.p. Vivinus, in 6 hr. 18 min.; (2) Martiny, on a 4½ h.p. Rhenane, in 6 hr. 49 min.; (3) De Smedt, on a 4½ h.p. De Dion, in 7 hr. 2 min.; (4) Francotte, on a 5 h.p. Duryea, in 7 hr. 44 min.; (5) Joostens, on a 5 h.p. Peugeot, in 7 hr. 54 min.

THE A.C.F. at its last meeting had to deal with several complaints in connection with the Paris-Bordeaux race. In the first place a complaint was lodged against Fournier for refusing to obey the orders of the Control on leaving Chataudun. Fournier was fined 20 francs. The next complaint was against a certain M. Varlet, who although not entered for the race, placed a large number ten on his car and got controlled at various towns along the road. M. Varlet apologised for his conduct to the Club. Several complaints were made with reference to the exhaust outlets of various cars, which were placed in such a position as to make it almost impossible for another car to pass them on account of the direction in which the dust was driven. It was decided that in future an examination of the exhaust box of every car should be made, and that no car with this defect should be allowed to compete.

In Austria there is to be accomplished an adaptation of the petrol automotor to railway service, which is at once of a novel and interesting description. The Minister of Railways has ordered from the firm of Bierenz and Co. a third-class railway carriage to carry thirty-two passengers, and furnished with a four-cylinder Daimler petrol motor of 30 h.p. This car is intended to be used on short branch lines where there is not much traffic. It is to attain a speed of twenty-five miles per hour, and to carry petrol enough for ten hours' running.

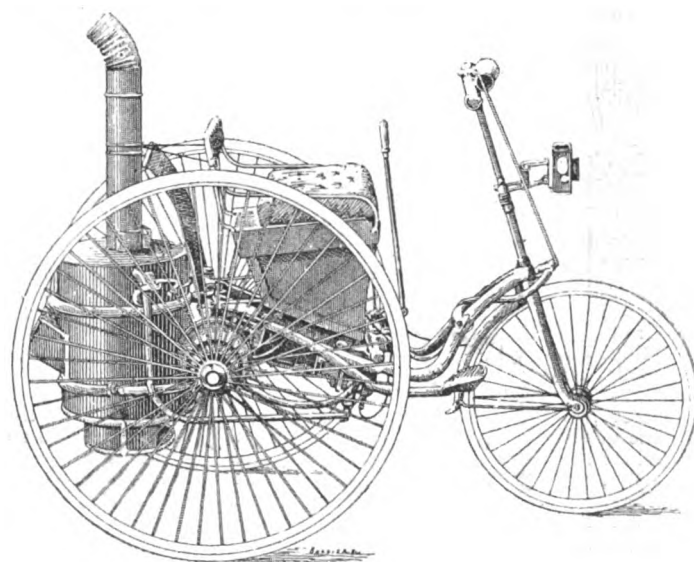
THE following is the official classification of the Paris-Bordeaux race issued by the A.C.F.:—

No.		h.p.	Average speed, miles per hour.
1.	Fournier ...	28 Mors ...	52.9
2.	M. Farman ...	28 P. and L. ...	49.0
3.	Voigt ...	28 P. and L. ...	45.1
4.	Pinson ...	28 P. and L. ...	42.1
5.	Hachette ...	20 P. and L. ...	41.5
6.	H. Farman ...	28 P. and L. ...	39.4
7.	Hourgières ...	28 Mors ...	37.9
8.	Girardot ...	28 P. and L. ...	36.9
9.	P. de Crawhez ...	28 P. and L. ...	36.5
10.	Lefebvre ...	30 Bolide ...	27.9

THE Paris-Berlin race is attracting the interest of the motor world to an unexpected degree. There are already 154 entries in the racing section, and the list is open until the 26th inst., the eve of the race, on payment of a double entrance fee. There are 59 entries for the tourist section. The special train which was to be organised by the A.C.F. has been abandoned, as there was not a sufficient number of applicants for places. It will, however, be possible for enthusiastic sportsmen to witness the arrival of the cars in all the three laps by taking the 9.25 p.m. train from Paris to Aix-la-Chapelle on June 26th, the 9.54 p.m. train from Aix to Hanover on the 27th, and the twenty-six minutes past

midnight train from Hanover to Berlin on the morning of the 29th. Amongst the prizes offered to the victors will be one from the Emperor of Germany, one from the King of Belgium, one from the President of the French Republic, and one from the Prince of Oldenbourg. The Continental Caoutchouc and Gutta Percha Company is also offering a number of prizes in each section.

THE following history of the first steam tricycle, taken from the account of the lecture given by M. Léon Serpollet in Brussels last month, is so amusing that I feel sure it will interest the readers of the *Journal*, and especially those who have seen and appreciated, as I have, the latest Serpollet steam-car, which passes milestone after milestone at the rate of fifty per hour. The motor of the tricycle had one cylinder and a boiler like a coke stove, with a chimney out of which steam and sometimes thick smoke escaped. M. Serpollet applied for a licence to drive it, and started off to pass his examination as a *chauffeur*. The road was rough and badly paved with uneven sets, and the tricycle bumped and bounded along until it suddenly came to a dead stop—a breakdown. The cause was not difficult to locate; the bumping had loosened the fire bars



THE ORIGINAL SERPOLLET STEAM CAR.

which one by one had dropped out, carrying the fire with them, and leaving the road behind strewn with the smouldering remains. Nothing daunted, M. Serpollet picked up the bars, fixed them in again, relit the fire with the aid of a neighbouring coal merchant, and set off again, arriving only an hour behind time. He got his permit, and I think he deserved it.

A STEAM motor-'bus will shortly be run between Larne and Garrontower, Ireland.

AN Irish contemporary suggests that a service of motor-cars between Rathdrum, Glendalough, and Poulaphouca should pay splendidly during the summer months.

It is stated that M. Fournier, the winner of the Paris Bordeaux race, will probably go to America to compete in the Buffalo to Erie race, which is to be run off in September.

WE regret that, owing to a printer's error, the wrong block was inserted in the Daimler Motor Company's advertisement in our last issue, the illustration given being that of the Daimler 6 h.p. *tonneau*—not the King's Car.

MR. D. H. MORGAN, 22, Clarence Street, Cheltenham, has taken over the business of Messrs. Clark and Morgan, of Gloucester and Cheltenham. His only address is now Clarence Street, Cheltenham, the premises at Gloucester having been closed. Mr. Morgan employs a staff of experienced mechanics, and is competent to undertake any repairs to motor-cars. He also stocks petrol, and all accessories.

THE TILBURSTOW HILL-CLIMBING COMPETITION.

BELOW we publish the complete handicap for the English Motor Clubs' Hill Climbing Contest at Tilburstow Godstone, to-day (Saturday), at four o'clock sharp.

In the first column there are the starts according to the respective classes which are specified. In the second column there is the start of the general handicap for all the entries. Altogether there are forty-six entries, so that, given fine weather, the meet should be a great success.

CLASS 1.—BICYCLES.

No.	Name.	Machine.	H.P.	No. of persons carried.	Handic'p for class.*	Handic'p for total entries.*
1.	Tessier, T. H.	Werner	1½	1	scratch	0 42
2.	Leonard, J.	Do.	1½	1	do.	0 42
3.	Fellows, J. H.	Do.	1½	1	do.	0 42
4.	Bluhm, A.	Bluhm	1	1	0 20	1 20
5.	Lamb, H. J.	Werner	1½	1	0 20	1 2
6.	Westlake, A. T.	Bluhm	1	1	0 20	1 2

CLASS 2.—TRICYCLES UP TO 3 H.P.

7.	Dennis, R.	Speed King	2½	1	0 15	0 35
8.	Parrish, T.	De Dion	2½	1	0 15	0 35
9.	Spencer, T. L.	Motor Manf. Co.	2½	1	0 15	0 35
10.	Attlee, Dr. J.	De Dion	2½	1	0 25	0 45
11.	Jones, Leonard	Clement De Dion	1½	1	0 50	1 10
12.	Flutter, F.	De Dion	2½	1	0 15	0 35
13.	Westfield, W. J.	De Dion	1½	1	0 50	1 10
14.	Moyle, M.	De Dion	3	1	(scratch)	0 20

CLASS 3.—TRICYCLES ABOVE 3 H.P.

15.	Jarrott, C.	De Dion	8	1	scratch	scratch
16.	Maltby T., jun.	De Dion	5	1	0 10	"

CLASS 4.—QUADS UP TO 3½ H.P.

17.	Kennard, Mrs.	De Dion with Whippet Trailer	2½	2	0 25	1 30
18.	Cheel, E. S.	Ariel with Whippet Trailer	2½	2	scratch	1 5

CLASS 5.—LIGHT CARS UP TO 7 H.P.

19.	Crowdy, A. E.	Darracq	6	2	0 40	1 0
20.	Midgley, E.	Gladiator	5½	3	2 30	2 50
21.	Smith, G. H.	Empress	4½	2	2 10	2 30
22.	Fuller, R. H.	Serpollet	5	2	scratch	0 20
23.	Heard, A. W.	Century	5	2	0 10	0 30
24.	Stevens, E. J.	Locomobile	5½	2	scratch	0 20
25.	Ginder, A.	Locomobile	5½	2	scratch	0 20
26.	Letts, W. N.	Locomobile	5½	2	scratch	0 20
27.	Morse, T. J.	Locomobile	5½	2	scratch	0 20
28.	Johnson, H.	Peugeot	5	2	2 10	2 30
29.	Begbie, S. D.	Century	5	2	0 10	0 30
30.	Brown, C. W.	Pieper	3½	2	3 45	4 5
31.	Motor Manufac- turing Co.	Motor Manufac- turing Co.	7	1	0 45	1 5
32.	Auto Carriage Co.	Bardon	5½	4	2 10	2 30
33.	Gregson, C.K.	De Dion	3½	1	3 35	3 55
34.	Hone, S. T.	De Dion	4½	2	2 10	2 30
35.	Munn, W.	De Dion	4½	3	2 20	2 40

CLASS 6.—CARS UP TO 9 H.P.

36.	Motor Manufac- turing Co.	Motor Manufac- turing Co.	9	1	0 15	1 45
37.	Glaadding, J. H.	Napier	9	3	0 45	2 15
38.	Motor-Car Co.	Motor-Car Co.	8½	2	scratch	1 30

CLASS 7.—CARS UP TO 16 H.P.

39.	Jarrott, C.	Panhard	16	1	0 15	0 50
40.	Du Cros, H., junr.	Panhard	16	1	0 15	0 50
41.	Lawson, Jack	Panhard	8	1	0 40	1 15
42.	Egerton, M.	Darracq	12	1	scratch	0 35
43.	Hart, J.	Gobron-Brillie	12	1	0 25	1 0
44.	Jarrott, C.	De Dion (Spider)	10	1	scratch	0 35

CLASS 8.—LARGE CARS ABOVE 16 H.P.

45.	Edge, S. F.	Napier	50	2	scratch	scratch
46.	Mayhew, M.	Panhard	20	1	0 15	0 15
47.	C. Buckner	Mercedes	35	1	scratch	scratch

Competitors pedalling after passing the starting point may render themselves liable to 'cyclists' Union rules.

* The times given are the starts allowed to these vehicles.

A SERIES of manoeuvres with motor-cars is about to be carried out at Chaumont, France, with the object of testing the possibility of this form of locomotion in time of war. The experiments will be conducted in the presence of several generals and military attaches, attended by their respective staffs.

FURIOUS DRIVING CASES.

At Weobley, William Marriott, of St. Owen Street, Hereford, cycle maker, was charged with refusing to stop his motor-car when signalled to by Mr. F. T. Edwards, of Byford, and also by Mr. Francis Evans, of Bredwardine, both in the parish of Bishopstone, on May 15th. He was also charged with travelling at a greater speed than allowed by the regulations. Defendant pleaded not guilty to all the charges, and read a long statement to the Bench. A fine of £2 10s. was imposed in each case of not stopping, and the other charge was dismissed.

At the Knaresborough Petty Sessions William Stone, engineer, of Doncaster, was summoned for furiously driving a motor-car on the York and Harrogate Road, near Knaresborough, on June 2nd. The police alleged that the defendant's car was going at the rate of eighteen or twenty miles an hour. The defendant was fined £5 and costs.

At Nottingham, Henry Belcher, of Beeston, and general manager for Humber's, Limited, was summoned on three charges respecting the furious driving of a motor-car in Beeston on May 16th. He was summoned, in the first place, for being the owner of the car; secondly, for being the driver of the carriage; and for driving a light locomotive along the highway at a greater speed than twelve miles an hour. Defendant pleaded not guilty. Evidence regarding the speed at which the defendant was travelling through the Beeston High Street was given by several tradesmen, and no witness estimated it at less than twenty-five miles an hour. Police-constable Tootle, however, thought that it was not less than sixteen miles per hour. The defendant, after being sworn, stated that he was travelling between eight and ten miles an hour; he could pretty well tell the speed through the position of the levers. The Magistrates retired to consider their verdict, and on their return Mr. Starkey said that they had carefully considered the case, and allowing for the discrepancies of witnesses with regard to speed, the defendant would be fined £5, including costs.

At King's Heath, J. W. Stocks, of Moseley, was summoned for driving a motor-car at an excessive speed on the 16th ult., on the Alcester Road, Moseley. Constable Stanway, on the afternoon of that day, saw the defendant, who is a well-known motorist, in charge of a motor-car, which was travelling at the rate of sixteen or eighteen miles an hour. Other witnesses having deposed to excessive speed, defendant denied that he was driving faster than usual, and said the witnesses had judged the speed of the motor by the noise it was making.

At Lambeth, Harry Tate, of Burton Road, Brixton, was summoned for driving a motor-bicycle to the common danger. P.C. Wood, 626 W, stated that at midday on the 23rd ult. he was in the Brixton Road when he saw the defendant riding a motor-bicycle in the direction of Brixton Hill at the rate of ten miles an hour. A young lady who was crossing the road at the time was knocked down, but was not hurt. Witness asked the defendant why he had not given some warning of his approach. He replied, "If you were to take the wool out of your ears you would have heard it." The defendant said it was really the girl's own fault. He blew his horn three times. Miss Davis, the young lady who was knocked down, said she did not hear the warning. There was always a noise under the railway arch. Defendant; I am very sorry. I am glad she is not hurt. Mr. Hopkins: That is a sufficient apology to her, but not to the public. You must pay a penalty of 40s. and costs.

At Coventry, Mr. Thomas Bolton, of Lightoaks, Oakamoor, Staffordshire, a Justice of the Peace, was fined 10s. and costs for driving a motor-car at an excessive speed. The constable timed the defendant as travelling twenty-six miles an hour. He immediately stopped on the constable holding up his hand. Lord Craven said he wondered the defendant stopped at all, as the constable was in plain clothes. Defendant said no one was in sight and the car under perfect control.

At Epping, Nicholas Darmoris, of Herne Hill, was fined £2 and a guinea costs for furiously driving a motor-car at Gregory's Hill, Epping. The police expressed their determination to stop all furious driving in the district.

At Guildford Petty Sessions, on Saturday last, Mr. Bramson, of Dulwich, was summoned for driving at a speed exceeding 12 miles an hour along the London road, near Ripley. A police sergeant gave evidence, and stated that he timed the defendant for half a mile, which distance was covered in one minute, making thirty miles an hour. His evidence was supported by two officers in plain clothes, the three of whom were very much disconcerted by a searching cross-examination. When the second officer had given his evidence and stated that he was with the sergeant, Mr. Staplee Firth, who defended, immediately asked him why it was that he happened to be with the sergeant at the time. This question was not answered satisfactorily. It was immediately followed up by another one asking him if he was in uniform or plain clothes, whereupon he stated he was in plain clothes. The question was then put why he was with the sergeant and why he was in plain clothes. He refused to answer, and sought the protection of the Bench, whereupon the magistrates stated that they did not think the question ought to be asked. This raised a protest by Mr. Firth, who stated that if the law was to be administered in this un-English manner and the police were to be assisted by the magistrates in carrying out such disreputable means, it amounted to a grave scandal in the administration of justice. He followed this up by asking the magistrates why they considered it part of their duty to surround the police officers with a halo of perfection as against gentlemen who happened to prefer the use of motor-vehicles, and strongly protested against the Bench encouraging the police to carry out their duties

by dissimulation and trickery. Mr. Firth then stated that he should insist upon the matter being cleared up in a straightforward way, and subsequently he succeeded in eliciting from the policemen that they had been specially ordered to look out for motor-cars. A third policeman refused to state why he was in plain clothes, what his orders were, and why he was on a bicycle, but ultimately he had to admit that he was under special orders. The Bench stated they did not consider Mr. Firth had any right to interfere with the private orders to a policeman, but it was pointed out that when orders were given from those in immediate command of the police to effect a certain object, it was perfectly obvious that the temptation to distinguish themselves would lead these men into an excess of zeal and they would take good care not to come home empty-handed. The three policemen were so intent upon their prey that they all swore that Mr. Bramson admitted that he was going considerably over the regulation pace. This statement was denied by Mr. Bramson and Mrs. Bramson, who was with him in the car. The tactics of the policemen were very strongly criticised by Mr. Firth on behalf of Mr. Bramson, and the magistrates ultimately in effect found that the police had given false evidence and the charge was dismissed. One very interesting piece of evidence was elicited during the course of the hearing, as it appeared that Mr. Bramson had been stopped the same day, near Esher, by a constable in uniform and one in plain clothes. Several civilians were about, and they stopped to hear what was going on, and when they heard the policeman accuse Mr. Bramson of going over twelve miles an hour and demand his name and address all the civilians protested and stated the charge was untrue and unfounded, and they offered Mr. Bramson their cards and stated that they would come and give evidence to prove that what the police stated was untrue, upon which the officers instantly withdrew from the combat and stated that they would not take any steps in the matter.

At the Arundel Petty Sessions summonses were heard against Mr. Douglas Whitehead, son of the manager of the Beach Hotel, Littlehampton. The first summons was for driving a motor-car in Terminus Road, on May 24th, while the fittings of the car were in such a condition as to cause danger to persons on the highway. Defendant pleaded not guilty, and was defended by Mr. Staplee Firth. The first witness, William Hewitt, stated that at 4.15 on May 24th he was driving a horse and trap in Terminus Road, when he met a motor-car being driven by defendant, and, had it not been for a constable and another man, there would have been a bad accident. Defendant stopped the car in the middle of the road, but the machinery kept running, and made as much noise as a machine gun. By the Bench: There was another horse standing near at the time, but that did not mind the noise. Mr. Firth: Why don't you train your horse to these new vehicles? Do you know they have as much right on the road as you?—Yes. Other witnesses having been called, P.C. Carpenters said that, seeing the motor-car "do a jump" and stop, and that Mr. Richardson's horse was very restive, he thought it was a very dangerous position. He put up his hand and called to defendant to shut off the engine, which was making considerable noise, but he took no notice, and went down High Street. Mr. Firth: If Mr. Burchell (a previous witness) says in that box—and the groom also—that Mr. Whitehead pulled up when he saw the horse was frightened, and that he did not proceed on his journey until after the horse was under proper control, are they giving a fair version of what happened or not?—They might be in saying that. Then why do you go and tell their worships something to try and create prejudice against this gentleman? After further argument, Mr. Firth contended that they had no evidence about the fittings of the motor-car, and he further submitted that no one could complain of the engine running if the motor was stopped when required. Finally the summons was dismissed.—A second case against defendant was withdrawn.—A third summons against the defendant was then proceeded with, which charged him with failing to stop a motor-car in Surrey Street, Littlehampton, on May 24th, upon the request of Robert Browning, who was in charge of a restive horse. Defendant again entered a plea of not guilty. Browning said at 4.20 p.m. on May 24th he was coming from Pier Road into Surrey Street with a load of timber on a carriage drawn by one horse. Defendant was coming in the opposite direction with a motor-car, and, as the horse became frightened, he held up his hand for defendant to stop. Defendant took no notice, but shot by him at full speed, at a rate of about fourteen or fifteen miles an hour, and he did not seem to care whether he (Browning) was killed or not. Cross-examined: He was leading the horse at the time. He did not think defendant saw him "salute"—if he did he would have stopped. Mr. Firth having submitted that the case had not been made out, the Bench decided to convict, and imposed a fine of 20s. and £1 1s. 6d. costs. Mr. Firth asked the Bench to allow the costs on the other two summonses. He had a precedent for it in a case in which the Bench awarded £5 costs, where the police did not succeed. His client had succeeded in the other two cases, and in common justice was entitled to costs. The Bench, however, declined to allow the costs, but agreed to stay execution to allow Mr. Firth to consult his client as to whether he would carry the case to the High Court.

At Bow Street, Abraham Carlish was charged with driving a motor-car to the common danger. Defendant declared that he was not going more than eight miles an hour, and added: "If your worship will not believe me I will take you out for a ride." Mr. Marsham declined with thanks, and defendant continued: "You will be perfectly safe, I assure you. On the very day I was served with this summons I drove three members of the County Council to an automobile demonstration, and we

had a fine lunch. They will testify to my capabilities." Mr. Marsham consented to an adjournment, but a few minutes later was asked to settle the case at once, and a fine of 20s. was imposed.

At Tadcaster, James Haxton, a motor-car driver, of Knaresborough, was charged with driving a motor-car at a greater speed than twelve miles an hour down hill at Tadcaster, on May 12th last. The statement of Superintendent Knight and the evidence of constables showed that the defendant was the driver of a car which plied for the public, and on the day in question was returning from York with a load of eleven passengers. Through Tadcaster he went at a rate of twenty-four to twenty-six miles an hour, despite the warnings of the police. Haxton was fined £5 and costs.

AN OBSTRUCTION CASE.

At Marlborough Street Police Court on Tuesday, the 4th inst., Mr. Moffat Ford, the Managing Director of the Motor-Car Company, Limited, was summoned for wilfully causing an obstruction in Shaftesbury Avenue, W.C. The police-constable on duty in Shaftesbury Avenue at 11.25 on the morning of Saturday, May 18th, deposed that he saw a motor-car standing outside the premises of the Motor-Car Company, No. 168, and drew defendant's attention to this fact, and requested him to take the car inside. Defendant then said, "I am not particularly anxious to take it inside," and then went away. Witness stopped in view of the car for forty minutes, and then went to the defendant; he told him that he would be held responsible for the occurrence, took his name and issued a summons. Mr. Moffat Ford in his defence asked the constable what he was doing during the forty minutes. The constable stated that he kept in view of the car and nobody could have taken the



car away and brought it back again without him seeing it. Mr. Moffat Ford then addressed the magistrate, directing his attention to the Local Government Board Regulations made in connection with the Locomotives on Highways Act, 1896, in which it was ordered that a motor-car must not be left standing in such a position as to cause any unnecessary obstruction in the roadway. The learned Magistrate (Mr. Denman): "Yes, but that does not give you permission to cause even necessary obstruction for an indefinite time. Defendant then pointed out that Shaftesbury Avenue opposite the Motor-Car Company's depot was 36 ft. wide, and that this width was sufficient to permit of free circulation of six streams of traffic. Mr. Denman: Then what I want to know is why you monopolise a sixth of it. The public have a right to the use of the whole of the roadway, and you, as a member of the public, have as much right as anybody else to its use. By the Local Government Board Regulations, a motor-car may certainly be left unattended under proper conditions, and if you were only making a call of a few minutes and then came out and drove the car off again I could understand it. Mr. Moffat Ford: Well, then, your Worship, it seems to me a question of time limit, and I should be very glad if you would kindly give me some idea of what you consider a reasonable time. Mr. Denman: That, in every case, must be left to the discretion of the magistrate. In this case you were not making a call, but the car was left in the roadway, when you might just as well have taken it inside, and I do not consider that forty minutes is a reasonable time for the car to be left standing. I shall therefore fine you 20s. and the cost of the summons. Mr. Ford thanked his Worship for his explanation of the law and then withdrew. We reproduce herewith a photograph of the car taken immediately after the incident on May 18th, showing the obstruction complained of.

AN EXPENSIVE MOTOR-CAR.

At the Southwark County Court, on Tuesday, before his Honour Judge Addison, K.C., Arthur Everson, described as a practical plumber, of Stevens Street, Bermondsey, sued Thomas Thompson Hirst, a publican, of Trinity Street, Borough, to recover £8 17s. for plumbing work done. The defendant counter-claimed for £8 5s., the price of an experimental motor-car and an electric battery and coil. Mr. Philcox, solicitor, appeared for the defendant, and stated that his client admitted the claim. The work was done at the Pagoda public-house, Bermondsey New Road, of which he was then proprietor. Whilst it was being carried out there was some conversation about a motor-car which the defendant had experimented with, and the plaintiff agreed to buy it for £7 10s. He had also an electric battery and coil, for which he agreed to accept 15s. His Honour: A very cheap motor-car. How much did it cost you? The defendant: About £280! The defendant went on to explain that he and two engineers of Rotherhithe built the car as an experiment, but it turned out a failure, in that it cost too much to run. The idea was to work the motor by gas generated by the car as it travelled. The gas was generated all right and the motor was made to work, but the cost as compared with other motive power was too great to make the machine a success. His Honour: A curious experiment for a publican. A man needs to know a very great deal to improve even a little on gas engines, but when it comes to motor-cars—well—I don't think you were a very wise man.—The defendant: It was an oil motor at first with one cylinder and we put two cylinders into it. The plaintiff said the motor was a helpless mass of iron, and for a long time was stored in the defendant's beer cellar. Then it was taken on to a lead roof, where it remained for a time, exposed to wind and weather. Eventually the defendant, finding it in the way, asked witness to take it away, clean it up, and try to sell it. He took it away and partly cleaned it. When he tried to sell it and showed it to engineers they simply laughed at him. It was in a terrible state; there was no driving gear, and, in fact, he found it useless to spend any more time upon it. As to buying it, he had never thought of such a thing. Electricity, oil, gas, and everything else had been tried in it, but it had proved a failure. An engineer named Crier said the machine was in pieces and the man was not yet born who could put it together; it was partly composed of gas piping. A son of this witness declared that the machine had no more resemblance to a motor-car than a donkey had to a racehorse. The Plaintiff: The defendant said he would see about the driving gear, and when that was fixed many cycle people would jump at the car. His Honour: And did they jump? The Plaintiff: I never showed it after I had been laughed at. His Honour remarked that it wanted a very smart man to successfully experiment with motor-cars, and gave judgment for the plaintiff on the claim and counter-claim, with costs.

CHARGES OF OBSTRUCTION.

At Bow Street, Walter Bersey, of the Automobile Manufacturing Company, Long Acre, W.C., appeared to a summons charging him with wilfully causing an obstruction.—Evidence was given to show that a motor-car was left outside the defendant's premises for thirty-five minutes, causing considerable obstruction to the traffic.—Mr. Staplee Firth, for the defence, said the police seemed to have got hold of the notion that because the motor was a new thing they must "go" for it. The defendant had some business to transact, and left his motor-car while he did it, in much the same way as a gentleman might leave his carriage outside a shop or club.—Mr. De Rutzen said it was wrong to suppose that there was any kind of feeling on the part of the police against motor-cars. In the present instance there had been an obstruction, and the defendant must pay a fine of 5s. and 2s. costs.—Notice of appeal was given.

A BIG LIQUID FUEL BURNER.

On Monday afternoon we journeyed down to the works of the Clarkson and Capel Steam Car Syndicate, Limited, at Deverell Street, S.E., to witness a demonstration of what is described as the largest liquid fuel burner so far made. The burner, which is on the Clarkson system, has been designed for raising steam in a water-tube boiler of 200 h.p., for one of the fire-floats on the River Thames, in substitution for coal firing at present used. The Fire Brigade have, for more than a year, had in regular commission a land engine heated by liquid fuel on the Clarkson system, and the results have proved so satisfactory that the Chief Officer is able to report the engine capable of exerting her full power 2½ minutes after the call, a result never accomplished by coal firing. This 200 h.p. burner is very much larger than is necessary for a land engine, and has been specially designed to keep burning at a small flame continuously day and night, just keeping a little steam in the boiler, and ready at any instant to give out its full power in order that the vessel may be ready to be propelled at full speed under its own steam immediately the officers are on board. The steaming power of the boiler is greater and more uniform than is the case with coal firing, and the life of the boiler is much prolonged from the same cause. The oil supply is contained in two long rectangular tanks of about 400 gallons

capacity, which are placed on each side of the engine-room, and the oil is pumped into a copper reservoir to a pressure of forty lbs. per square inch against a cushion of air, gauges being provided to indicate both the pressure and the quantity of oil contained within the reservoir. The quantity of oil pumped into the reservoir is automatically adjusted in accordance with the rate of consumption, and, therefore, once the burner is ignited it will go on working as long as any oil remains in the tank, at any rate of consumption, either high, low, or medium flame, and without any adjustments of the oil pump. The burner is capable, at its maximum power, of producing considerably over 100,000 British thermal units per minute.

One of the special features of the Clarkson system of oil burning is that the burner may be turned down, burning perfectly at a very low flame, consuming but a very small fraction of the maximum supply. This is particularly advantageous when a sudden demand for steam is likely to be made. The burner is ignited in the first instance by compressed gas, which is burned in a series of jets around the vaporiser, the gas cylinders being fitted with gauges and reducing valves to maintain a proper working pressure. We have only to add that the demonstration was very successful.

THE BIG EVENT OF 1901.

As already announced, official trials of motor-vehicles will be held in connection with the Glasgow Exhibition from Monday, September 2nd, to Friday, September 6th, next. The trials will consist of a daily run of 90 to 110 miles and will also include some hill-climbing tests. The entrance fee is to be £20 if paid before twelve o'clock noon to-day the 15th inst. An additional sum has to be paid in respect of vehicles entered after this date. In making the entry no description of the vehicle need be forwarded. When the final regulations are published full particulars of the vehicle must be supplied, but the entries may be withdrawn and the entry fee reclaimed, if the official regulations are not approved by the owners of the cars. Entry fees should be forwarded to the Secretary, Automobile Club, 4, Whitehall Court, London, S.W.

At the time of writing the following vehicles have been definitely entered for the trials which promise to be of a very important character:—

- 4 vehicles by the Motor Manufacturing Company, Ltd.
- 2 " by Messrs. G. F. Milnes and Co.
- 2 " by the New Orleans Motor Company.
- 3 " by the Roadway Autocar Company.
- 3 " by the Wolseley Tool and Motor-Car Company.
- 3 " by the Daimler Motor Company.
- 2 " by the Star Motor Company.
- 1 vehicle by the Motor Power Company, Ltd.
- 1 " by the Clarkson and Capel Steam Car Syndicate.
- 1 " by Messrs. Wilson and Filcher.
- 1 " by Messrs. Parr and Co., Ltd.
- 1 " by the Hozier Engineering Company, Ltd.
- 1 " by De Dion-Bouton, Ltd.
- 1 " by the Century Motor Company.
- 1 " by the Motor-Car Company.

The following have notified their intention of entering vehicles:—

- 1 vehicle by Messrs. Panhard and Levassor.
- 2 vehicles by the Lanchester Engine Company, Ltd.
- 3 vehicles by the Locomobile Company of America.
- 1 set of tires by the Dunlop Tyre Company.

The Austrian Daimler Motor Company has lately supplied a 10 h.p. motor-van to the Vienna Crystal Ice Company. The van will carry three tons.

In a case at Leeds, in which one policeman said the motorist was going at twelve miles an hour, and another that it was at least fourteen, the machine was a motor-cycle which was out of order, and the rider declared it could not possibly go more than nine or ten miles an hour. This was held to be excessive, and, of course, the police evidence was sufficient to ensure a fine.

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COMMENTS.



UPON the occasion of the meeting at Leicester of the Incorporated Association of Municipal and County Engineers on the 29th inst., the Club have arranged for motor-cars to attend for the purpose of conveying members of the association round the neighbourhood of Leicester on that day, it being deemed a favourable opportunity of giving the Engineers and Surveyors of County Councils a practical insight into automobile control. As already announced, the occasion will be made a Club tour, starting from the Club premises on the 28th inst., at 12.30 p.m. It is hoped that all members of the Automobile Club who own motor-vehicles will make a point of driving or sending them to Leicester on the occasion of the conference. In its demonstration to Chief Constables and to County Councillors, the A.C.G.B.I. has done much good work, and now that another opportunity is offered of demonstrating the capabilities of the motor-car we trust that the members will support the occasion as far as possible.

The Lincolnshire Automobile Club.

ON Wednesday, the 12th inst., the Lincolnshire Automobile Club visited the Dukeries. Led by the Mayor (Mr. C. W. Pennell, the chairman of the Club), the party started from Lincoln, and proceeded via Tuxford to Edwinstowe, being there met by other members. Luncheon was partaken of at the Forest House, and then, escorted by Mr. Naish, the proprietor, who expressed himself delighted with the ride he had on Mr. Pennell's car, the party was taken round the Dukeries, special permission having been obtained with respect to the Clumber estate. Tea was enjoyed at the Normanton Inn. Led by the Mayor once more the Club proceeded to Markham Moor by way of the Duke's Drive, and on to Lincoln, the ride home being most enjoyable. In addition to the Mayor and Mrs. Pennell, on their De Dion voiturette, the party included, among others, Mr. W. B. Jevons (vice-president) and Mrs. Jevons, on an M.M.C. quad; Mr. P. Wright and Mr. T. Tindall, De Dion tricycles; and Mr. Wilkinson (secretary), on a Progress tricycle.

The Kentish Motor-Car Service.

ALTHOUGH one of the first two steam motor-cars despatched to Tunbridge Wells met with a slight mishap at Bromley, which caused some delay, its fellow more than fulfilled the expectations of the crowd of enthusiastic townsfolk who greeted its arrival, and the wreath with which it was decorated was well earned. Up hill and on the level the vehicle—a Bayley steam wagon—maintained a fairly uniform pace on the journey, running in at the finish up Dry Hill with a regular spurt. Subsequently it paraded the town, negotiating Mount Ephraim and the many ups and downs of various parts in a most creditable manner. At a dinner given to celebrate the happy event some interesting particulars as to the future of

the service leaked out. Among others, that the proposed rate of transport taken all round works out at about half that of the railway. It is not proposed to start the regular night service till the Company is fully equipped with eleven powerful cars.

A Run on a Locomobile.

ON Saturday last we had a pleasant experience in the way of a run on a Locomobile, a vehicle of this type, kindly provided by the Locomobile Company, conveying us to Godstone, for the English Motor Club's hill-climbing competition. The car was one of the very latest type and comprised several important improvements, notably a feed water heater, and means by which the driver can, from his seat, regulate the burner. After seeing that the water and petrol tanks were filled we set out on our twenty miles journey, which was accomplished without incident of any kind. No stop was made en route, and the quiet and easy running of the vehicle up hill and down dale—we travelled via Mitcham, Beddington, and Purley—was a pleasant surprise. In the evening Mr. Letts drove us home in a similar car and over the same route. The run was so free of incident that there is absolutely nothing to write about it. Not once did we tarry on the return trip, and although we did not appear to be travelling fast, the time occupied was well up to the legal limit, and we were home fully two hours before we should have been had we been compelled to return by train instead of by automobile.

Municipal Motor-Vans.

WESTMINSTER'S City Councillors are considering the further extension of the system of motor-vans for municipal purposes, a marked success having attended road-watering and refuse-collecting undertaken by experimental vehicles. One of the chief points which is engaging the attention of the Committee appointed to report on the matter is the adoption of a vehicle which will also be available for the removal of snow, last winter's experience having demonstrated that motor-vans cleared the streets in a sixth of the time and at less than half the cost of horse-drawn vehicles.

Automobile Tours.

WE hear that an enterprising tourist agency is pressing the automobile into its service, and is projecting a motor-car tour in Normandy and Brittany. The vehicle to be employed will seat from eight to ten persons, and the first tour will be in charge of Mr. Harold Dawson, of Bradford, who is familiar with most of the Continental highways. The tours will commence at Havre, on Saturday, August 3rd, and each succeeding Saturday during August, and the route will be *via* Honfleur and Trouville to Caen, where the Sunday will be spent. On Monday the route will be continued *via* Bayeux, Coutances, Granville, Avranches, and Pontorson to St. Michael. St. Malo, Rennes, Mayenne,

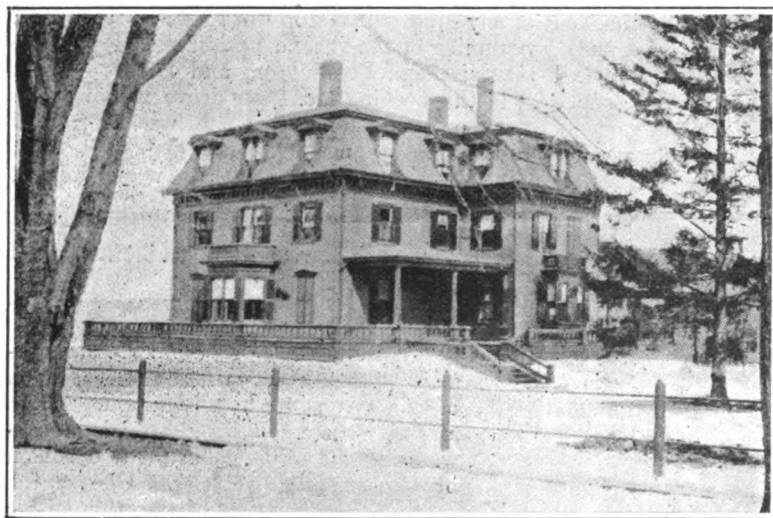
Alençon, Evreux, and Rouen will then lead the way to Havre, whence English tourists will be able to return home. It is calculated that the cost of the whole journey in Normandy and Brittany will be ten guineas, including travelling and hotel expenses. The progress of the initial trip will be keenly watched by the trade, both in England and France.

Pending Litigation.

PROBABLY no industry has ever been hampered as is the infancy of the motor-car. As well as three cases of infringed patents disposed of last week, and referred to elsewhere, several others are pending. In the Chancery Division, Mr. Justice Joyce is to try an action between the British Motor Company, Limited, *v.* Ford. The latter, by special arrangement, will not be heard before July 16th, while the action of the Motor-Carriage Supply Company, Limited, *v.* British and Colonial Motor-Car Company, Limited, appears in the same judge's list. In the King's Bench Division there is the Dunlop Pneumatic Tire Company, Limited, *v.* Toon and Son; and Bayleys, Limited, *v.* Motor-Car Company, Limited.

The Automobile Club of New England.

THE Automobile Club of New England has recently established its headquarters in a handsome building in the suburbs of Brookline, Mass., in the centre of a pleasant district, with good roads extending in all directions. Also connected with the club house is an estate which had already been adapted



to the needs of a driving club. The New England Club is planning to make its new house the centre for a number of long and short distance tours and competitive runs this summer. Incidentally it makes a pleasing and handy starting place, for both house and garage are provided with a telephone, and at the latter members are provided with all requirements, repair implements, lubricating oils, and expert attendants.

An Excellent Example.

THE Highways Committee of the Essex County Council are setting an example which we trust will be followed by similar bodies all over the country. At their last meeting the Committee decided to recommend the purchase of a motor-car for the chief surveyor of Essex main roads (Mr. P. J. Sheldon). There were two arguments in favour of this course, which led to the adoption of the resolution. One was that Mr. Sheldon would be enabled to travel over about twice as many miles of road as under the present system; the other that he would be

able to thoroughly appreciate any unevenness or other defects in the roads.

Another Trans-American Failure.

ONCE again the attempt to make an automobile trip across the United States has ended in failure. Though no one may question the amount of grit possessed by Mr. Alexander Winton, yet too much grit and too much sand when they comprise all there is of an alleged American road are too much even for Mr. Winton and Mr. C. B. Shanks, hence their abandonment near Winnemucca, Nevada, of the attempt to make a Pacific to Atlantic record for the Winton car. The machine stalled in a sand hillock near that place, and could not proceed. The two automobilists took the train for Cleveland, and the machine was despatched by goods train as soon as it could be dug out. At Emigrant Gap, Cal., an axle was broken, causing a delay of several days while the damage was being repaired. The roads over the mountains were very rough, and the desert beyond impassable on account of the deep sand. Mr. Winton is said to be in no wise convinced that he cannot make the trip as planned, and will attempt it again with a vehicle specially built to combat the peculiar conditions which confront a motor-carriage in a trans-American trip.

Electric Fire-Engines in Paris.

THE automobile is meeting with increasing employment in public services. During the past two years the Paris fire brigade have been using an electric service wagon, constructed by Bouquet, Garcin and Schivre to the designs of Captain Cordier, and the van has done such excellent work that the automobile equipment of the fire brigade has now been extended by the addition of two more vehicles upon the same system, one for the engine and the other for the ladder. Of course the advantage which has induced the authorities to adopt electric vehicles is the saving of time. The vehicles are always ready to start at a moment's notice. A few seconds after the men are rung up the engine leaves the shed, followed by the reel and the ladder, and not only is time gained at the start, but the vehicles travel much more quickly than when drawn by horses. Judging from present indications it will not be long ere the whole of the Parisian fire brigade material will be replaced with electric vehicles.

Goods Service Wanted for Surrey.

THE inauguration of the motor-car goods service between London and Tunbridge Wells, which we mentioned last week, is being keenly watched by agriculturists and market gardeners throughout the country. In the adjoining county of Surrey it has created a very lively interest, and people are asking why does not some enterprising financier-motorist institute a similar service for Epsom, Leatherhead, Guildford, and Godalming, on the route on which the horse-drawn parcels post service is carried. Such a venture would, doubtless, have a very good chance of success—if the Surrey police did not develop undue officiousness.

The "Contour" Road Books.

"THE 'Contour' Road Book of England" (Gall and Inglis) deals with the subject handled thoroughly, containing as it does 1,500 maps and plans. The maps which come first deal with England and Wales, in some forty handy sections, thus obviating the necessity of carrying a larger map, too often unmanageable except upon a table. One of the "Contours" strongest claims to favour will be found in the fact of its being self-contained—i.e., none of its maps or plans require unfolding. The 1,100 routes are each accompanied by a contour plan, as well as some useful information concerning the road itself. The plan enables the motorist to decide both the length and

gradient of a hill before approaching it. Altogether the "Contour" Road Book contains a very great deal of necessary information in a much condensed form. Also by Messrs. Gall and Inglis is "The Royal Road Book of England," a neat little pocket map bound in water-proof cloth. Contour is its feature, made clear by three hundred plans of principal routes. A map at the end of the book possesses the advantage of being folded in such a manner as to keep open at the part required for consultation.

More Complaints.

WRITING under the *nom de plume* of "Resident" in a recent issue of the *Essex Herald*, a correspondent appeals to the Local County Council to issue regulations as to motor-cars. "Resident" states that at present they seem to be driven at the sweet will of those in charge of them. He is labouring under a delusion. The motor-car is more regulated by law in this country than in any other. A glance at any daily paper will reveal the fact that their owners are constantly in court and the victims of heavy fines, for the breach, generally imaginary, of just such legislation as he clamours for.

Horse v. Motor-Car.

WHEN the account of a recent collision was given before a magistrate, two versions were recited. The driver of a horse and cart said his animal was standing still, and that the motor-car ran into it. On the other hand, the driver of the motor-car said he was at rest when the horse came prancing along and charged into his automobile. With such contradictory evidence the magistrates were, of course, on the side of the horse, and the owner of the motor-car was fined ten shillings and costs for "furious driving."

An Absurd Notice.

MOTORING in Surrey the other day we came upon a wide country road between Dorking and Holmwood, at the end of which stood a notice board warning drivers of traction engines and motor-cars against passing that way. Next we shall be warned to keep off the high road!

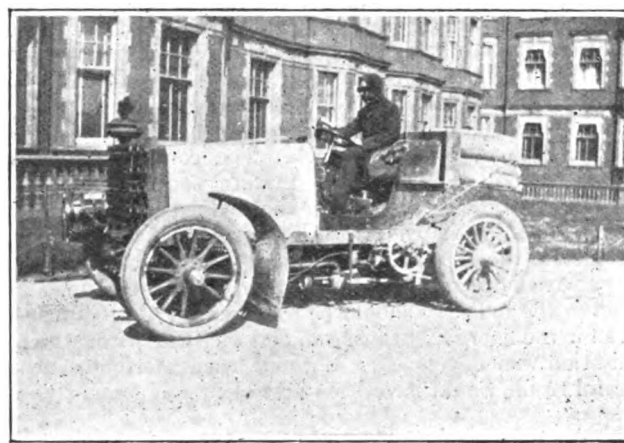
Motor-Cars' Freedom in Towns.

THERE is division in the camp of those who would hold the roads against the motor-car; and in the course of the lengthy correspondence on the subject that has been inflicted on the readers of the *Yorkshire Post*, we notice an interesting development. Some writers have suggested that they will be satisfied if the speed of motor-cars is reduced in country districts. As a Thirsk magistrate put it, "It is in the country where the danger exists and where the horse has nothing else to attract its attention when meeting a motor. In towns, there is comparatively little danger, as horses have so much to occupy their attention, and they get confidence through seeing other animals around them." So this worthy observer would allow the automobile license in towns but no liberty in the country. But is it the motor-car that is at fault? We are inclined to the view that if this J.P. could suggest some way of amusing horses in the country so that their minds should be occupied—as he declares is the case in towns—the whole difficulty would be solved, and horses and automobiles could move along together.

Motors the Friends of Horses.

LORD LLANGATTOCK is interested in many modern movements, and allowed the Church of England Society For the Promotion of Kindness to Animals to hold a meeting at South Lodge, Knightsbridge, on Friday last week. Interest was given to the occasion by a paper on "The Benefits which will Accrue to Horses from the General Use of Motor-vehicles," by the Hon. C. S.

Rolls. Not only did Mr. Rolls refer to the cleaner streets and cheaper transport that would result from the adoption of motor-cars, but he argued they would tend to improve the breed of horses by allowing the latter to be put to work of a suitable character. For riding and hunting the horse will always be employed, but the drudgery and the burden associated with horses employed to draw heavy loads will be materially alleviated as the automobile comes into general use. At the same meeting Mr. Shrapnell Smith gave an account of the Liverpool trials. Colonel Tomkinson, M.P., declared that the introduction of motors for transport purposes in war would prevent much cruelty, and a resolution was adopted to the effect that "the more general adoption of the motor-vehicle will lead to the alleviation of much animal suffering." Mr. Rolls certainly deserves the thanks of the industry for introducing the subject in such an acceptable way to a society that seeks to promote kindness to animals, and the many leading articles that have been written on the paper proves how ably he handled his congenial theme.



THE 50 H.P. NAPIER.

(Mr. Mark Mayhew, in Special Speed Driving Outfit, at the wheel.)

Hints to Drivers of Horses.

To the discussion that has been going on for some time in the columns of a leading Yorkshire daily with regard to motor-cars, Mr. Norman D. Macdonald, chairman of the Scottish Automobile Club, contributes a useful letter, in which he emphasizes two or three points known to motorists but obviously "caviare to the general," to borrow a phrase from Hamlet. It is generally the driver and not the horse that is seized with panic on the approach of a motor-vehicle—a fact which every motorist can confirm. Then, too, there are horses between shafts with inherent vices and tempers that are as excited when near a tramcar or a street organ as when in the vicinity of an automobile. To credit the motor-car with all the troubles caused by such animals is manifestly unsportsmanlike and unfair. Drivers, too, should recognise, as Mr. Macdonald points out, that the faster the motor-car is driven past a horse the better, because the horse sees less of it and has consequently less time in which to work up its agitation. If horse drivers realised the safety that exists in a quickly passing automobile they would not strive to reduce the rate of speed at present allowed by law.

Taxing Cars by Weight.

How frequently those who object to motor-cars make suggestions likely to defeat their own wishes is a fact known to motorists. Such an instance is afforded by the *Bristol Times*, which makes the proposal that motor-cars should be rated "at so much a cwt. on the weight of the car," and when caught "scorching" they, or the owners, should be heavily fined. Now, to tax automobiles according to their weight would be to offer up a fine prospect for the makers of weighing machines and the official class. It would drive motorists to aluminium bodies

and the lightest possible materials, with the result that the speed of the cars would be materially increased. Hence we should have more speed, more prosecutions, and more growls from the *Bristol Times*. Evidently the writer of the note did not know that automobiles have to pay a licence and that to tax by weight in the case of motor-cars is introducing a principle that would also have to operate with regard to horse-drawn vehicles and dogs. And then there would be growls indeed. Fortunately the *Bristol Times* is not the source of the Chancellor of the Exchequer's inspiration; for which small mercy we are sincerely thankful.

The Recent Demonstration.

It was said in many directions that the 1,000-mile trial of 1900 was partially responsible for awakening the antipathy of many rural Councillors against motor-cars. They recognised, as they had never done before, that the automobile was a moving force that promised to carry the people with it; and they, with full buccolic ardour, threatened pains and penalties to the pioneers. If the action of the Automobile Club was thus the indirect cause of recent local activity against motorists—a conclusion to which we do not assent—it must now be confessed that the Club has justified itself by the demonstrations before County Councillors which were so fully described in the *Journal* last week. The conversion of Councillors went on daily, and in private conversation as well as public utterance they acknowledged past prejudice and promised future fairness. With a fulness that indicated the importance of the occasion the general Press reported the proceedings with sympathy and intelligence; and the thanks of all engaged in the industry should be tendered to the Club and its officers for the energy, enthusiasm, and sacrifice with which the organisation was developed. Without such attributes no such successful result would have been possible.

A London Service Wanted.

THE coming of the "Tube" is leading to the exit of the omnibuses along the Holborn route, and all interested in the conveyance of Londoners from point to point are watching the development of passenger traffic in the capital with considerable interest. The Holborn line is not the only one that has suffered, for bus traffic along the main arteries of the City is being despoiled by enterprising "pirates" instituting new cross routes connecting with the electric railway. If great lumbering, cumbersome omnibuses, with two horses and uncivil conductors, can thus make profit, there should be remunerative employment for motor-car services in similar directions. Rapid services from the Strand to any of the stations of the Central London Railway should certainly be paying ventures, and we commend the idea to those interested in the subject.

A Motor-Car Service at Oxford.

THANKS to the enterprise of the Reading and District Motor-Car Company, Limited, Oxford has a motor-car service. Starting at nine o'clock in the morning and stopping about twelve hours later the cars run to various parts of the city at popular fares. The system is elastic: cars can be hired for the half-hour, hour, or as long as required. Private parties can also be arranged, and it is proposed to run pleasure trips to outlying places of interest.

America's Delay.

WHEN we consider what remarkably clever and inventive mechanics the Americans are, we must profess disappointment at their contributions to automobilism up to the present. True, they have given us the steam-car in a simple and popular form, and perhaps lead the way in electric traction; but in petrol motors they have done very little which can be called remarkable or revolutionary. Though there are a fair number of petrol cars made in America, none of them have

attracted the attention which French or English cars have won for themselves by their performances. Uncle Jonathan is as keen on an advertisement as any one else, and if he had speedy cars or any other notable improvements, the world would very soon be worried about them. We have great hopes, however, that ere long America will take a prominent place in automobilism. The bad state of her roads is, we believe, one of the causes which prevent rapid development. As an indication of their quality, we may mention that it recently took a car 18½ hours to do the 225 miles from Boston to New York; and this was classed as a record drive! It was accomplished, too, with a French-made engine. Speed cars could not hold together over such routes, and as the makers have no means of thoroughly testing their vehicles in fast travelling, they are much handicapped in turning out cars for the European markets.

A Motor Amuck.

FORTUNATELY the scorching motorist is a much rarer bird than the police would have us believe. Still he is to be seen sometimes. One was on the wing the other day in France, on the road from Maisons Laffitte to Paris. He collided with a pony trap, reduced it to wreck, scattered its three occupants about the road, made cat's meat of the pony, and continued his wild career without so much as a word of apology. Whilst looking round at the hue and cry which he raised he ran over an old man who was wheeling a perambulator, fortunately empty. The madman is reported to be still at large.

Blind Justice.

TRULY our legislators do but partially administer justice to the motorist. The inequality of the fines imposed for furious driving by the Benches of various parts may well set many a victim calculating on the cost of his crime. This week we record a batch of offences disposed of at a few shillings per head, yet all of them were clearly proven by mathematical plain-clothes P.C.'s who timed the offenders, stop watch in hand, from start to finish of a measured course, and bagged the lot. Last week at Nottingham, Mr. Belcher was fined £5 for a similar offence, by no means clearly proven, seeing that the witnesses called had no means of ascertaining the speed, and varied widely in estimating it. As Mr. Belcher's was, we think, the first offence in that district, it is just possible that he had on that account to pay through the nose for a novelty. Still this is poor consolation and we should be glad to see the various Benches rather more uniform in making the punishment fit the crime, if fine they must.

THE Automobile Club of America has adopted a new rule under which no vehicle is permitted to take part in a Club run unless operated by a member of the Club or carrying a member as a passenger.

AN American syndicate is reported to be negotiating for the purchase of the patent rights of the Panhard-Levassor Company, with a view to manufacturing the vehicles in America and so escape the tariff.

THE Automobile Company of America, Jersey City, N.J., are constructing a racing automobile for Colonel Max Fleishmann, of Cincinnati, Ohio, in which he expects to make the trip from Cincinnati to New York and back.

WILLIAM D. WARNER, of Chicago, fourteen years of age, is the youngest licensed motor-car driver of that city, and Samuel Harris, aged sixty-four, is the oldest. Both have passed the necessary examination, imposed by the city authorities, with credit.

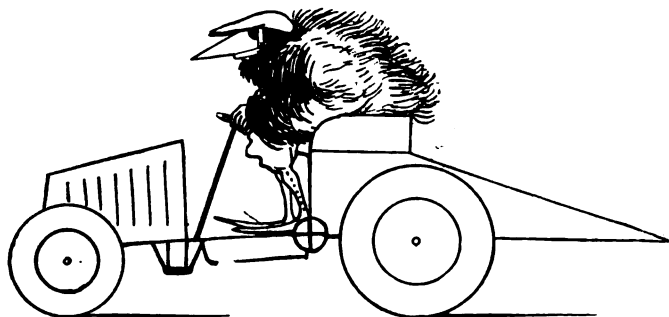
FRESH attempts are being made to place American motor-cars upon the Australian market, but so far the results have not been encouraging. Some months ago the American papers gave considerable prominence to the Winton Company, of Cleveland, having shipped three motor-carriages to Sydney, "for use in the Government mail service in Australia," but, according to *Commercial Intelligence*, the Sydney Post Office officials profess to know nothing about them.

A RUN ACROSS FRANCE A RACER.

By A. R. SENNETT.

(Concluded from page 297.)

WITH regard to the tires, these are from every point of view the most unsatisfactory component of the automobile's anatomy. They are expensive, both in prime cost and up-keep; they are fickle and uncertain in the extreme, whilst they are productive of that which, above all other things, conspires to rob the automobilist of his enjoyment, viz., "side-slip," or as our French friends say, *dérapiage*. We feel, however, the sins of "side-slip" are often visited unmerited upon the pneumatic tire, and that mitigation, to a certain extent, will be effected by an improvement in vehicular design. The London omnibus has, unhappily, no pneumatic tires, yet it is very prone to indulge in this *glissant* skittishness. To entirely obliterate trouble, and we do not hesitate to say danger, from "side-slip," radical change of design is demanded, viz., the adoption of fore-carriage traction instead of rear-wheel propulsion. We are, however, persuaded that material modification would attend the employment of all four wheels as steerers. Every racing driver finds that the danger of splitting his cover in rapidly rounding corners is a real one. In this regard also we feel that the racer of the future will be fitted with larger wheels—all steering, and all of the same size—and all furnished with tires of the same diameter. For it is far more important in bad road travelling to prevent the tires of the



THE RACING CHAUFFEUR OF THE FUTURE.

Cliche d.]

[L'Automobile. Milan.]

steering wheels from descending into ruts and depressions than it is the trailing wheels. The increase of diameter of the two wheels should act beneficially upon the life of the tires, firstly, by reason of the number of revolutions for a journey of given length being decreased; secondly, in regard to the "rush" of the contained air. This, although its velocity may remain the same, would be advantageously effected from the fact that its heat emissivity would be accelerated by reason of the increased area exposed to radiation. The generation of heat from this cause on high-speed runs is surprising, and the careful *chauffeur* should not omit every opportunity of passing his hands round his tires, not only to ascertain their temperature, but also to localise the miscellaneous foreign substances, such as nails, pieces of barbed wire, and the like so often to be found secreting themselves with uncommendable modesty in the treads.

The reduction of weight is a *desideratum* more easily desired than effected, for great speeds spell great strength, and this applies to the ordinary touring carriage as well as to the racer; for the most desirable characteristic of the travelling carriage is that it shall be equipped with ample power and thus made capable of doing up-hill work at the Parliamentary limit. The reduction in weight should be set about with more common-sense than is displayed in many ways, but in particular with reference to providing covers to the chain wheel pinions, which, when allowed to remain uncovered, are a source of great danger. The mudguards also should, in our opinion, receive more attention from the makers, and should be mounted in the form usual upon cycles, for the waste of horse-power, by the use of such very wide "wings" as are employed upon the steering wheels, must be considerable.

Such a run across country at racing speed naturally sets one thinking as to what road speeds the future may have in store and what may be the limiting conditions. In this regard it would be interesting to ascertain what law the racing carriage doing a mile a minute is amenable to. For whereas wind pressure as affecting slow-speed carriages is almost negligible, it becomes, at express speed, a most important factor. What is wanted is a second Froude to arise and thoroughly investigate the matter; for such an investigation might materially influence the design of racing carriages by the elimination of erroneous deductions. For example, we are aware that there are those who hold that the shaping of the prow of the racer into "cut water," "shoe," or "torpedo" form is of little use, from the fact, as they suppose, that retardation, as regards atmospheric influences, is due almost entirely to the existence of a partial vacuum at the stern of the land yacht. In this relation we would suggest that a *chauffeur* possessing a racer should fix on to the back of his carriage a self-registering aneroid barometer and let us know what he finds to be the reduction in atmospheric pressure at different speeds. At present speed in common-road mechanical transport is limited more by the existence of more slowly moving vehicles and by pedestrians and animals than anything else. When one considers that we can to-day propel travellers over common roads at speeds in excess of those of express railway trains, one cannot but feel that it is highly probable that in many districts, roads between town and town will eventually be reserved for high speed mechanically-propelled transport only.

Our run over the course was pleasantly and successfully made, but this was due principally to the skill of "our" *chauffeur*. And it is fervently to be hoped that the drivers in the forthcoming interesting contest will successfully show the requisite skill with the equally requisite nerve we are proud to know the racing *chauffeur* possesses, for whereas a grave accident would have a retarding influence upon progress, the competition, if successfully carried through, will, without doubt, have a beneficial effect in popularising *automobilisme à grande vitesse*.

At a special town meeting Stockbridge, Mass., has decided that no automobile shall proceed through its streets at a speed in excess of four miles per hour. Progress must come slowly to the citizens of Stockbridge.

THE Bombay Municipal Corporation has resolved to request the municipal commissioners to report whether it would be advisable to use motor-cars and cycles in substitution of horse traction for fire-engines.

THE *Whitehall Review* remarks that "the popularity of the motor grows apace, and the latest designs are an enormous improvement on those of even a year ago. In a year or two there is no doubt most people will desert Mayfair in the summer in favour of the country, the automobile making this so easy."

THE Austrian-Hungarian Customs authorities have decided that accumulator batteries for motor-cars which consist of wooden cases, lined with gutta-percha, in which the lead plates are fitted, will in future be treated as lead when passing through the Custom House, without regard to the rubber or gutta-percha, the weight of which must not exceed 8 per cent. of the total.

WE briefly mentioned in our last issue that the Milne petrol lorry, A1 of the trials, was being fitted up by the Liverpool Corporation as a high-speed water-cart under the direction of Mr. Brodie, the city engineer. A test was made towards the end of last week in London Road, and attracted great attention. The results have not yet been made known officially, but to ordinary onlookers the motor-vehicle appeared to sprinkle water at something like twice the rate of the ordinary horse-drawn cart.

"THE motor-wagon has come to stay," says the *Financier*. "Of itself it presages a great constructive industry, and in respect of the services it renders it may revolutionise the industrial conditions of the United Kingdom. It may, for example, accelerate the notable tendency of manufacturers to quit great cities for country districts, where land is cheap, where there is plenty of room for the expansion of a business, and where working expenses generally are bound to be less."

FLOTSAM AND JETSAM.

BY "FLANEUR."

Punch was very happy the other week in its suggested automobile regulations, which, by a *reductio ad absurdum*, more than hinted at the fatuity of the "ten miles an hour" and other proposals evolved by certain County Councillors. It was much less happy, however, in its issue of June 12th, when it published a drawing, spirited but fallacious, by Mr. Raven Hill, over the title of "Brothers in Adversity." A farmer in a dogcart, tugging vainly at the reins, is alongside a motor-car, to the driver of which he shouts: "Pull up, you fool! The mare's bolting." To this the automobilist is represented as replying: "So's the car!" The road is level. Motor-cars, Mr. Raven Hill may be informed, are incapable of "bolting" under any conceivable circumstances on the level, and something exceedingly unusual would have to occur to the brakes before such a thing could happen down hill, and a very steep hill, too, would be required to effect the consummation. And yet this idea of motor-car "uncontrollableness," to coin a word for the occasion, is still rife in many quarters. With how much greater justice it might be directed towards the horse!

It is safe to say that if a sequence of automobile accidents had occurred during the last few weeks of even half the seriousness of certain recent horse catastrophes, the country would have simply seethed with indignation. Since the grievous *char-à-banc* disaster at Epsom, there have been numerous other accidents due to the horse. At Camelford, a party of children were run away with, serious results ensuing; a stage-coach accident occurred in Northumberland Avenue; a bishop has been thrown out of his carriage; a cyclist has been fatally impaled on a shaft and carried a long distance before the horse could be stopped; and so the tale goes on. At this rate we shall soon be rivalling France, the latest statistics as to which show that in the month of April no less than sixty-six deaths and 724 injuries resulted from the use of horses, eighteen deaths and 154 injuries from railways, two deaths and sixty-five injuries from bicycles, and three deaths and fifty-six injuries from automobiles.

So far as the London public is concerned, however, the most remarkable circumstance is the equanimity with which the constant presence of filth particles in the air, particularly in wood-paved districts, is tolerated. A friend of mine who is the leading throat specialist in London has described the evils of this pollution in emphatic terms, and it is largely responsible for the throat ailments, often very serious, which prevail in the West-end, particularly in hot weather. When a wind gets up, and blows this pulverised matter about, it becomes painful to the eyes as well; in fact, when driving down to Sheen House, during the County Council demonstrations, I was unfortunate enough to suffer considerably in this respect. The amount of animal matter on the ground in Horse Guards Avenue, too, as people walked about inspecting the cars, was not only annoying, but a curious object-lesson in favour of the horseless vehicles. No wonder that Earl Grey remarked that the motor-car needed no scavenger behind it.

In the presence of no small amount of keen rivalry among motor-car owners as to the merits of their vehicles and their own particular prowess or mechanical aptitude, it is pleasant on occasion to encounter a spontaneous tribute from one *chauffeur* to the abilities of another. Various interesting cases of this kind have come under my notice from time to time, and some of them, I think, are especially worthy of mention. The first is chiefly noteworthy for its sequel. On the day of the Automobile Club's demonstration to Chief Constables there were more cars than Constables, and the owner of a smart *voiturette* took down to Sheen House as his passenger not a police official, but a well-known member of the Club Committee. Later in the day the latter gentleman, after he had alighted at Whitehall Court, expressed unstinted admiration for the way in which the car had

been piloted through the traffic. "He always did the right thing," were the words he used with respect to the owner of the car, and this comprehensive praise, be it said, which was the frank testimony of an expert in traffic conditions, was not uttered by way of compliment in the driver's hearing, but to others who were about.

THE sequel is still more interesting. When the time for the County Councillors' demonstrations came round in due course, it happened that the subject of the encomium above quoted was without a car. Like several other *chauffeurs* in a similar position, he had accepted an advantageous offer for his vehicle, and parted with it before a new one could be got ready for delivery. It happened, therefore, that he accepted a seat on the second day of the demonstrations in the "spider" of a *voiturette* precisely similar to the one with which he had just parted. Subsequently, I met him on the lawn at Sheen House, and, on my enquiring why he was thus driven instead of driving, he explained the facts as to the sale of his car, and then remarked, with no small enthusiasm, "What a splendid driver he is!" the "he" being, of course, the owner of the car. Here was praise from Sir Hubert indeed! The very driver whose expertness had previously been extolled was now expatiating on the skill of another, and on the very same type of car. This is the more remarkable when one remembers how much more nervous, as a rule, is every automobilist when he is being driven, as compared with when he is himself driving.

A THIRD case which may be mentioned is that of the owner of a fine 12 h.p. car, who was describing to me lately sundry improvements of detail which he had effected in his vehicle. Now it happens that he has enjoyed unusual opportunities of mastering the mechanism of a petrol-driven car, and knows more about its management than most people; yet he was not above confessing that the innovations he had embodied were the result of suggestions from a well-known amateur, of whose mechanical genius he spoke in terms of the highest commendation. Finally he remarked—and it is the originality of the observation that leads me to refer to it herewith—"I have such confidence in Mr. ———'s knowledge, that if he told me that a piece of Gorgonzola cheese in the carburettor would improve the running of my car, I would put that piece of cheese in straight away!" And he meant it.

FRENCH journals are quick to seize upon any incident of street traffic which affords the opportunity for a smile. "Even in the most serious circumstances," remarks the *Auto-Vélo*, "one always finds a humorous note." It then proceeds to relate how, when an explosion occurred the other day at a factory, the police commissary of the district was anxious to hasten to the spot. He chartered a carriage accordingly, driven by a girl "cabman" of twenty years of age, and set off along with his secretary and three policemen. On the way three more "agents" were overtaken, and the commissary stopped the vehicle and ordered them to clamber up behind. As the word to go was given, however, the weight of the extra men caused the cab to tilt backwards, with the horse suspended in mid air. Tableau! Everybody was thrown overboard, but the commissary was the first to scramble to his feet, and anxious to proceed. This, however, was impossible, as the vehicle was in fragments. Then a motor-car appeared on the scene, a manufacturer in the vicinity having brought one up and placed it at the disposal of the commissary, who mounted it forthwith. Just as he was starting off, the carriage and pair of M. Lépine, the well-known head of the Paris police, swept by, but in the next hundred yards the motor-car passed him, and the commissary arrived before his chief. It is hoped that there will now be one police commissary at least who will not treat Parisian *chauffeurs* with severity!

SOME high-falutin' twaddle of the most laughable description appears in the *Councillor and Guardian* as the result of the recent demonstrations. The style of the ponderous editorial which that journal has published may be gauged by the following extract. The County Councillors, it says, "have been pressed

to take gratuitous motor trips in charming and attractive districts, and the extra bait—greedily snapped at by a small minority of such councillors—has been held out of associating for a day, or riding in the same car, with baronets, lords, earls, or even a duke. To these attractions another bribe, conceived on a more lavish and yet subtle scale, has been devised and executed. Last Saturday that wealthy and somewhat exclusive body the Automobile Club, who have secured Sheen House, the former home of the Comte de Paris, as their country club-house, entertained 150 councillors, from thirteen different counties, to a *recherche* luncheon, after a run on the very best and most expensive machines, through lovely roads to Richmond."

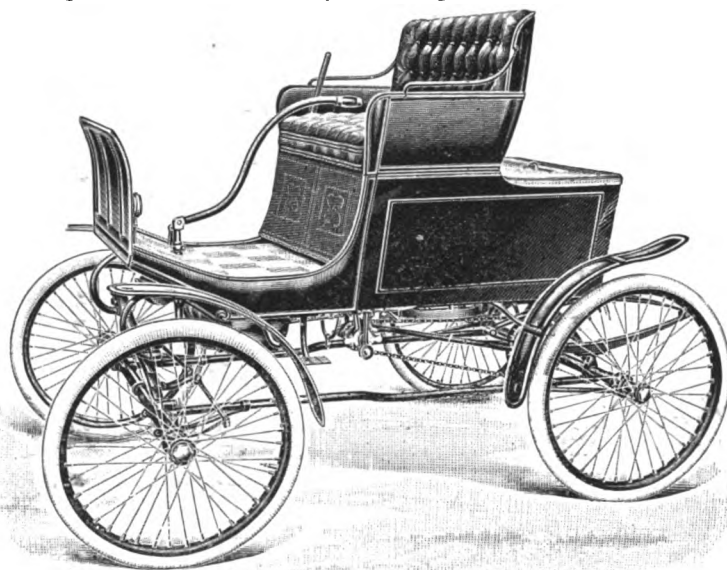
EVERY clause of this rhodomontade is in violent opposition to actual fact. If the district between Whitehall and Sheen be "charming and attractive"—why this tautology?—the *Councillor and Guardian* scribe is indeed easily satisfied. The "bait" of driving with "baronets, lords, earls, or even a duke" was most assuredly not held out to County Councillors, who had no means of knowing, when they received their invitations, who was likely to be present beyond the chairman for the day. As to a simple cold luncheon being a "bribe," the scribe is not particularly respectful to his patrons, the Councillors themselves. One is tempted to retort, as did Samuel Foote when an officious person pulled his elbow and told him that his handkerchief was hanging out of his pocket, "Sir, you appear to know the company better than I do." The Councillors themselves, none the less, will scarcely relish the reflection on their honesty which the scribe lays on with so broad a brush. It has also to be pointed out that the Automobile Club is not a wealthy body; in fact, it has one of the poorest club-houses in London. It has not "secured Sheen House" in any shape or form, wholly or in part. The cars which took the Councillors to Sheen were not necessarily "the very best and most expensive machines"; they were the property of whatever members volunteered their services, and were in no sense picked. As a matter of fact, some were of the very cheapest types. The statement that the cars were all the "very best and most expensive," if it were true, would tell against the scribe, because cars of this description are the fastest, and would have been least likely to convert the Councillors, so that if artful scheming was the chief aim of the Automobile Club no costly car would have been suffered to appear. As to "lovely roads to Richmond" where are they? There is not a single route to Sheen House from Whitehall Court which is not an endless continuity of bumps, and bricks and mortar are never left behind all the way. "Lovely roads!" What a travesty of the case!

IN another place the article refers to the "fair, wide roads to Richmond." Again I say, where are they? It would have been a much better exposition of the capacities of the respective vehicles if they could have been driven on the open road instead of along a traffic route throughout. But the scribe excels himself when he describes the Automobile Club's luncheon—he knows so little about the whole business that he only refers to one—as a "barefaced attempt to change their opinions by appealing to their stomachs and by flattering their appetites. If it is right that a complete revolution should be brought about in our highway administration, let the change be produced by weighty intellectual arguments, and not after this flashy fashion." Methinks the amount of argument the Club has issued on the subject during the last twelve months should be both weighty and intellectual enough to satisfy the brilliant celebration of the *Councillor and Guardian* scribe; but the upshot of the matter is that he palpably knows nothing of his subject, and is not worth further words.

THE latest addition to monthly motor-car literature is the *Reuling Automobile Club Gazette*, which will in future be the official organ of that Club. Besides a diary of Club meetings, runs, competitions, etc., the first number contains much which members will find interesting, including a humorous cartoon depicting a local event, and a sale and exchange column.

THE WESTON STEAM CAR.

THE other afternoon we had an opportunity of inspecting one of the new Weston steam cars which have lately been introduced into this country by Weston Motors, of 14, Mortimer Street, London, W. Generally speaking the car follows the lines and arrangement of the now familiar light steam vehicle, although in the details several variations are to be noticed. The boiler is of the quick-steaming tubular type, it being fitted with 300 $\frac{1}{2}$ -inch copper tubes. One of the special features of the Weston car is the method of starting the fire. At one side of the main burner is a starting box in which is a small cup. By means of a little handle a small quantity of petrol is allowed to flow into this cup from the main supply tank. The petrol in the cup is then ignited by a match; when it has nearly burnt itself out, a second handle is turned, to allow the pilot light to be started. The main burner is regulated by means of a small hand-wheel within convenient reach of the driver's right-hand. By means of this wheel the power of the fire can be varied as desired, according to the quantity of steam required whilst travelling; also when it is necessary to leave the car for a short time, as in making calls, the main fire may be extinguished by means of the



THE WESTON STEAM CAR.

hand-wheel, the pilot light, which is always burning, maintaining a sufficient pressure of steam to allow the car to start away when the passengers are ready. A full head of steam can be raised from cold within ten minutes of starting the fire. The working steam pressure is 180 lbs. per square inch, a safety valve blowing off when 225 lbs. is reached. The water tank has a capacity of 26 $\frac{1}{2}$ gallons, sufficient for a run of twenty to twenty-five miles, according to the character of the roads traversed. Of petrol 6 $\frac{1}{2}$ gallons can be carried in the tank, this being sufficient for from fifty to fifty-five miles. The engine is of the vertical two-cylinder reversing type of 6 h.p. It is located in front of the boiler and transmits its power to the rear axle by a centrally-located chain. In addition to an automatic water pump, an auxiliary hand pump is provided, and in connection with the latter is a regulator under the control of the driver. The body of the car is neatly upholstered and painted; it is supported on springs of the gondola pattern on a tubular frame, which in turn is carried on 28 in. cycle-type wheels, shod with 2 $\frac{1}{2}$ in. pneumatic tires. Tiller steering is provided, while a pedal actuates a band brake on the rear axle, this acting equally well be the car running backwards or forward. The car can average a speed of sixteen miles an hour, while as to its hill-climbing capabilities we may mention that it has been driven up Netherall Gardens, N.W.—a grade of about one in five—at a speed of eight miles per hour.

THE GENERAL AUTOMOBILE AGENCY, D. Farman, Man., Carage open day and night, all cars in stock, 100-104, Long Acre, W.C.

LADY MOTOR-CAR DRIVERS.



WE hear that the proprietor of the Liverpool and Birkenhead Motor-car Works has invested in a novelty in the shape of a lady-motorist, who has lately joined his squad of drivers. Truly, the possibilities for ladies in the future of the motor world are enormous, and how expansive is the view from the present summit of the hill of motordom. As we ponder on the vista which opens up before this particular lady and many more who may follow in her steps we cannot but wonder that crowds of fair creatures (and "stylish," as the advertisement stipulated) have not clamoured for such a post as this.



THIS

OR

THIS.

We presume that the said lady is required to perform the same duties as the other drivers attached to the establishment whose staff she has now joined—that is, taking intending clients for preliminary trial-spins, trying new cars, driving hirers of cars who cannot drive themselves, and teaching clients to drive, etc. If the lady is young and charming—as no doubt she is—we foresee a big trade for the motor depot in Berry Street, Liverpool; for who would not "mote," who could, with a fair hand to guide the barque on its airy flight and to initiate the attentive novice into the mysteries of the machine, and a sweet voice to wheedle the cheque-book from one's pocket.

On a delicate point we profess a slight feeling of doubt.



STUDYING THE MECHANISM.

Will the lady don a peaked leather cap, or wear a toque and veil? Shall it be mackintosh overalls or a frilled skirt? And what a sight to see the female form divine prostrate beneath the refractory self-propelled nag! Then think what a hay-time for the drivers, students, and motor workers when this moting butterfly alighted amidst the busy buzzings of the humdrum life of the motor workshop. Again, if this said butterfly arrived

in an unsophisticated state of mind as regards the fearfully and wonderfully made gee-gee, we confess we perspire with envy of the lucky beggar to whom falls the duty of enlightening the dear creature. We suggest probable sweet little *lête-à-têtes* in the suburbs—two heads bent as one over induction coils and sparking plugs, four busy hands contesting and making a mash of the difficulties of lubrication, or the airy barque floating itself into the ditch in blissful moments when steering levers are forgotten. Our forecast prophesies shoals of eager customers (not ladies!), all simply dying to purchase and solve the problem "motor."



EN ROUTE.

If the lady under discussion is not a ready learner in the engineering line, we shall wonder greatly, in these modern days when women are making headway in almost every trade; but if, on the other hand, she is of a mechanical and business turn of mind, and is successful in this line, our mind's eye foresees a little picture of the butterfly on the flit with the chief driver, or manager, or fascinating student, say, and a probable rival motor factory further off. Ah! that such should be the way of the world, that motor-men as well as others should be soft-hearted.

ANITA.

MESSRS. COOKE AND WADE have opened motor-car show-rooms in the Cutlers' Hall, Sheffield.

MR. J. W. STOCKS intends starting from Land's End, on Sunday morning next, on an end-to-end tour on his Ariel tricycle.

MESSRS. ARTHUR JONES AND H. P. DYER, two Cleveland business men, left New York the other Saturday for a leisurely transcontinental automobile trip, which they expect will terminate in San Francisco within ninety days.

ON Saturday last, the 15th inst., the members of the Reading Automobile Club held a run to Fleet, near Aldershot. To-day, the 22nd inst., they will hold a run from Reading to Swallowfield Park.

MR. J. LEONARD, of Western Terrace, Phoenix Park, Dublin, has discovered that some motor-car owners actually drive their vehicles with a total disregard for the rights of other users of the King's Highway. This discovery comes late in the day, for motorists long ago found owners of horse-drawn vehicles similarly negligent of the rights of others.

THE Auto-Carriage Company, Limited, has been registered with a capital of £20,000, to adopt an agreement with L. Ruef and F. Lane, and to carry on the business of manufacturers and letters to hire of motor-cars, etc. The first directors are F. Lane and C. S. Gulbenkian. The registered office is at 106, Great Portland Street, London, W.

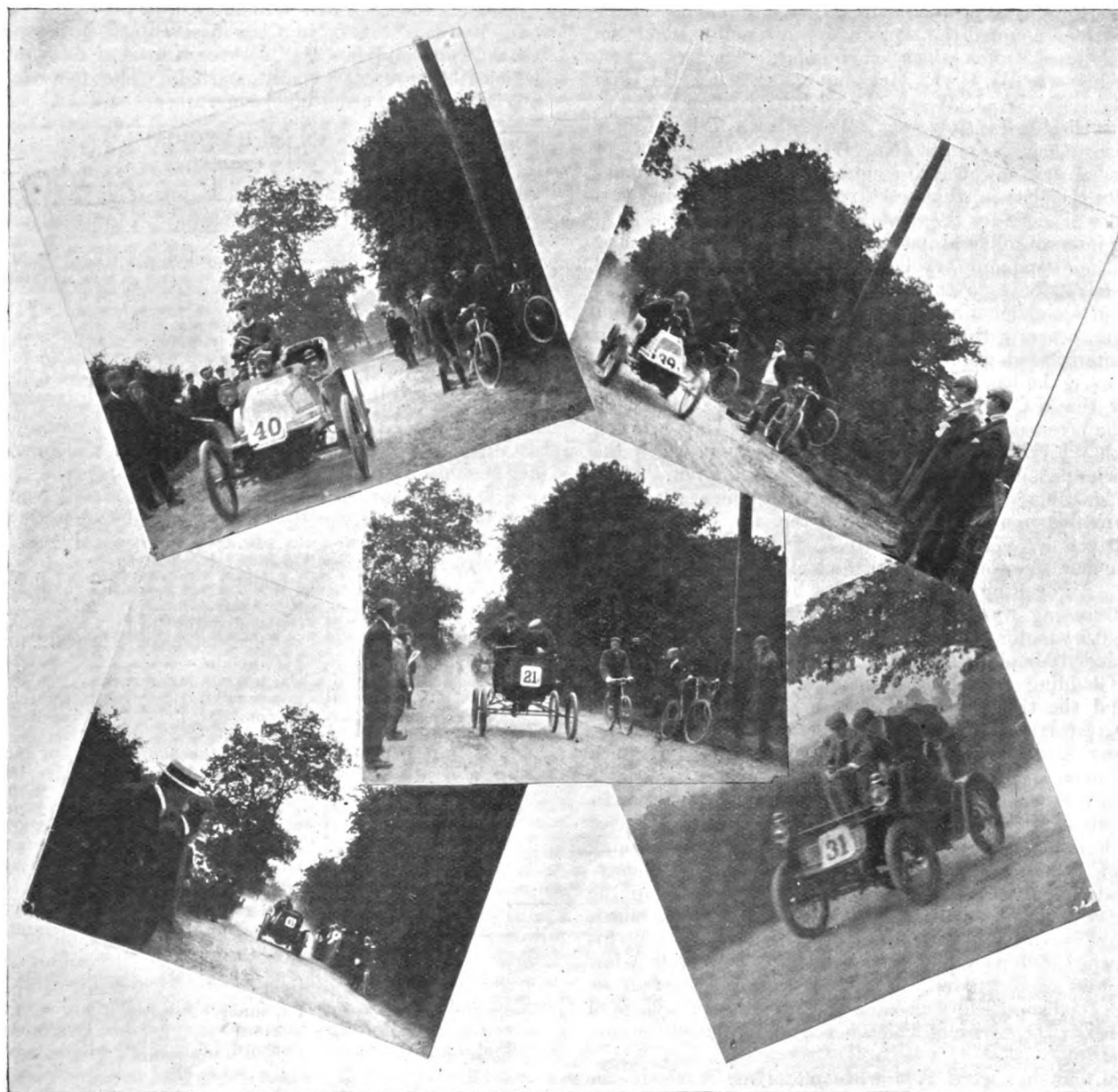
Milling in a recent issue remarks: "Millers have frequently written to us complaining of the great wear and tear of horse flesh, and for this reason alone we fully expected to see quite a number of the trade at George's Dock, Liverpool, in connection with the trials of heavy motor-vehicles. Several who were present decided to buy motor-wagons, and it is evident that it will not be long before we see a great revolution in our modes of haulage."

HILL CLIMBING AT TILBURSTOW.

THERE was an ominous look in the sky and more than a suggestion of keenness in the wind when we decided to go to Tilburstow and witness the English Motor Club's Hill-Climbing Contest, on Saturday last. This resolve was taken soon after mid-day in town, and was immediately followed by a positive craving for two long-forgotten comrades—macintosh and umbrella. A glance at a timetable, however, convinced us that we must forego the comfort of their companionship if we were to catch the two-something from Cannon Street to Godstone.

On the way down we scraped acquaintance with two men from a far country. They were open to conviction regarding the advantages of motoring over every other kind of locomotion, but, as they explained, their country was a hilly one, and they still had some doubts; hence their journey to Tilburstow. We are glad to record that before the day was out their conversion was complete.

At a wayside station we picked up a couple of rustics who informed us that they were going to the hill to see the car that won the big French race! Not one of us had the moral courage to damp their enthusiasm with the cold waters of truth. On



MR. EGERTON'S 12 H.P. DARRACQ.

MR. EDGE ON THE 50 H.P. NAPIER.

MR. C. JARROTT ON THE 10 H.P. DE DION SPIDER.

MR. GINDER ON THE LOCOMOBILE.

MR. S. T. HONE ON 4½ H.P. DE DION VOITURETTE.

In spite of a liberal supply of fuel, and a modest amount of lubrication taken in by the way, the outlook was decidedly gloomy as seen through the opaque dinginess of that part of Cannon Street station which most nearly approaches the sky. As little consolation was to be derived from looking heavenwards, we turned our eyes, whilst waiting for the train, to the more mundane things to be seen on a bookstall, and from these derived some comfort. As the train crossed the river out came the sun, to shine for the rest of the day, too.

the hill we afterwards found that the same pleasing fallacy was prevalent, a gratifying proof that the much handicapped Englishman who will uphold the honour of his country on a foreign road can do much to popularise the new order of things in the mind of the masses.

A pretty country walk of about two miles, down a lane and up the reverse, or southern slope of Tilburstow Hill, brought us to the summit just about the starting hour—4 p.m. From here to the starting point—a bridge which crosses a small stream at

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the foot of the northern slope—is 1,214 yards, or about three-quarters of a mile. The gradients of the hill from the bridge at the foot are—1 in 17 for 408 yards, 1 in 13 for 333 yards, 1 in 11.9 for 175 yards, 1 in 11.5 for 38 yards, and 1 in 87 for 260 yards to the summit. To make the course just two-thirds of a mile the finishing point was fixed forty-one yards short of the summit. The road winds in and out of timber, so that one can seldom see much more than a hundred yards of it at one time. By climbing the wooded banks which crown the crest, however, the greater part of the ascent is visible.

Scarcely had we ascertained these interesting facts when a shout from the crowd that had taken possession of the corner of a lane, which leads to Bletchingly, two hundred yards lower down, set those on top fluttering with anticipation. A moment later three competitors mounted the slope in a bunch and entered the comparatively level stretch which led to home. Among the first to cross the line was Mr. C. K. Gregson on a $3\frac{1}{2}$ h.p. De Dion car (No. 34). Mr. W. J. Westfield, pedalling hard on a $1\frac{1}{2}$ h.p. De Dion tricycle (No. 14), was next, followed by a 7 h.p. Motor Manufacturing Company's car (No. 27). The actual value of order of arrival was, however, discounted by two separate handicaps: one for the class in which each vehicle competed, and one for final order of merit for the whole.

A long interval followed, punctuated by the arrival of many dismounted non-competing cyclists, panting, perspiring, and pushing, a fair tribute to the steepness of the course. Next came in rapid succession a mixed lot of light cars, some with but one passenger, others with family parties, and one with a lunch basket. Interspersed were motor-bicycles and tricycles, their riders well over the handles, and pedalling hard in spite of hints dropped by the N.C.U. as to possible penalties. About the middle of the procession came Mrs. Kennard on a $2\frac{3}{4}$ h.p. De Dion tricycle with Whippet trailer, looking cool and happy, which the *mecanicien* who pedalled hard from the back seat did not. More cars, some groaning as if in pain, and others gliding past noiselessly, noticeable amongst the latter the $4\frac{1}{2}$ h.p. Empress (No. 28), driven by young Cusins-Nixon, and the Enchantress, one of the new Weston steam cars, which, however, was not competing. An exciting finish to the lay eye was provided by Mr. Begbie passing Mr. Heard within fifty yards of home, both driving Century motor tandems. The next few arrivals at the summit included Mr. Jack Lawson on a 8 h.p. Panhard (No. 44), Mr. J. H. Gladding and three passengers on a 9 h.p. Napier (No. 38), and the three Locomobile steam-cars (Nos. 21, 22 and 20) driven respectively by Messrs. Ginder, Letts, and Stevens, the easy way in which the latter negotiated the hill being much commented upon.

Heavier cars which next began to arrive raised expectation to its highest pitch. Mr. Mark Mayhew came along at a terrific pace in his 20 h.p. Panhard. Then a roar from below, a rushing sound as of a mighty wind, as a shout of "Here he comes" from all sides, apprised us, ere we had time to scuttle up the bank, that the shade of Elijah, in a halo of dust, was in our midst. Before we realised what had happened Mr. Edge had pulled up his world-renowned 50 h.p. Napier thirty yards further on. A few more large cars came up well, then, the last having arrived, we walked over the battle-field and came to the pleasant village of Godstone, about the centre of which is the old-fashioned Clayton Arms Hotel.

Village and inn were alive with motorists. About the streets of the former wise men led young horses amidst standing and moving cars, that they might know the smell of petrol; and from cellar to garret of the latter were signs of that prosperity which has come to many a village since Englishmen, and Englishwomen too, have thrown off their allegiance to railways. Relatively very few of the competitors and visitors stayed for the dinner at the Clayton Arms, which followed the competition, but the repast in the ancient *salle* of the hostelry with its quaint old ceilings and decorations was not the least pleasant part of the day's proceedings. About thirty sat down to the dinner, among this number being Mr. Mark Mayhew (in the chair), Mr. F. W. Baily, Mr. S. F. Edge, Mr. C. Jarrott, Mr. G. H. Smith, Mr. Napier, Mr. W. Letts, Mr. S. Begbie, and Mr.

A. W. Heard. Shortly after 8 p.m. a move was made for the courtyard, in which, in a few moments, the now familiar sound of motors in operation was heard, and one by one the motor-vehicles, each with its complement of passengers, took their departure to various destinations, while others not so fortunate made their way home a wheel or by train.

The event was undoubtedly a great success. As has already been stated in these columns, the competition was divided into the following sections:—(1) Motor-bicycles; (2) Motor-tricycles up to 3 h.p.; (3) Motor-tricycles above 3 h.p.; (4) Motor quadricycles up to $3\frac{1}{2}$ h.p.; (5) Cars up to 7 h.p.; (6) Cars up to 9 h.p.; (7) Cars up to 16 h.p.; and (8) Large cars above 16 h.p. When the list of entries was closed it was found that in Class 1 six machines had been entered, in Class 2 eight, in Class 3 two, in Class 4 two, in Class 5 seventeen, in Class 6 three, in Class 7 six, and in Class 8 three, a total of forty-seven, out of which thirty-seven actually started. The following are the official times and order of placing.

CLASS HANDICAPS.

CLASS 1.				No. of persons carried.	H'cap start allowed.	Actual time.
Result.	Owner.	H.P.	Machine.			
1.	H. J. Lamb	$1\frac{1}{2}$	Werner bicycle	1	0 20	2 6 4.5
2.	J. Leonard	$1\frac{1}{2}$	" "	1	scratch	2 2 2.5
3.	T. H. Tessier	$1\frac{1}{2}$	" "	1	"	2 7 2.5
CLASS 2.				No. of persons carried.	H'cap start allowed.	Actual time.
Result.	Owner.	H.P.	Machine.			
1.	F. Flutter	$2\frac{3}{4}$	De Dion tricycle	1	0 15	1 45
2.	T. Parrish	$2\frac{3}{4}$	" "	1	0 15	1 46
3.	R. Denniss	$2\frac{3}{4}$	Speed King tricycle	1	0 15	1 52 2.5
	M. Moyle	3	De Dion tricycle	1	scratch	1 44 4.5
	T. L. Spencer	$2\frac{3}{4}$	M.M.C. tricycle	1	0 15	2 21 3.5
	W. J. Westfield	$1\frac{1}{2}$	De Dion tricycle	1	0 50	2 32 2.5
	L. Jones	$1\frac{1}{2}$	De Dion tricycle	1	0 50	3 37 2.5
CLASS 3.				No. of persons carried.	H'cap start allowed.	Actual time.
Result.	Owner.	H.P.	Machine.			
1.	T. Maltby, jnr.	5	De Dion tricycle	1	0 10	1 40 3.5
2.	C. Jarrott	8	De Dion tricycle	1	scratch	1 42 2.5
CLASS 4.				No. of persons carried.	H'cap start allowed.	Actual time.
Result.	Owner.	H.P.	Machine.			
1.	Mrs. Kennard	$2\frac{3}{4}$	De Dion tricycle and trailer	2	0 25	4 49
CLASS 5.				No. of persons carried.	H'cap start allowed.	Actual time.
Result.	Owner.	H.P.	Machine.			
1.	C. K. Gregson	$3\frac{1}{2}$	De Dion voiturette	1	3 35	3 18 2.5
2.	S. T. Hone	$4\frac{1}{2}$	De Dion voiturette	2	2 10	3 13
3.	A. Ginder	$5\frac{1}{2}$	Locomobile	2	scratch	1 46 3.5
4.	A. E. Crowdy	6	Darracq	2	40	2 37 1.5
	T. J. Morse	$5\frac{1}{2}$	Locomobile	2	scratch	2 12 1.5
	W. M. Letts	$5\frac{1}{2}$	Locomobile	2	scratch	2 25 2.5
	E. G. Stevens	$5\frac{1}{2}$	Locomobile	2	scratch	2 40 1.5
	S. D. Begbie	5	Century tandem	2	10	2 40 2.5
	A. W. Heard	5	Century tandem	2	10	3 24 4.5
	H. Johnson	5	Peugeot	2	2 10	5 18 4.5
	G. H. Smith	$4\frac{1}{2}$	Empress	2	2 10	5 52 4.5
	C. W. Brown	$3\frac{1}{2}$	Pieper	2	3 45	5 54 4.5
	Motor Mfg. Co.	7	M.M.C. phaeton	1	45	5 59
	E. Midgley	$5\frac{1}{2}$	Gladiator	4	2 30	6 22 2.5
CLASS 6.				No. of persons carried.	H'cap start allowed.	Actual time.
Result.	Owner.	H.P.	Machine.			
1.	J. H. Gladding	9	Napier	4	45	3 32 2.5
2.	Motor Car Co.	$8\frac{1}{2}$	Decauville	2	scratch	4 34
CLASS 7.				No. of persons carried.	H'cap start allowed.	Actual time.
Result.	Owner.	H.P.	Machine.			
1.	C. Jarrott	10	De Dion Spider	1	scratch	1 37 1.5
2.	C. Jarrott	16	Panhard	1	15	1 52 2.5
3.	H. du Cros, jr.	16	Panhard	1	15	2 3
	M. Egerton	12	Darracq	1	scratch	2 24 1.5
	J. Lawson	8	Panhard	1	40	2 50 3.5
CLASS 8.				No. of persons carried.	H'cap start allowed.	Actual time.
Result.	Owner.	H.P.	Machine.			
1.	S. F. Edge	50	Napier	2	scratch	1 7 4.5
	M. Mayhew	20	Panhard	2	15	1 27

HANDICAP FOR TOTAL ENTRIES.

1.	C. K. Gregson	$3\frac{1}{2}$	De Dion voiturette	1	3 55	3 18 2.5
2.	S. T. Hone	$4\frac{1}{2}$	De Dion voiturette	1	2 30	3 13
3.	C. Jarrott	10	De Dion Spider	1	35	1 37 1.5
4.	C. Jarrott	16	Panhard	1	50	1 52 2.5
5.	H. J. Lamb	$1\frac{1}{2}$	Werner bicycle	1	1 2	2 6 4.5
6.	S. F. Edge	50	Napier	2	scratch	1 7 4.5

It will be noticed that in several cases it was not the fastest vehicle which secured the premier positions in the awards; this is accounted for by the handicap allowances, and here it may be mentioned that some surprise and amusement were caused by Mr. Gregson climbing the hill in 17 sec. less than his handicap time.

We may add that Messrs. F. T. Bidlake and Mr. H. J. Swindley acted as the timekeepers. Mr. Edge, on the big Napier, naturally made the fastest time. Comparing the results with last year, there was an all-round reduction in the times, with the curious exception of the tricycles. At the 1900 competition, Mr. C. Jarrott, on a De Dion tricycle, climbed the hill in 1 min. 36 1-5sec.; this year, on a more powerful machine, his time was 1 min. 42 2-5sec., Mr. Maltby making the best record with 1 min. 40 3-5sec.

ON PURCHASING SECOND-HAND CARS.

PERHAPS the most inveterate time-tax on the "hardened automobilist" (the epithet, which the writer lately heard applied to an enthusiastic devotee of the motor, seems almost worthy to take rank with the cabman's description of Mr. Grossmith) is, with the present influx of new recruits to the movement—the time is past for alluding to it as a *pastime*—the demand for advice as to the acquisition of their cars. Where the purchase of new machines is in question, such advice is usually given freely and with judgment, whether always unbiassed or not lies not with us to ask; but when secondhand cars are the subject of inquiry, it is not so easy to advise, and the cautious motorist hesitates to express an opinion without more consideration than, perhaps, he is able to give to the particular case. The uninstructed novice, however, to whom a car is a car, is liable to be tempted by an apparent bargain, and though such are to be had, the probabilities are that in the absence of expert advice the result will be disappointing. There is, notwithstanding, the consideration that defects in a car, if it be not an utterly bad one, can be remedied, and such complete disappointment as may, for instance, follow a deal in hay-motors is a very unlikely contingency; and an enumeration of the points to be considered in appraising a second-hand vehicle may be of some assistance to those intending to purchase such.

The prudence of considering only the vehicles of the few old-established firms will be especially obvious, as, except as a speculation for a man of mechanical tastes the purchase of more or less experimental and discarded patterns of newer makers will be little likely to prove satisfactory; while the probable facility of obtaining replacement of worn parts at a reasonable cost should be taken into consideration. Large and low-powered cars will generally be in better condition after a given amount of travelling than faster ones; while light voiturettes, more particularly with regard to their small high-speed engines, will depreciate rapidly with moderately hard wear, though cycles have, as a rule, a long life, barring the result of accident, and depreciate more owing to the demand for more power and to their diminution in popularity than to any intrinsic deterioration.

The first thing to attract the 'untechnical critic's eye, namely the exterior appearance of a vehicle, is, it is needless to say, of little importance; paint and varnish deteriorate rapidly under automobile conditions, and the cost of restoring them is sufficiently well-known, as is also that of tire renewal; but, in the case of solid-tired cars more particularly, the state of the rims is some indication of the wear they have suffered. The wheels should be examined for truth and correct tracking, while—especially where light vehicles are concerned—a back and front view of the car will show whether any "splaying" or convergence of the tops of the wheels betrays weakness or excessive loading of the axles. A trial trip will presumably be forthcoming, and though a single bad performance will not damn a car—or few indeed would be saved—the owner may be expected to show her if possible at her best, and an opportunity will be afforded of noting excessive rattle, jar, or looseness of parts, state of brakes, and hill-climbing powers, which should if practicable be tested on gradients familiar to the purchaser. Where ball-bearings exist they should, or one of the main ones at least, be inspected for wear, loose cups, etc., and in default of this by spinning, shaking, and so on, when the axle is raised by a jack. The raising of the back axle, so that both wheels are off the ground, will enable some idea of the condition of the differential gear to be gained;

when one wheel is revolved the other should rotate in the opposite direction freely and without too much backlash, where a live axle is in question; where it is on the countershaft there is more difficulty in seeing this, except in cars where its pinions are open to inspection.

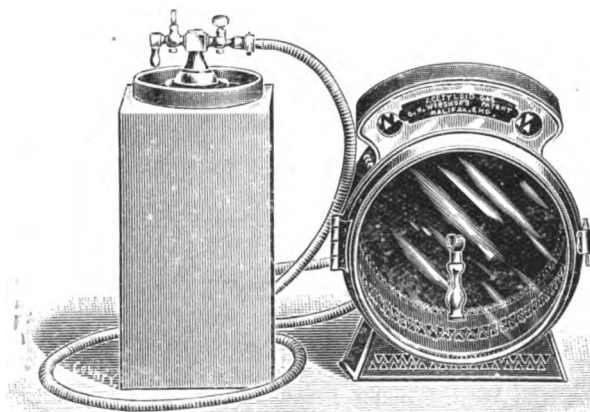
With a gear-driven car, the gears should on no account be left unexamined, as their condition is an excellent index to its state of health and the amount of care it has received; the amount of wear on the faces of the teeth is of course more significant than the battering of their ends due to careless changing, while looseness of the gear-shaft bearings may be looked for at the same time.

Last, but not least, the engine itself will claim attention. Its compression and tightness in main and piston-rod bearings can usually be tested with the starting handle, though any serious looseness in these will be manifested by a knock when the engine is running; but perhaps the best test of the age and experience of an engine lies—as with a horse—in its teeth, namely, in the state of the pinions of the half-speed or valve-shaft, which should have a pretty long life, and hence are not likely to have been replaced—accidents apart—unless it has arrived at the stage of having a thorough and extensive repair. If these are badly worn, one would be inclined to think its miles had run well into the tens of thousands. Though the merest generalisation is all that is possible, without considering a particular case, no scientific method of integrating the various observations which are here suggested can be supplied to take the place of experience and common sense on the part of the intending purchaser of a second-hand car, who if he be devoid of the first will be well advised to call in a reliable opinion—if available—before making up his mind.

R. W. BUTTEMER.

FIRED by the success scored by the Ayscoughfee Fête Committee in their motor-car meet on Whit Monday, Grantham is desirous of arranging a similar attraction on August Bank Holiday.

AN alcohol motor-vehicle speed contest is being organised for the 7th July between Paris and Braisne, a distance of 127 kilometres. There will be four classes, ranging from voiturettes up to big cars. It is also proposed to organise a kilometre contest for automobiles propelled by motors consuming alcohol, over a straight course at Braisne.



MESSRS. WORSNOP AND CO.'S ACETYLROID MOTOR-CAR LAMP.
(See page 281, ante.)

THE wager of 10,000frs. between M. Cannello and M. Charron, to the effect that the former should produce within three months a car weighing not more than 1,200 kilogrammes and capable of doing two kilometres in one minute, is technically lost by M. Cannello, who is not quite ready with his car, and has asked for more time. In a very sportsmanlike way, however, M. Charron has foregone his claim to the stakes, and is willing to wait until the car is ready. Moreover, he is still so confident that he is ready to wager another 10,000frs. and wait even another three months.

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CONTINENTAL NOTES.

BY AUTOMAN.

MY remarks on the lessons to be learned from the Paris-Bordeaux race, in connection with the running of the Napier car, have evidently not been quite understood by Mr. Edge, and I am glad that he brings the fact forward in his letter to the *Journal* of last Saturday. I am glad, because the whole object of my criticism is for the benefit and improvement of British manufacture of motor-cars in comparison with foreign, and particularly French, competition. I say particularly French, because undoubtedly France is a full year or more in advance of us, and it is only by first clearly understanding the why and the wherefore that the British manufacturer can bring himself up to date, as I believe he will do in the end.

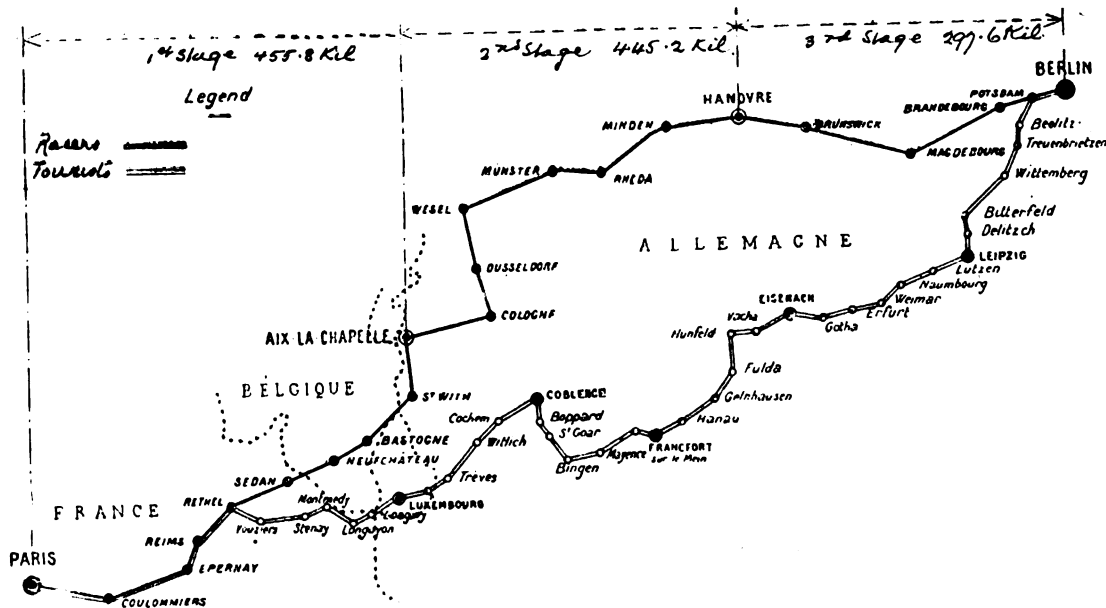
WHEN I alluded to the weight of the Napier car, I said nothing about the weight per horse power, but I showed that high horse power is of no use, if great attention has not been paid to reducing the weight. That my criticism is well founded is clearly demonstrated by Mr. Edge himself, for he claims that the Napier car is as fast as, if not faster than, the best French cars. But if brake horse power per cwt. were the true test of a motor-car's

future the weight of racing cars to about one ton: a judicious limit, taken in connection with a given passenger-carrying space, would in my opinion be very advantageous.

THE German Emperor's prize in the Paris-Berlin race has taken the shape of a silver vase, bearing the inscription "The Emperor William II. to the Winner of the Automobile Race from Paris to Berlin, 27th to 29th June, 1901." The prize money from the different donors will be more than £4,000.

THE Moto-Club of Belgium has petitioned the Brussels authorities to establish a special police force mounted on bicycles in order to control the excessive speed of motor-cars. The authorities, you may be sure, have readily adopted the suggestion, and now everyone is speculating as to how the members of the Moto-Club will like it when they are summoned by the police which their Club has been instrumental in establishing.

MOST of the readers of the *Journal* have seen the "Brocken"—if not in its reality, at least in cardboard and paint, with Mephistopheles and Faust, and the accompaniment of lightning and flames. In neither case does it seem an inviting place for a



ROUTE MAP OF PARIS-BERLIN RACE.

Cliché de

(L'Auto Automobile).

speed, the Napier, with somewhere about 3 h.p. per cwt., should have attained a far greater speed than any of the big cars.

Of course in the untried state in which the car was run it could not have been expected to make a record, but if it had any claim to the proportionate speed calculated from the weight per horse-power it would have shown it for a spell, and passed anything on the road. When I saw it outside Chartres it was certainly going strong, the engine beating up grandly, but I never heard of it passing any other car, whereas the fast cars seem to have gained on it and passed it regularly. Unofficial timing on the road reports its speed between 100 and 110 kilometres an hour, but unofficial timing also reports Fournier as doing as much as 124, and whilst I was waiting for the cars to go by I saw M. Charley return from a trial run on M. Dannat's Mercedes, which did the kilometre in thirty seconds.

THE history of Panhard and Levassor's success is to be read, I believe, in the reduction of weight, and if Mr. Napier will apply his undoubted genius and Mr. Edge his energy towards that end, I think they will stand a chance of bringing home the Cup next year. At any rate, in this case the wish is father to the thought with Automan. I am not the only one to condemn weight, and there is a very sensible proposition on foot to limit in the

run in an automobile. Its difficult heights have, however, been climbed by a party of up-to-date motorists from Vienna, who succeeded in negotiating 18 and 20 per cent. inclines leading up to the summit, which is at an altitude of some 3,600 feet above the sea level.

I WAS invited to visit the other day the works of Messrs. Koch Frères, in Paris, where they assemble their heavy oil carriages, and I was also shown over the works of Messrs. Sautter, Harlé, and Co., where the Koch motor is manufactured. M. Koch himself kindly piloted me, and gave me some interesting details. In his motor there are two pistons acting opposite each other from a single explosion chamber, and although he uses preferably heavy oil—paraffin or kerosene—for reasons of economy, the motor will run with petrol. I even saw it running with alcohol. In the Koch motor-car the motor is carried on a central shaft, on which it would be free to revolve were it not for two spring stays, one at each side of the motor. The object of this ingenious arrangement is to reduce the vibration, which it certainly does to a remarkable extent.

I WAS most interested in a motor-lorry, which I urged M. Koch to send off to Liverpool to Mr. Shrapnell Smith's heavy trials. The lorry, however, was destined for Madagascar, to

which country Messrs. Koch have already sent a car, and there was not time enough to send it to Liverpool. The lorry weighs 30 cwt., and carries from 30 to 40 cwt., at an average speed of from 5 to 5½ miles per hour, climbing hills of 10 per cent. fully loaded at a speed of 2½ miles per hour. The motor is of 10 h.p., and there are three speeds and reverse. The motor consumes about 1½ gallons of heavy oil per hour, or per five miles, and is water-cooled. There is a novel system of water-cooling: the radiator is helical in form, and is contained in a sheet-iron cylinder, at one end of which is fixed a fan in such a manner that the air is drawn through the radiator and the water kept at an even temperature, though the engine may be running whilst the car is standing. Less than half a gallon of lubricating oil is required for a day's journey of fifty to fifty-five miles. Three of these lorries are bound for Madagascar.

PRINCELY prizes keep on appearing in the Paris-Berlin race. Amongst the latest donors are the Grand Duke of Luxembourg and the Grand Duke of Mecklenburg-Schwerin. Although a sufficient number of subscribers did not apply in time for the A.C.F. to engage the special train to follow the race, the A.C.F. are organising special sleeping cars to be attached to the ordinary trains. On Monday and Tuesday, 25th and 26th, the competing cars will be numbered and marked at the headquarters of the A.C.F.

The following is the official route for the Paris-Berlin race, with the approximate distances in miles:—

FIRST STAGE (282 MILES).	
CHAMPIGNY—AIX-LA-CHAPELLE.	
Fort de Champigny (start).	
Fontenay	17 miles.
Epernay	80 "
Reims	97 "
Poix	139 "
Sedan	155 "
Sachy	165 "
Messempré (Customs)	166 "
Longvilly	214 "
Steinmetz	228 "
Büttgenbach	252 "
Montjoie	263 "
Aix-la-Chapelle	282 "

SECOND STAGE (279 MILES).	
AIX-LA-CHAPELLE—HANOVER.	
Aix-la-Chapelle	282 miles.
Cologne	321 "
Düsseldorf	352 "
Duisburg	368 "
Wesel	389 "
Dülmen	423 "
Münster	441 "
Rhedan	475 "
Bielefeld	490 "
Minden	518 "
Gross-Neundorf	542 "
Hanover	559 "

THIRD STAGE (184 MILES).	
HANOVER—BERLIN.	
Hanover	559 miles.
Brunswick	599 "
Erxleben	635 "
Magdeburg	653 "
Jenthin	684 "
Brandenburg	702 "
Potsdam	726 "
Berlin	743 "

MR. JAMES GIBSON has achieved a run which, all things considered, and notably the state of the roads traversed, is worthy of record. Leaving Hebden Bridge, accompanied by Mrs. Gibson, he reached Blackpool, 54 2-5 miles distant, in four hours and twenty minutes, by way of Todmorden, Burnley, Padiham, Whalley, Preston, and Lytham, on his 3½ h.p. De Dion voiturette. Two stops were made *en route*—the first at Lytham to take up Miss Gibson, and the second a mile or two from his destination for petrol. The homeward journey of fifty-six miles was still more successful, being undertaken with three passengers and unmarked by a single stop, the speed working out at exactly 13 11-25 miles per hour.

CORRESPONDENCE.

WET AND DRY BATTERIES.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I notice in your last issue that Messrs. Bridgewater and Co. state that out of many thousand sets of Meyra dry cells there have been no complaints. May I state that I have never found a Meyra battery to last, and have discontinued to recommend them. I much prefer accumulators, as, if charged carefully, you at least have a good idea as to how much electricity you have left. I may say I have nothing personally against the Meyra Company, but think that Messrs. Bridgewater's statement is a little exaggerated.—Yours faithfully,

G. H. BECHTEL.

A GOOD RUN ON A MOTOR-BICYCLE.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—It may be interesting to your readers who are, or are about to become, interested in motor-bicycles to have particulars of a fine run I had on an Excelsior motor-bicycle last Sunday. I started from Harpenden at 4.15 a.m. and ran to the other side of Royston, 31 miles, in one hour and 45 minutes, stopped ten minutes to oil up, and then ran, *via* Newmarket, to Thetford, arriving at 8.45 a.m. After stopping twenty-five minutes for breakfast, a start was made for Norwich, which was reached at 10.45 a.m. I stopped here twenty-five minutes to examine the machine and see that all was secure and then went on to Yarmouth, arriving there at 12.15 p.m. From Yarmouth I went on to Lowestoft and to Gorleston, where a stop was made for tea, then on to Yarmouth. The latter town was left at 5.45 and a run right through to Newmarket was made, arriving at 9.30 p.m. I left Newmarket for home shortly afterwards, and arrived at 1.20 a.m. after a very enjoyable ride. The total distance by my cyclometer was 274½ miles, the consumption of petrol being seven quarts. The machine and engine caused me no trouble whatever, excepting a few minor details, which were very easily put right. I felt no vibration, and never thought of side slips, which are out of the question on my machine.

This performance, I think you will agree, argues well for the stability and construction of the Excelsior motor-bicycle, which is undoubtedly a grand machine. I intend shortly to run to the Glasgow Exhibition and back on it, and will let you know how I get on.—Yours faithfully,

H. W. LAWRENCE.

YORK TO LONDON.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Recently I applied to a railway company for their charge for conveying a motor-car from York to London. As the price asked was £7 10s., I determined to take the car, an 8 h.p. Serpollet, by road myself. Leaving York at 2 a.m., I was in London at 9.30 p.m. the same evening. During the run of 199 miles, not a single bolt or pin gave way, and the total cost of the trip was 21s. 8d. Of this, 17s. 8d. was for fuel, and 4s. for lubricating. After loading up the last time, I ran sixty-four miles without a stop. The run is, I believe, a record for the Gardner-Serpollet in this country. I have been informed that many owners of these cars are giving them up because of the difficulty of finding men to run them. I think that to do so would be a great mistake, and rather than see this done, I shall be pleased to send instructions to anyone who cares to write for them.—Yours truly,

F. HUNT.

COST OF REPAIRS.

TO THE EDITOR OF *The Motor-Car Journal*.

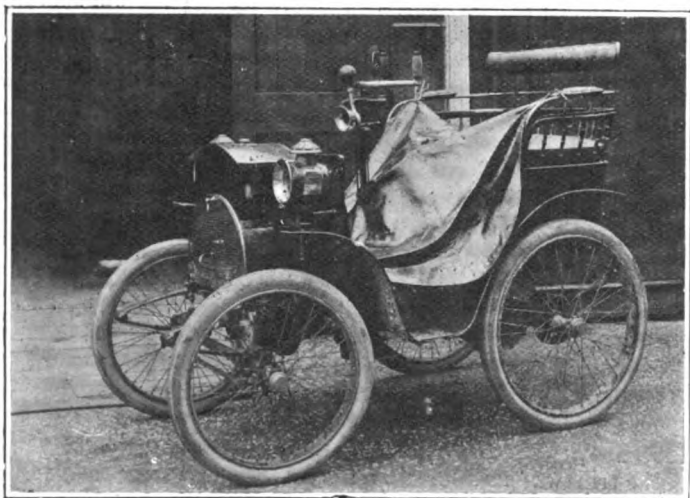
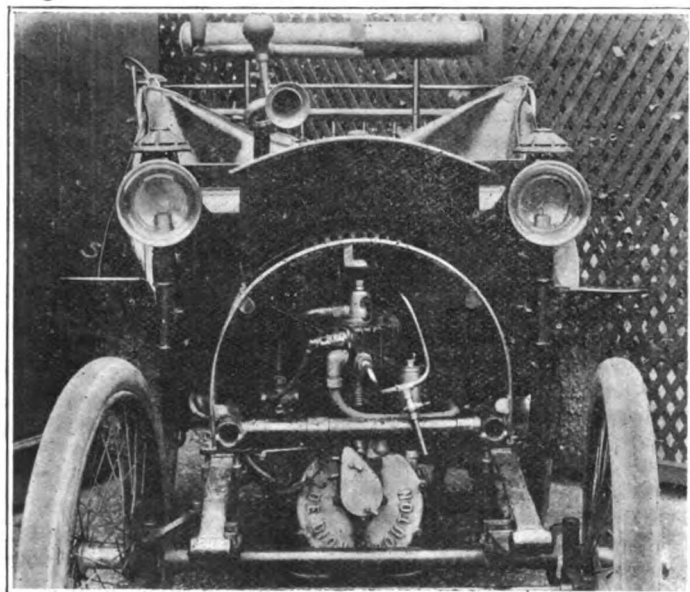
SIR,—Reading on page 263 of your valuable *Journal* of June 8th, "Dr. B— P—, of W—, shows that in his case the repairs during a year and three months' use cost only ½d. per mile," I should be interested to know to what type of vehicle he refers, what mileage he covered, and on what tires.—Yours truly,

A. H. NISTER.

EXPERIENCES OF A WATER-COOLED HEAD.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I am the possessor of a small Renault car, fitted with a 2½ h.p. De Dion engine, and after an experience of twelve months, spent in experimenting in various ways, I have pleasure in giving same to my fellow readers, as I myself have profited considerably through your paper. When I first purchased the car it was fitted with a dry battery and was air cooled. I noticed the engine ran very irregularly, and very often stopped on a moderate hill, especially in warm weather. I was continually adjusting the trembler and electrical parts with very indifferent success. At this time I was induced to purchase a Woven-glass accumulator through reading an article in your paper. Being an



amateur mechanic I possess a small workshop, fitted up with ½ h.p. gas engine, lathe, and dynamo, etc., so could charge the accumulator myself at a very small cost. As soon as charged I put it in the car for a short trial run, and was very much surprised to find the marked improvement in the running, and greater power of the car; but I was still troubled in the hot weather with the heating of the cylinder. I then saw an advertisement respecting the water-cooled heads for De Dion engines, and decided to try one, also one of the water tanks that fit on the back of the car. I fitted the water-cooled head on myself, but the connections for tank I had done by a local tin-smith. On trying the car again I found it slightly improved, but not yet to my satisfaction. From the position of the tank with the water-cooled head I concluded that the circulation was faulty, and this I found to be the case. I had varnished the head, but

on running the car it got so hot that the varnish burnt off; so I decided to have a new tank made to my own design (of copper), and to place it immediately over the engine. After various difficulties and alterations I succeeded in getting perfect water circulation. The tank holds 1½ gallon of water, and is placed directly over the engine, and being in front of the car is considerably cooled by the air coming in contact with it.

I enclose two photographs of the car with the tank in position. You will see it is rather an ornament than otherwise. A brass beading round the tank matches the other parts of the frame. I find it a complete success. During the warm weather the water does not steam until I have been running about twenty miles, and then only after going up a steep hill. There are three speeds to the car, and as I always drive on the fast speed, regulating the pace by the sparking lever and gas lever, it makes very little noise. As regards sparking plugs, I find the new De Dion do all that is required. I have tried Reclus, Hermit, etc., but prefer De Dion. The contacts of most plugs, I find, are too far apart, and I generally place a thin playing card between them rather tightly, which corrects any degree of compression in the cylinder. I also found when I commenced to use accumulators that my difficulties were over in respect to the trembler and contact-breaker. After once being set properly it does not require touching again until something breaks or comes loose. With regard to starting the engine I very rarely have any difficulty, I always make a point of squirting a tablespoonful of paraffin through the compression tap; it loosens the piston rings and cleans the cylinder. In conclusion, I can thoroughly recommend anyone having an air-cooled motor to go in for the water-cooled head, but they should be careful to place the tank where the circulation will be uninterrupted; also I strongly recommend accumulators instead of dry batteries. The latter seem to become tired and exhausted before they are run out.—Yours truly,

GEORGE F. FIRTH.

THE SPRAG DIFFICULTY AGAIN.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I shall be glad if any of your readers can give me some information as to how I can prevent difficulty with my voiturette when it is brought to a standstill upon any steep hill. For instance, on Sunday last I was climbing a remarkably steep hill, and owing to some fault connected, I should think, with the electricity, although the car went up part of the hill on the slow speed gear, the engine stopped. The result was that, although I have a sprag fitted to the back of the car, theoretically to prevent it going backwards, the sprag failed to act. The car jumped the sprag and commenced to go backwards rapidly, and I only saved an accident, which might have been very severe, by turning it into the hedge. Is there any method or apparatus to remedy the serious defect I have mentioned above? If so, I shall be only too pleased to adopt the same on my car.

I believe there has been correspondence previously in your columns with reference to this matter, but, so far, I have never been able to see anything satisfactory mentioned upon this subject.—Yours truly,

FRANK THATCHER.

LIVERPUDLIAN writes:—"I notice in your last issue you mention that a Scotch biscuit firm is experimenting with a motor-lorry. It may interest you to know that Messrs. W. and R. Jacob and Company, Ltd., biscuit manufacturers, of Dublin and Liverpool, have had a motor-lorry in use in Liverpool for some considerable time past."

THE Reading Automobile Club will hold a hill-climbing contest on Wednesday next, the 26th inst. The competing cars will meet at the foot of Peppard Hill, near Reading, at 3.30 p.m. The event will practically be a time contest from a mark across the road on the level to a given mark at the summit of the hill.

HERE AND THERE.



It is said that the national executive of the Social Democratic party of the United States intend to employ a motor-car in an early propaganda campaign.

It is reported that the Westinghouse Electric and Manufacturing Company, of Pittsburg, Pa., have purchased the patents of the Hub Motor Company, Chicago, Ill., whose vehicle was exhibited in London some months ago.

"MOTOR-CYCLES, AND HOW TO MANAGE THEM," by A. J. Wilson, has now attained its fourth edition. Naturally, much contained in the present edition is repetition. On the other hand, Mr. Wilson has brought his subject up-to-date, enlarged it, and added some very clear diagrams. The work is not too technical, and should be invaluable to all who are disposed to take unto themselves that missing link between the bicycle and the motor-car—a motor-cycle. The price of the book is 2s. 6d., and it is published by Messrs. Iliffe, Sons, and Sturney.

SIR JOHN CAMPBELL, BART., of the 2nd Life Guards, has become an ardent motorist. Just previous to the Show he purchased from the British Automobile Commercial Syndicate an 11 h.p. De Dietrich car, which he took to his country seat in the North of England. After having become greatly infatuated with motoring, and through the good behaviour of the car mentioned, he has now purchased from the same company a 24 h.p. Mors, which he is driving all over the country with great success.

WHILST travelling from Bolton Abbey to Bradford, the other day, a motor-car, containing a lady, a gentleman, and two children, failed to make the ascent of Lobwood Hill, and ran backwards. The party narrowly escaped being precipitated into the river below. The vehicle ran against the new fence which protects the roadside, and though the fence was damaged, the car and its occupants were saved when within a foot of the precipice.

A FRENCH contemporary tells the following good story. A Peroune motorist lent his car to a friend, whose knowledge of brakes and carburettors was strictly limited. The friend started off for Cléry, all going well, and intoxicated with success. On arriving at Cléry, where the trip should have finished, a Homeric struggle took place between the amateur *chauffeur* and the brake, which refused to act. So the amateur became a wandering Jew, and journeyed on to Maricourt, where the car stopped for want of petrol. Fearful of trusting himself again to such a mode of transport, the friend found his way home behind a hay motor, and the proprietor had to go in search of his car.

WE hear that a new concern has been formed in Birmingham under the style of the Birmingham Motor Manufacturing and Supply Company, Ltd., which will shortly open up a large dépôt in that city. The new concern, of which Mr. Williamson, late of the International Motor Company, Ltd., will be the managing director, has an ambitious programme, having been organised to exploit both a gear and a belt-driven car of its own manufacture. The promoters will also supply factors, cycle agents, manufacturers, and motor dealers generally, with their new 6 h.p. single cylinder engine, transmission gear, coils, differential axles, coolers, and complete under-carriages. They anticipate a very large trade in this department owing to dealers in the Midlands being able to obtain supplies on the spot, instead of having to send to France. Coachbuilding for motor bodies will also be undertaken. With regard to the cars themselves, these will be known as the "Rex." They will be entirely of British manufacture excepting the electric fittings, and will be put on the market at a reasonable price. The vehicles will be fitted with *tonneau* bodies. In the gear-driven car, transmission will be on the lines of that adopted in the voituresses which lately did so well in the Paris-Bordeaux race. In a week or so, when matters in connection with the new company are further advanced, we hope to be able to publish a full description of the "Rex" cars.

ON Sunday last the members of the Yorkshire Automobile Club held a run to Bolton Abbey and Grassington.

It is reported from Paris that a company is arranging 2,700 dépôts up and down France, where carburetted alcohol, for use in automobiles, will be stocked.

A NEW type of voiturette with the motor in front is, reports *La France Automobile*, in course of construction at the works of Messrs. De Dion and Bouton, at Puteaux.

THE Queen of Holland has become a keen admirer of the motor-car, and is learning to drive one, her brother-in-law, the Duke of Mecklenburg, giving her lessons.

AT the last moment the Prefet of the Pas de Calais forbade the race between Roubaix and Calais which the Automobile Club du Nord had arranged to run off on Sunday last.

MADAME LOCKERT, proprietress of *Le Chauffeur*, is one of the few ladies who will take part in the coming Paris-Berlin race. She, in company with her two daughters, is making the journey on a Richard car in the touring section.

A NONAGENARIAN lady of Spalding recently took a ride in the trailer of a motor-tricycle. She enjoyed it so much that she went again. Although considerably over ninety years of age, the motor has no fears for her—she prefers it to a 'bus.

MESSRS. BOTWOODS, of Ipswich, have sent us a copy of their new catalogue, in which illustrations and particulars are given of the various styles of "Teras" (Gobron-Brillié) cars they have placed on the market.

AMONGST other motor-cars seen on the road to Ascot, and going well, was a Motor Manufacturing 6 h.p. Lynton wagonette, kindly lent by the company to a party of Pressmen. In spite of its ten passengers Coombe and Egham hills were negotiated with ease.

THE Daimler Wagon Company, Ltd., has been registered with a capital of £100 to acquire any licenses, patents, and the like, and to carry on the business of manufacturers of and dealers in all kinds of vehicles (whether worked by animal traction or by steam, oil, electricity, or other mechanical power), etc.

MOTORISTS who contemplate a visit to Hythe must approach the ancient *cinque-port* with due caution. Its Town Council has come to the conclusion that motor-cars are habitually driven at too high a speed through the streets, and have instructed the Town clerk to ascertain the power of the Council to deal with the matter.

THE introduction of motor-cars plying for hire into the city of Oxford has caused an inquiry to be made as to the fee (if any) that had been charged for the licensing of the cars, and whether a sufficient amount could not be levied to recoup the city for the extra amount of street watering necessitated. It was elicited that the motor-cars are licensed as hackney carriages, and subject to the usual fees, which are very small; it was also stated that it was not possible to increase the fees to an amount likely to repay additional cost of watering the streets.

THE other day we had an opportunity of inspecting one of the new Benz delivery lorries illustrated in our issue of February 2nd last. The one we saw at Messrs. Hewetson's dépôt is fitted with a 5 h.p. single-cylinder engine, and is intended for a load of 30 cwt. The vehicle is gear-driven, and is fitted with four speeds ahead and one reverse. It can attain a good speed on ordinary roads, while its hill-climbing powers may be gauged from the fact that, fully loaded, the lorry has negotiated Highgate Hill at a fair rate of speed.

IN placing their new price-list of "Dead Beat" ammeters and voltmeters before the public, Messrs. L. B. and C. W. Atkinson call attention to the considerable economy which can be effected, where electricity is the motive power, by users of their patent instruments. Other advantages claimed are that these appliances are made in England, and with interchangeable parts. As to the ammeters and voltmeters, they are neatly turned out, do not oscillate, and can be clearly read even when travelling. The frictionless movement, attained without the use of delicate jewelled pivots, is, of course, a considerable factor in keeping down prices.

THE STRAKER STEAM VEHICLES.

WITH the extensive growth of heavy steam vehicular traffic—openings for fresh trading concerns are gradually becoming evident. The most recent enterprise is the Straker Steam Vehicle Company, Limited, of 9, Bush Lane, Cannon Street, E.C., who have secured the services of Mr. Sidney Straker, Assoc. Memb. Inst. C.E. and Memb. Inst. Mech. E., as managing director. Mr. Straker's many years of experience in this branch of

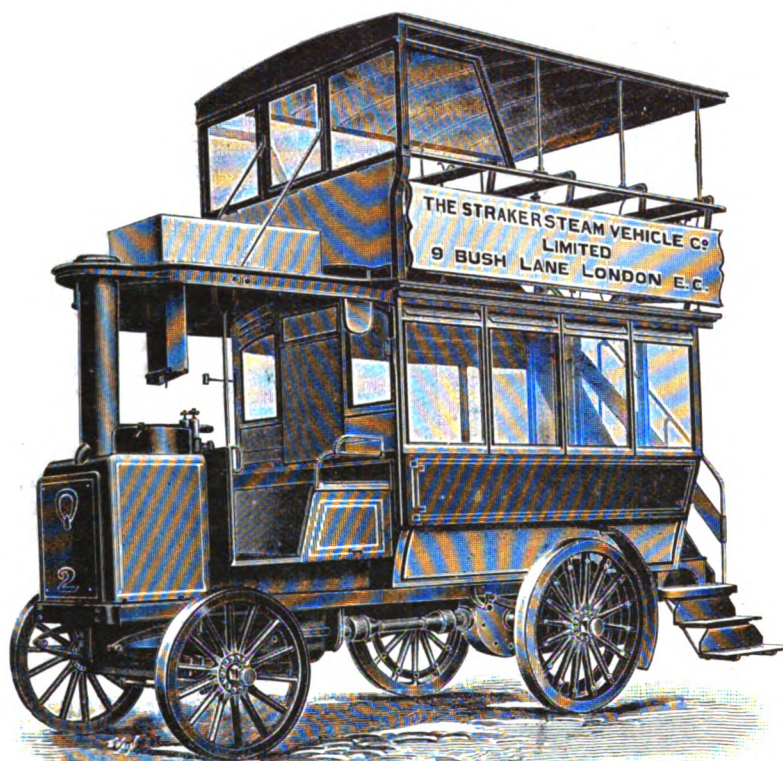


FIG. 1.—THE STRAKER STEAM OMNIBUS.

engineering should serve the company in good stead, including, as it does, the production of the first two petrol twenty-six-passenger omnibuses put upon the London streets, which machines, we are informed, have already traversed a distance exceeding 20,000 miles, and the production of the two twenty-six-passenger steam omnibuses sold by him to the British Electric Traction Company, Limited, and now in use in the Potteries, doing 80-mile daily shifts. The new steam lorry, shown in Fig. 2, represents that which in the company's opinion will meet the public requirements, embodying as it does a simple and durable vehicle of great solidity, and constructed consistent with the requirements of common road traction. We are unable at the present time to give full particulars of the constructional details, but many of the salient points which we mention should appeal to users of this class of vehicle. The construction provides for loads up to five tons. The lorry throughout is of the simplest description, such parts that require periodical inspection being made specially accessible. The well-tried system of steam-raising, which embodies the modified De Dion type of steam generator, enables the vehicle to work with a fuel cost not

exceeding, it is stated, $\frac{1}{10}$ d. per ton mile. The power installed exceeds that of the usual practice, thus giving special facilities for hill-climbing and dealing successfully with muddy and sticky roads. A strong device is employed for locking the compensating gear when occasion may demand, and only one attendant is necessary for working and driving the machine. Substantial control arrangements are provided for, a steam superheating system, which is claimed to prevent steam becoming visible when in use, being adopted. Special attention has been paid to the brakes, so that the vehicle may be held on steep inclines under ordinary conditions. The steam raising system renders the machines capable of traversing considerably longer journeys for the same amount of water carried than is usual. The standard frame is made suited for platform areas up to 80 feet. The other vehicle which the company is pushing is of the public service class, Mr. Straker's first machines being the two twenty-six-seated steam omnibuses, as shown in Fig. 1. These machines are now in daily use in the Potteries, being employed as feeders to tramways, with good and economical results, the daily journeys of 80 miles being negotiated to the satisfaction of the users. Since these 'buses were supplied we understand the understructure has been modified, to ensure greater strength and better efficiency.

To offer prizes for improvements in motor-cars is nothing unusual. The Allgemeine Schnauferl Club—in other words the union of German automobile clubs—of Munich, has, however, entered a new and original field. Three silver cups have been offered for the three best automobile songs, humorous or of a serious nature, which fit well-known melodies.

THE Locomobile Company of America claim to have the largest and most complete factory in the world for the manufacture of automobiles. The main building of the factory at Bridgeport comprises 125,000 sq. ft. of floor space, this not including three other large parts of the plant. That the claim is not unfounded will be seen from the fact that so far no less than 3,000 complete machines have been turned out.

GRANTED that France is, as is frequently stated, the cradle of the motor-car, any work dealing with such must be taken seriously. The value of the latest of these, *Les Automobiles Electriques*, by M. Gaston Sencier and M. A. Delasalle, has been fully appreciated in France, where it has won a silver medal from the Automobile Club of that country. The work, which contains some 400 pages and is well illustrated, is published by M. Ch.

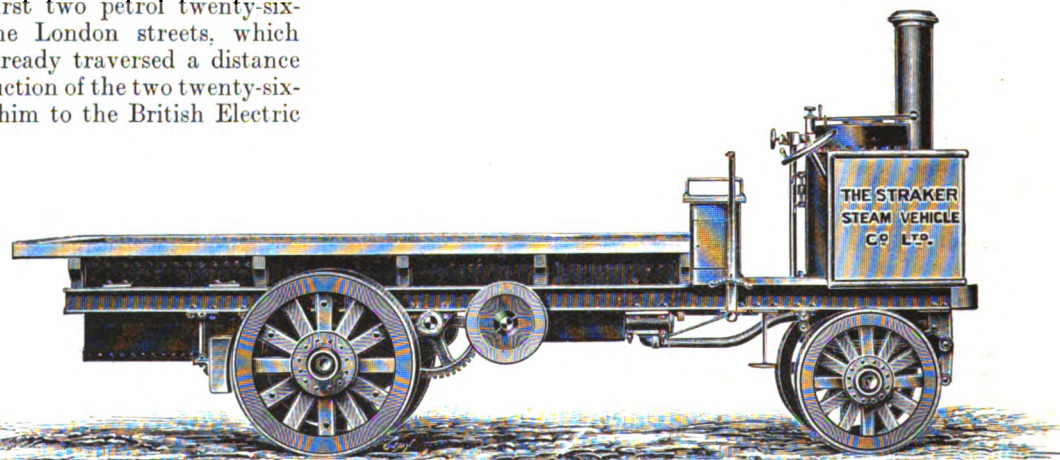


FIG. 2.—THE STRAKER STEAM LORRY.

Durand, of 49, Quai des Grandes-Augustins, Paris, at 15 francs. It commences with one, Thomas Davenport, an American, who, in 1834, experimented with a magneto-electric car, which travelled without rails. From that point we are carried easily and pleasantly to the most up-to-date type of car now running. Numerous diagrams and tables possess the advantage of clearness in a marked degree.

THE AUTOMOBILE MANUFACTURING Co., Ltd., 48/49, Long Acre, and North St., Manchester Sq., all cars in stock, Garage, Repairs.

THE BIG EVENT OF 1901.

THE following vehicles have been definitely entered during the past week for the Automobile Club Trials in connection with the Glasgow Exhibition:—

- Two vehicles by the Auto-Carriage Company.
- Two vehicles by Humber, Limited.
- One vehicle by the Locomobile Company of America.
- One vehicle by Panhard and Levassor.
- One vehicle by Messrs. W. T. and S. E. Botwoods.
- One vehicle by the Lanchester Engine Company.
- One vehicle by the Eagle Engineering and Motor Company, Limited.
- One vehicle by the Progress Cycle Company.
- One set of tires by the Dunlop Tyre Company.
- Private owners' section:—
- Two vehicles by Mr. J. Holder.
- One vehicle by Hon. C. S. Rolls.
- One vehicle by Mr. R. E. Phillips.

BRITISH MOTOR TRACTION COMPANY, LTD., v. SMITH.

In the Chancery Division, last week, before Mr. Justice Kekewich, this case came on in the form of a short cause on motion for judgment in default of appearance. The action was originally brought for the purpose of restraining the defendant from infringing the Maybach patent for carburettors. His lordship now gave judgment for the plaintiffs in accordance with minutes which had been prepared and which provided for an injunction, an inquiry as to damages, the delivery up of the infringing articles, and costs as between solicitor and client.

THE MOTOR TRACTION COMPANY, LIMITED.

THE report of the directors of the Motor Traction Company, Limited, for the half-year ended 31st December last states that during the period the attention of the board has been almost entirely occupied with rebuilding the factory and depot at Walnut Tree Walk. The two omnibuses which for a considerable time were running between Kennington and Oxford Circus were withdrawn in December last, the directors having come to the conclusion that all the experience that could be got from the working of these vehicles had been gained. The improved omnibuses ordered from the Daimler Company of Cannstatt were expected to be delivered in March, but, owing to certain alterations deemed necessary, some delay has occurred; delivery, however, is promised in a few weeks. In the early part of the present year the factory buildings were so far completed as to admit of work being commenced in a portion of the premises. The additional machinery required is being put down as quickly as possible, and the company will soon be in a position to undertake the construction of motor-vehicles of the most approved type. A large space being available for storage purposes at the depot, the company is now prepared to house, repair and keep in order any description of motor-car, and has special facilities for charging electric cars and for the sale of petrol spirit.

THE DUNLOP COMPANY, LTD., v. BRITISH AND COLONIAL MOTOR-CAR COMPANY, LTD.

In the King's Bench Division, on the 14th inst., the Dunlop Pneumatic Tyre Company, Ltd., and the Pneumatic Tyre Company, Ltd., of Dublin, sued the British and Colonial Motor-Car Company, Ltd., for damages and infringement of the Bartlett patent improvements in tires. The plaintiff's case was that the defendants, who were exhibiting half-a-dozen motor-cars at the cycle exhibition at the Agricultural Hall, London, in November last, had tires upon the cars which were of foreign manufacture, and an infringement of the Bartlett patent. The defendants denied the infringement. Mr. Walter appeared for the plaintiffs; Mr. T. Terrell, K.C., and Mr. Statham for the defendants. Mr. Walter, having stated the facts and called a witness who proved that the tires upon the defendants' cars were an infringement of the Bartlett patent, stated that at the eleventh hour the defendants had admitted that the tires were an infringement. Mr. Terrell submitted that though technically there was an infringement yet in reality there was no infringement because the tires were only used for the cars to stand on, and were not for sale. There was no intention to sell them, and no intention whatever to commit any infringement. Therefore he submitted that that was not a case for an injunction. He called Frank D. Hackney, secretary to the plaintiff company, who stated that the cars came from Liège, and were usually sent without tires, and the defendants had them fitted themselves with Grappler tires, but on this occasion the manufacturers had, without orders, fitted the cars with German-made tires, which were an infringement of the plaintiff's patent, but the tires were not for sale, and there was a notice up to that effect. In cross-examination witness admitted that the notice was not put up till after the service of the writ, which occurred very promptly, whilst the show was still running. His Lordship held that there had decidedly been an infringement, but the damages were obviously only nominal. Therefore there would be judgment for the plaintiff for 40s. damages, and for an injunction, the defendants giving an undertaking that the German-made tires should be returned to Germany.

In a second action by the same plaintiffs against Mr. M. de Breynne the circumstances were similar, and judgment for 40s. damages and an injunction was also given against the defendant.

FURIOUS DRIVING CASES.

At Bow Street, Mr. D. M. Weigel, of Long Acre, W.C., was summoned for driving a motor-car to the common danger. P.S. 33E stated that on Bank Holiday morning the defendant drove a motor-car in Long Acre at the rate of twelve or fourteen miles an hour. Near James Street four or five people were crossing, and they had to run to get out of the way. The defendant said the motor-car was an old one. It was only geared to nine miles, and it was a mechanical impossibility for it to go faster. After hearing further evidence the Magistrate came to the conclusion that the defendant was not driving at a dangerous pace, and dismissed the summons.

At Belper, Harry Butler, an electrical engineer, of Derby, was charged with furiously riding a motor-cycle, at Belper, on June 1st. Police-Inspector James stated defendant rode at nineteen miles an hour in one part of the town, and in another the speed was twenty-six miles. Several officers had measured distances and set their watches to seconds. The time was taken by three officers. Superintendent Vardy said the defendant could not be caught, and his reckless riding had frequently attracted attention. A fine of £2 and 16s. costs was imposed.

At Huntingdon Division Petty Sessions, Henry J. Windhurst and Frank Dennis were summoned for riding in a motor-car and driving the same at a greater speed than twelve miles an hour, contrary to the regulations of the Local Government Board, at Bampton, on May 14th. Mr. Spencer appeared for Windhurst. The case against Dennis was dismissed and the other defendant was fined £5 and costs.

At Slough, Mrs. Grace Ansell, of Sloane Street, London, was fined £5 including costs for driving a motor-car to the common danger at Colnbrook. Constable Young deposed that the car knocked down a man. Defendant said the car was reduced in speed at the time, and if the man had not caught hold of the splash board it would have cleared him. Although he was unhurt, he had been compensated.

At Epping, Mr. Harold H. Baring, of Wallsgrove House, High Beech, was fined £10 and costs for driving a motor-car at a greater speed than twelve miles per hour. A constable said that the car went by like an express train at a rate of between thirty and forty miles an hour, and another witness likened its speed to "a flash of lightning."

At Westmoreland County Petty Sessions, Christopher H. Oliverson, motor-car manufacturer, Kendal, was charged with driving a motor-tricycle at a greater speed than was reasonable on the highway at Sizergh on May 31st. Mr. R. F. Chorley appeared for the defendant, who pleaded not guilty.—P.C. Balmer stated that at 9.20 p.m. on the night of the 31st ult., he saw the defendant driving a motor-tricycle towards Milnthorpe. Witness took his watch out of his pocket and timed the defendant between five telegraph posts. He afterwards measured the distance between the posts and found it to be 265 yards, which defendant accomplished in twenty seconds, therefore his pace must have been 27 miles 180 yards an hour. Witness requested him to stop, but he took no notice of the request. Mr. Chorley submitted that the constable had made a mistake in his timing. How could he tell when the defendant had reached the fifth telegraph post, when he was 265 yards away? Defendant's wife was on a bicycle attached to the motor-tricycle, and it was not likely that a gentleman would jeopardise the safety of his wife by going at such a speed as had been stated. The defendant was then called, and stated that it was his custom to slacken speed in going down hills, and on this occasion he would perhaps be going at a rate of twelve or fourteen miles an hour. He was not going at twenty-seven miles an hour. He met no traffic of any kind until he passed Levens. In reply to Superintendent Graham defendant said he had been warned about going fast, but that was only through the town. The magistrates inflicted a fine of £1, and 17s. costs.

At Selkirk, Michael M'Pake, motor-car driver, of Galashiels, was charged with driving a motor-car on the Yarrow Road at a greater speed than ten miles an hour. Thomas Milne, police-constable, deposed that on the day in question he saw a motor-car cross the Bridge at Tibbie Shiels and pass the nineteenth milestone. He looked at his watch at that time, and he also looked at it when the car passed the seventeenth milestone. It had taken exactly ten minutes to cover the two miles. He mounted his bicycle and followed the car till it reached the fourteenth milestone at Craig-Douglas Burn. It took exactly nine minutes to do the three miles, or nineteen minutes to the five miles, being at the rate of fully fifteen miles an hour. The car was driven by accused, and was filled with passengers. Witness also stated that he had been sent there on purpose to watch the car, and prior to the time it left Tibbie Shiels, he and Constable Brownlie had adjusted their watches and put them at the same moment. Alexander Brownlie, police-constable, Cappercleuch, corroborated in all details, and added that he was in plain clothes, but Constable Milne was in uniform. For the defence, M'Pake was the only witness examined. He stated that on the day in question he drove the motor-car from Galashiels to Tibbie Shiels and back. He had ten passengers, he himself making eleven on board. He could drive the car at four different speeds, the highest with eleven passengers being twelve miles an hour on level road. The Fiscal shortly reviewed the evidence, and submitted that he had abundantly established his case. Mr. Lees, for the defendant, contended that a prosecution in this case was not warranted. The constables, he said, were evidently set there for the purpose. The Sheriff said the question he had to consider was the simple one of whether the accused was driving

quicker than ten miles an hour, and it was clearly proven that there was an excess of speed of at least five miles an hour. He had no other alternative but to find the case proved. He believed it was the first prosecution of the kind, certainly in that county, if not in Scotland. He took that into account, and also the nature of the road, and he would inflict a nominal penalty and fine accused 2s. 6d., with the alternative of three days' imprisonment.

At Walsall, Harry Chambers, of Sutton Coldfield, was charged with furiously driving a motor-tricycle, in Lichfield Street, on the 10th inst. Police-constable Thomas stated that the defendant rode at an enormous speed—about 14 miles an hour witness estimated it at. The policeman, in reply to the Bench, admitted that there were no persons or vehicles immediately in front of defendant, and the latter said he hoped the Magistrates would not put the speed limit too low, as by so doing they would hamper the best industry in England at the present time. The case was dismissed.

At the Bournemouth Borough Police Court several charges against drivers of motor-cars for furious driving were heard. George Budden was summoned for driving his car at a speed which was not reasonable and safe, having regard to the traffic. Sergeant Littlewood said that on the afternoon of Tuesday, the 11th inst., he was on duty in Old Christchurch Road, with Inspector White, standing near Holy Trinity Church. Police-constable Baugh was outside Swaffield's Nursery, exactly 220 yards away. He signalled them that a motor-car driven by defendant was passing him, and he (witness) took the time by a chronometer, and defendant covered the distance of 220 yards in 34 seconds, which was at the rate of 13 miles 414 yards per hour. Inspector White corroborated. Defendant said he knew he was being watched, and slowed down as much as possible; if he had gone slower he would have impeded the traffic behind. Questioned by Alderman Mattocks, the Sergeant said he did not make any signal to intimate that he had timed the defendant. Fined 2s. and 8s. costs. A case against Sidney Millett was next heard. Sergeant Littlewood said this defendant covered the same measured distance in 32½ seconds—13 miles 1,489 yards an hour. Defendant had twice before been convicted of a like offence, and was now fined £1, including costs. James Way was stated by Sergeant Littlewood to have covered the measured distance of 220 yards in 34 25th seconds—just over 13 miles an hour. Fined 2s. and 7s. costs. Louis McCullagh, according to the sergeant, covered the distance in 34 seconds. Defendant said he was only going at the rate of between 5 and 6 miles an hour, for he put on both the foot and hand brakes. Fined 6s. and 9s. costs, there being a previous conviction. Percy Stevens, another offender, was fined 2s. and 7s. costs.

OBSTRUCTION CASES.

At the Oxford City Court William G. S. Hynde, Abingdon, was summoned for causing an obstruction in St. Michael's Street by means of a motor-car, on the 4th inst. He pleaded not guilty. P.C. Steele stated that the car was standing outside the Union premises from 6.50 till 8.50. The Mayor said the Bench considered there had been an obstruction, and would impose a fine of 1s. and 7s. costs.

At Southampton, William Duncombe, of Broughton, was summoned for having, on June 1st, caused an obstruction in Above Bar Street by leaving a motor-car there. The police evidence was that the car was standing in the street for an hour, whilst the defendant was in a public-house. Defendant admitted the fact that the car was standing in the street during the time mentioned, but denied that there was any actual obstruction of the traffic. A fine of 2s. 6d. and costs was imposed.

A NON-STOPPING CASE.

At the Wimborne County Court, Judge Philbrick, K.C., had before him a case in which Fleetwood Bond, of West Parley House, sued Alexander Howlett, of Boscobee, for £12 for damage suffered by the negligent driving of the defendant of a motor-cycle on April 3rd on the Ringwood Road, Longham. Plaintiff stated that whilst out driving with his wife and sister in a Stanhope phaeton, and when in the Ringwood Road at Longham, he saw a motor-cycle, on which were defendant and his wife, coming towards the carriage. Fearing his horse would shie, he held up the whip as a signal to defendant that he wished him to stop. The injunction, however, was not obeyed, and the motor, which was on the wrong side of the road, apparently was coming straight for the horse, when within about ten or twelve yards of it it suddenly swerved. This frightened the animal, which, plunging, overturned the phaeton, and threw plaintiff, his wife, and sister out. Neither, fortunately, were seriously injured, although the carriage and harness were damaged. P.C. Shepherd said in consequence of being fetched by Mr. Bond he went to the scene of the accident and questioned Howlett, remarking, "It's a great pity you did not stop when Mr. Bond put up his whip," and defendant replied, "If I were to stop for every person that put up his whip I should be stopping every few minutes." Mr. Curtis, having addressed his Honour, called the defendant, who, declared that upon observing the trap approaching he switched off the electricity, with the result that the pace slowed down to about six miles an hour, and when within about forty yards of the horse, swerved across the road, giving the trap practically all the road. Plaintiff made no signal whatever with the whip but simply whipped the horse. As witness passed, the animal shied and went into the hedge. There was no truth in the suggestion that he was coming along at fifteen to sixteen miles an hour. Lavinia Howlett, the wife of the defendant, said she was riding on the front seat of the cycle

and saw the carriage coming, but observed no signal; the only thing she saw was Mr. Bond whip the horse. Another witness also stated that he did not see the plaintiff signal. His Honour, in giving a verdict for the plaintiff for the sum claimed, relied on the evidence of the police-constable in respect to the admission made to him by defendant.

A CASE OF ASSAULT.

At West London Police Court last week, Cecil Edge appeared before Mr. Rose to answer two summonses for assaulting Charlotte Clarke and her little boy Albert Clarke. Mr. Schiller, barrister, defended. The mother's complaint was that on the evening of May 22nd she peeled an orange for her little boy, and afterwards saw him chased by the defendant, who shook him violently and slapped him on the side of the face. When she pulled the child away the defendant turned round and slapped her face. The defendant was with a motor-car, and complained that her child had thrown orange peel at him. Police-constable 158 F gave evidence on behalf of the complainant, and stated that he saw the distinct print of a man's hand on the faces of the mother and her boy. The defendant in his evidence positively denied slapping the mother's face. He said that while driving a motor-car the boy threw part of an orange, not peel, striking him in the eye. He stopped and chased the boy. While talking to him the mother came up and struck him, cutting his lip. All he did was to raise his arm to ward off the blows. Mr. Schiller having pointed out the danger caused by street boys throwing missiles at the drivers of motor-cars, the defendant was fined 20s. with 2s. costs in the case of the mother, and the costs only in the other, the magistrate stating that he was wrong in chastising the boy.

The Begbie Manufacturing Company of Cumberland Park, Willesden Junction, W., have secured the agency for Aster motors in the United Kingdom.

A FRENCH writer remarks that the motor-bicycle looks like becoming very popular this summer. The big towns of Amiens and Lille are regular hives of motor-cycledom.

The Austrian State Railway authorities have placed an order with the Austrian Daimler Motor Company of Neustadt, Vienna, for a 32-seated third class motor-vehicle to run on rails. The car will be propelled by a 4-cylinder Daimler motor of 30 h.p. and will be arranged to run in either direction. It is intended for use on the Lower Austrian South-Western Railway, and will be ready by the autumn.

The Continental Caoutchouc and Guttapercha Company inform us that during the race Paris-Berlin they are establishing dépôts at the following places: Sedan, Aix-la-Chapelle, Munster, Hanover, and Magdeburg. Tires and inner tubes, in all sizes with which competing cars have been fitted, will be stocked there for the convenience of any automobilist taking part in the race, and there will also be at each dépôt two or three mechanics, who will be at the disposal of those who need their services.

In January of this year Mr. J. W. S. Langerman, of New York, imported from France two Panhard cars, which were seized by the Customs officials on the ground that the statements made to the inspectors at the time of the importation were not correct. Mr. Langerman presented invoices which purported to show that the vehicles had been in use more than a year. The Treasury officials, however, communicated with special agents in Paris, and it was learned that the cars were almost new. Collector Bidwell then assessed Mr. Langerman 2,677 dollars for duties. He refused to pay, and notified the U.S. Treasury Department of his intention to fight the case to the end. Mr. Langerman has changed his mind and has agreed to pay the duties levied, and in addition a penalty of 1,000 dollars, which makes the total fees collected 3,677 dollars (£735).

The Thornycroft Steam Wagon Company of America, of Paterson, N.J., have in course of construction ten of their 4-ton steam wagons. The first of these has been purchased by the Newark Licorice Company, Newark, N.J., who operate a number of heavy horse trucks, and who tested the steam truck in their regular service and proved to their satisfaction that the wagon could make eight trips daily instead of the six trips made by the horse trucks. As the former hauled three tons each trip, while the latter hauled only two tons, the daily hauling capacity of the steam wagon is exactly double that of one of the present horse trucks. The Thornycroft Company are also building a special steam truck of five tons capacity for the Merrimac Chemical Company, of Boston, Mass. This truck is to be used in hauling heavy carboys of chemicals, and will have a special body with a metal lining.

THE Motor-Car Journal.

VOL. III.]

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COMMENTS.



IT appears to be probable that Big Event will be held under the auspices of the Glasgow International Exhibition, and will be called the "Glasgow International Exhibition Trials of the reliability of motor-vehicles organised by the A.C.G.B.I., with the co-operation of the Scottish Automobile Club affiliated with the A.C.G.B. I., and under the supervision of the Sports Committee of the Glasgow International Exhibition." It is hoped that the Council of the Glasgow Exhibition will give a gold and silver medal for the two most successful vehicles in each of the classes in Section 1 (Manufacturers and Agents) and a bronze medal for the successful vehicle in Section 2 (Private Owners' section). It is further suggested that on the day after the conclusion of the trials, viz., Saturday, the 7th September, an automobile race meeting should be held on the track in the athletic grounds of the Exhibition. The Exhibition Council will offer prizes amounting to £150 for automobile events on this occasion. Thirty-eight vehicles have already been entered in the Manufacturers and Agents' section, five in the Private Owners' section, and the Dunlop Tire Company have entered a set of tires in Section 3. We are requested by the Committee of the Automobile Club to state that the entry fees at present are: Section 1 (Manufacturers and Agents), £25 per vehicle; Section 2 (Private Owners), £10 per vehicle; but that after noon on Monday, the 1st July, the entry fees will be raised to £30 and £15 per vehicle respectively.

The Demonstration at Leicester.

WE learn that one hundred and ninety County Surveyors and Engineers have accepted the invitation to drive on motor-vehicles to various points of interest around Leicester to-day (Saturday), on the occasion of the meeting of the Incorporated Association of Municipal and County Engineers. It is hoped that all members of the Automobile Club who own motor-vehicles will make a point of driving or sending them to Leicester on the occasion of the Conference, so that full advantage may be taken of the opportunity afforded another large body of obtaining a practical insight into automobile control. All cars should be at the Town Hall, Leicester, at 8.45 a.m. to-day (Saturday).

A Weight Limit.

THE proposal to limit racing cars in future to a weight of 1,000 kilos is naturally calling forth a great deal of criticism in France. That well-known authority on all that appertains to a motor-car, M. Paul Meyan, has devoted some space to the consideration of the reform in a recent number of *La France Automobile*. After calling attention to the fact that many cars built for racing are over-engined, he urges that a motor developing 14 h.p. in a car that

does not turn the scale at 400 kilos is as unpractical as the monster of nearly two tons. Lightness, solidity, and comfort must be the essentials of the future motor-car rather than speed gained by the sacrifice of all else. A 20 h.p. car capable of running 600 kilometres without stopping, with four passengers up, at a speed of fifty to sixty kilometres per hour, and weighing 800 to 900 kilos, is what M. Meyan would like to see. But if a limit of weight is to be compulsory in future motor-car Derbys, why not a limit of horse-power too? Let the one be proportionate to the other, then will construction be the winning factor.

The Surrey Police.

AT a recent meeting of the Standing Committee of the Automobile Club, some correspondence with Captain Sant, Chief Constable for Surrey, was submitted. In it Captain Sant expressed the opinion that the driver of a motor-vehicle must stop if called upon to do so by a police constable, whether the constable be in uniform or not. It was directed that Captain Sant should be informed that the Committee regret they cannot see their way to interfere, except in cases in which a motor driver has failed to stop when called upon by a person in charge of a restive horse or by a constable in uniform. The Committee feel that they would not be acting justly to automobilists by assisting in prosecutions for failing to stop when called upon to do so by a person in plain clothes.

Illumination.

EVERY improvement in illuminating apparatus is eagerly taken up by the nocturnal motorist, and the modern acetylene lamp, especially the latest Blériot, with its lens cut in prismatic rings, similar to the refractors in use for lighthouses, is most alarming in its glare, which, though an indispensable safeguard to the driver (for we shudder now at the recollection of our early post-Act peregrinations by the light of two dim candle-lamps, varied by an occasional excursion into the ditch), is apt to make the enemy, seated behind a benighted hay-motor, blaspheme. An idea to remedy this inconvenience to other users of the road was shown us recently, the inventor of which finds it occasionally useful, without being detrimental to the natural use of the lamp. It consists of a small shutter worked from the seat, temporarily obscuring the headlight, wholly or partially as may be required, and should prove convenient when passing through towns or streets on an evening drive.

Progress.

CONVERSIONS, not merely in the ranks of County Councillors, are proceeding apace, and the friends who said last year that they meant to "wait till motor-cars were more reliable" are now, the wiser of them at least, getting cars. Well, they are more reliable, perhaps, than last year, or, at least, than four years ago. But it is hardly realised that the particular accessory of an automobile that has chiefly increased in reliability is that important one the driver. Ninety per cent. of the troubles that beset

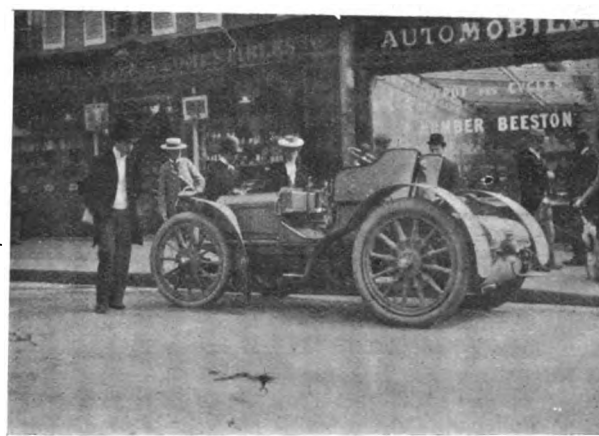
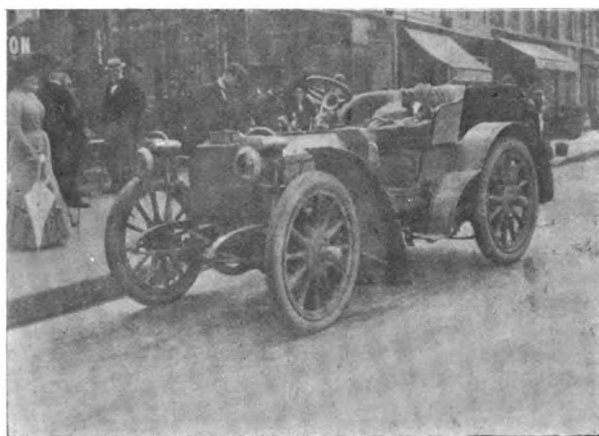
THE GENERAL AUTOMOBILE AGENCY, D. Farman, Man., Garage open day and night, all cars in stock, 100-104, Long Acre, W.C.

the beginner are avoidable or curable by superior knowledge and foresight; and of the remaining 10 per cent., 9 are punctures. Information—in print or otherwise—and assistance are far more accessible than they were, and the path of the tiro has been greatly smoothed thereby. Three years ago we met a tricyclist *en panne* at a large seaside town, and investigation showed that a cycle agent had replenished his tank with paraffin. Such a thing can hardly happen now, where the mystic sign "petrol" or "Pratt's" meets our view at the doors of not only cycle agents, but of "pubs" sometimes, and, in one case we noticed, of a village purveyor of tobacco and lollipops. In the old days of the "Otto" bicycle, its makers would not sell unless the purchaser undertook to have a course of instruction from them. It is hardly to be expected that such a wise ordinance will be followed now unless made compulsory, but the "convert" will do well to take example thereby, and spend some pains in acquiring that knowledge which, in nothing more than automobilism, brings its own reward.

Motor-cars at Hastings.

for motor-cars to ply for hire in the borough, and that the

THE Hastings Town Council has adopted a resolution "That it is advisable that the number of licences for vehicles of the omnibus, wagonette, and char-à-banc classes be forthwith increased, with a view of additional licences being issued



TWO SNAPSHOTS OF BARON HENRI DE ROTHSCHILD'S "MERCEDES" CAR.

Licensing Committee be authorised to issue such additional licences as they may think fit." Councillor Boutwood said that since the Council instructed the Licensing Committee to restrict the number of licences for motor-cars, very considerable improvements had taken place in the motors, and the Council had had experience. There had, during the two years, been no complaint, either on the part of the public or on the part of the police, as to the speed, and no inconvenience had been experienced by the other traffic. On the other hand, the cars seemed to be greatly appreciated by the public.

Accessories to Crime.

NOT content with having seen the automobile at the theatre door and at the church gate, the *Referee* wants to see it figure prominently at Newgate ere the famous prison house is razed to the ground. Our genial contemporary revives memories of the Yarmouth murder, and details how the difficulties of the police could have been increased had Bennett had a motor-car at his command. "He could have committed his crime at the time he did," says the *Referee*, "and have been in bed at his lodgings before eight on the Sunday morning." After such a suggestion the police will probably make inquiries of motor-car dealers when searching for those who flee from the fear of the law.

The Mercedes Car.

WHAT a truly wonderful car the Mercedes is! Here are a couple of photographs of the one owned by Baron Henri de Rothschild, and which appears but little bigger than a 12 h.p. Panhard, so compact is it. It might well serve as an object lesson to English constructors, who do not seem to economise space so well as do French and German manufacturers. The difference in size between the 70 h.p. Napier and other cars competing in the Paris-Bordeaux race was considered by many to be out of all proportion to the advantage possessed by the English vehicle in the matter of horse power.

Motor-Cars and Hill Traffic.

EVERYONE is familiar with the sight of a sorry-looking horse being brought to the assistance of omnibuses and other vehicles seeking to reach the top of stiff elevations. Often do these animals present a very pathetic picture, and frequently is their help of a doubtful nature. The trying gradient at Holland Park Avenue, W., is a case in point. There an extra horse is provided for omnibuses, but the animals drawing other vehicles have no such assistance, and a local gentleman asks whether motor-cars could not be used to give assistance to uphill traffic. The idea is useful as indicating that the automobile is no enemy of the horse, but rather his friend. There is, however, a better way of helping jaded steeds, and that is to do all haulage

of heavy loads up hills by motor-vehicles. There will the horse become the friend and playmate of man instead of being forced to drag out an existence as a beast of burden.

The Steam Engines and Boilers Bill.

THE Select Committee of the House of Commons appointed to inquire into the Steam Engines and Boilers (Persons in Charge) Bill sat on the 21st inst., presided over by Mr. Renshaw. Mr. Edward G. Hiller, chief engineer and manager of the National Boiler and General Insurance Company, Limited, Manchester, was called, and in the course of his examination Sir Thomas Wrightson asked: What is your opinion on the motor-car question? Is there any necessity to have a skilled attendant? Witness: I should think not, or cars would probably come under the Bill in many cases. I think steam motor-cars would come under the Bill. Mr. Jacoby said there was a clear and distinct pledge given in the House that mercantile marine or motor-cars were to be excluded from the Bill. The Chairman, after consultation, however, announced that the question raised in regard to motor-cars was open to be discussed. In answer to Mr. Allan, witness said he was anxious that the attendants of boilers should be as good and as efficient as possible, but he had not been able to find boiler explosions due to lack of technical knowledge, and, that being the case, he did not see what object could be gained by giving certificates. The Committee then adjourned.

Petrol v. Electric Cars.

It is to be regretted that some of the electrical papers should have gone out of their way to disparage petrol cars while extolling those in which the motive power is electricity. Surely there is room for both types to be subjected to fair and widely scattered tests. Sneering at petrol cars as "clattering monsters ridden by individuals with masks, peaked caps, and mackintosh garments," is not the way to popularise the automobile; nor will it further the general interests of the industry. Certainly something better might be expected from those journals that constantly criticise "ignorant litterateurs who scrawl copy for the provincial papers." When a majority of people have been converted to the mechanical vehicle on ordinary roads will be the time to denounce unseemly cars. But the question will be settled without the help of vapid paragraphs, for in this, as in other things, the rule of "the survival of the fittest" will operate to the best advantage of the public.

Motor-Cars for Portugal.

THE motor-car is practically unknown at present in Portugal, the wretchedly paved streets in all the towns being much against their immediate general progress. In fact, a car occasionally driven by Prince Dom Alfonso and one or two motor-tricycles are the only representatives of the automobile with which the public are familiar. Some time ago a few inferior French cars were about, but they have apparently disappeared, leaving only a bad impression behind them. The district around Lisbon is very hilly, and a local correspondent who is familiar with the whole country suggests to us that cars intended for Portugal should be built with, say, a two mile speed and extra strong driving gear and road wheels. This latter point is very important. The most saleable car would be one suitable for the week-end family trip to seat two adults and two children. It should have a collapsible hood for protection from rain and sun, and the machinery should be enclosed and well protected from dust and mud. With a minimum speed of two miles and a maximum of 16 to 18 miles an hour, a car fitted with reverse would be saleable in Portugal at about £200. The rough streets paved with 6 in. irregular cobbles will detract from the advance of the run-about car in Lisbon itself. Beyond the five-mile radius the roads are tolerably good but very dusty in the summer; the hills are anything up to quarter mile long and 1 in 6 incline. With regard to motive power electricity can only be obtained within the boundaries of Lisbon, and paraffin, which is obtainable everywhere, is nearly as expensive as petrol.

Butterfly Tactics.

THE other night we went to a conversazione of the Institution of Electrical Engineers, and, whilst talking to an eminent scientist, learnt with regret that, though he regarded motoring as an absolute necessity, he hated motorists as a class. His reason was personal, and not without cause. It seems that the scientist dwells in a thoroughfare, within the four-mile radius, which is celebrated for the excellence of its wood-paving. All night long, from 11 p.m. till 5 a.m., this particular stretch is alive with motorists, who practically prevent sleep. All light sleepers will appreciate this genuine grievance. It was just such inconsiderate conduct that earned for the early cyclist the contemptuous title of "butterfly." Let us hope that the "fire-fly" will not follow in his track, and win a similar unenviable reputation.

What a Horse does to a Road.

THAT a horse's hoofs can remove twenty-four pounds of road surface in one mile seems incredible; but facts are stubborn arguments, and in proof of this statement Mr. Louis Derr, an instructor of the Massachusetts Institute of Technology, brings forth his facts. Mr. Derr, who is interested in the road question from a motorist's point of view, one day noticed that a horse, trotting past him, and drawing a light rubber-tired

carriage, cut out a tiny pile of the surface material of the road at every step. From curiosity, Mr. Derr determined on an experiment. He took an envelope and fine brush, and collected the material loosened by two hoof beats on a certain street; later he did the same on one of the boulevards, and also on one of the macadamed streets. This gave him material from six hoof beats in all, and its weight was .0366 pounds, or .0061 pounds for each hoof beat. He calculated that a horse takes about 1,000 steps per mile for each foot, therefore it makes 4,000 hoof beats and digs twenty-four pounds of surface from the road. It really is surprising what a lot the motorist is beginning to teach mankind about the horses which he has been riding and driving ever since the flood.

Military Occupation.

OUR neighbours on the Continent are largely indebted to tactical considerations for their excellent roads, but the results of military occupation of our own country lanes are too often deplorable, and in default of any War Office responsibility for damage caused by heavy traffic, pressure should be brought to bear on local authorities to enforce the keeping of their roads in a fit state to bear such calls upon them. The pretty alternative route from Liphook to Petersfield, *via* Liss, skirting Woolmer Forest, which used to have a fair surface, is now, as we found when driving along it recently, in a fearfully rough state, and almost impassable except at a crawling pace, owing to the deep ruts and holes in it. The cause is evidently the heavy military traffic it has to carry, for which it receives no more attention than formerly, when little traffic passed that way.



M. L. RENAULT ON HIS PARIS-BORDEAUX CAR.

A Tour to Portsmouth.

It will be remembered that at the dinner held in connection with the run in November last to Southsea, Mr. A. L. Emanuel, the Mayor of Portsmouth, gave an invitation to the Automobile Club to visit Portsmouth this summer. Mr. Emanuel suggested on that occasion that the cars should leave London and arrive at Portsmouth, and that a cup should be given for cleanliness on arrival, or whatever else the Committee might decide upon. That on the next day should be held a floral decoration procession for a ten-guinea cup, which he would present. Mr. Emanuel also referred to a second five-guinea cup offered by a member of the Club, Mr. Henry Edmunds, the entrance fees to go towards the local hospital, which is in great need of funds, and which he, the Mayor, was desirous of doing his utmost for during his year of office. We now learn that it has been arranged to hold this run on Friday and Saturday, July 26th and 27th. Members of the Automobile Club who intend to take part in this tour are requested to communicate with the Secretary without delay. It is probable

that other prizes will be offered in addition to those referred to by Mr. Emanuel.

Another Public Service in Lincolnshire.

A PUBLIC meeting was held at Spilsby last week, to consider the desirability of forming a local motor-car company. In consequence of the short notice given, there was not a large attendance, but those present displayed great interest in the matter. Ways and means were fully discussed, and a fair amount of the required capital was promised. It was finally resolved that a company be formed for the purpose of running a service of cars between Spilsby and neighbouring towns, etc., and to ply for hire in Skegness. The company will be known as the Spilsby Motor-Car Company, Ltd., and the capital will be £500, in £1 shares.

The Municipal Motor-Omnibuses of Southampton.

At the last meeting of the Southampton Town Council, the Tramways Committee reported that the Daimler Motor Company, Ltd., had written referring to the order for three vehicles, stating that, as the result of some trials they had just made with similar public service vehicles, they were quite convinced that for ease and steadiness of running, absence of vibration, etc., there was no comparison between their four-cylinder motor developing about 18 b.h.p. and the two-cylinder motor developing about 11 b.h.p., which they had arranged to fit in the Southampton cars. They felt so strongly on the point that, if the Corporation would slightly extend the period of delivering the vehicles, so as to give the time necessary to making the alterations—say three or four weeks—they would be prepared to give them a four-cylinder engine developing more than double the h.p. they had contracted to supply them with, and to fit these extra-powerful motors into the omnibuses at an additional cost of only £50 per vehicle. The Tramways Committee recommended the adoption of the offer, and that application be made to the Finance Committee with respect to the increased expenditure of £50 per vehicle.

The Latest in Masks.

At last, according to the *Daily Telegraph*, a becoming substitute has been invented for the inartistic masks that usually disfigure the face of the automobilist. A Paris sculptor proposes to replace them by masks designed from the best types of ancient sculpture, and has, it appears, made some specimens. It is difficult to see how even a Venus de Medici mask could be made beautiful with goggle lenses in place of eyes, but the idea might have other and somewhat startling developments. The proud owner of a new 70 h.p. Napier might wear a mask with the features of a well-known public character, and court, instead of defying, recognition while exercising his car, while when driving in his own neighbourhood a special one might be reserved for appearance in the police-court. In future the bystander who sees a motorist wearing a seraphic smile by the roadside while engaged in mending a puncture will cease to credit him with self-control; he will know that that smile was purchased along with the other accessories of the car. Another, modelled from a Medusa, might be carried to use on the cyclist who "hangs on" behind, or the crowd that collects on the occasion of a necessary stoppage. Many such adaptations might be suggested, but if the idea catches on it will probably bring about the numbering of cars, and a compulsory numbered "brassard" in addition.

MR. A. L. BARBER, President of the Locomobile Company of America, arrived in London on Wednesday last. He has brought with him a new long-distance touring steam-car, of which we hope to say more in an early issue.

THE Forman Motor Company have, during the past few weeks, fitted up a moderately large factory in Day's Lane, Coventry, for the purpose of manufacturing petroleum-spirit motors for the trade.

LONDON COUNTY COUNCIL AND MOTOR-VEHICLE REGULATIONS.

THE following is the report of the Highways Committee of the London County Council on the proposals of the Berkshire County Council that motor-vehicles should be numbered:—

"We have had before us a letter from the Clerk of the Berkshire County Council, forwarding a copy of a resolution asking the London County Council and the other County Councils in England to co-operate with that Council 'in drawing the attention of the Home Secretary to the way in which motor-cars now traverse the roads, and in suggesting that every car should carry a number in a conspicuous place, should be registered, and should be obliged to stop when signalled to do so.' Having given careful consideration to this proposal we are of opinion that it is not necessary for the Council to take any action in the direction indicated in the resolution, having regard to the fact that no complaints have been made to the Council of accidents having been caused by motor-cars in London, and that, by the regulations issued by the Local Government Board under the Light Locomotives Act, the driver of a light locomotive is required to stop when required to do so by any police-constable or any person having charge of a restive horse, and also to the admirable way in which the street traffic is regulated by the police. Moreover it has been represented to us that many motor cars are of the nature of private carriages, and that, as such vehicles when drawn by horses are not required to be registered or to carry a distinguishing number, the owners of private motor-cars would resent any regulations such as those proposed by the Berkshire County Council being imposed upon them. We recommend—That the Berkshire County Council be informed that, having given careful consideration to the suggestions contained in the resolution of that Council relative to the use of motor-cars, the London County Council does not consider it necessary as regards the County of London to make any representation to the Government with the view of each motor-car being required to carry a number, to be registered, and to be obliged to stop when required."

The Highways Committee of the London County Council are to be congratulated upon the attitude taken by them in this matter. There can be little doubt that fact of Mr. Mark Mayhew, the Vice-chairman of the Automobile Club, being a member of this Committee has had much to do with its satisfactory decision.

It is a little disappointing to learn that the prizes of £40 and £20 offered by the Royal Agricultural Society for the best agricultural locomotive oil engines exhibited at the Cardiff Show this week have attracted no entries.

A MILITARY *fete* in aid of the Soldiers' and Sailors' Families Association was opened at Aldershot, on Tuesday, by the Duke of Cambridge in the picturesque grounds of Government House. Mr. Richard Simmonds and Mr. J. E. Lawes had their motor-cars on the ground and took visitors for drives.

WHILST rounding a corner in Colchester a motor-car belonging to Mr. Scott, of Foxburgh Hall, Melton, crashed into a ladder that had been laid along the kerb. The ladder was smashed, and both the off-wheels of the motor-car literally flew to pieces, bringing the vehicle up with a jerk. Fortunately, no one was injured, but the shock must have been considerable, as the car, which was travelling at a rapid rate, weighs a ton and a-half.

GROUT BROTHERS, of Orange, Mass., have added a minor improvement, in the form of an extra lantern carrier, to their steam car. The carrier, which is lower than the regular one, brings the lamp in line with the water glass and the mirror, and facilitates both the reading of the steam gauge and the observation of the water level at night without an extra light.

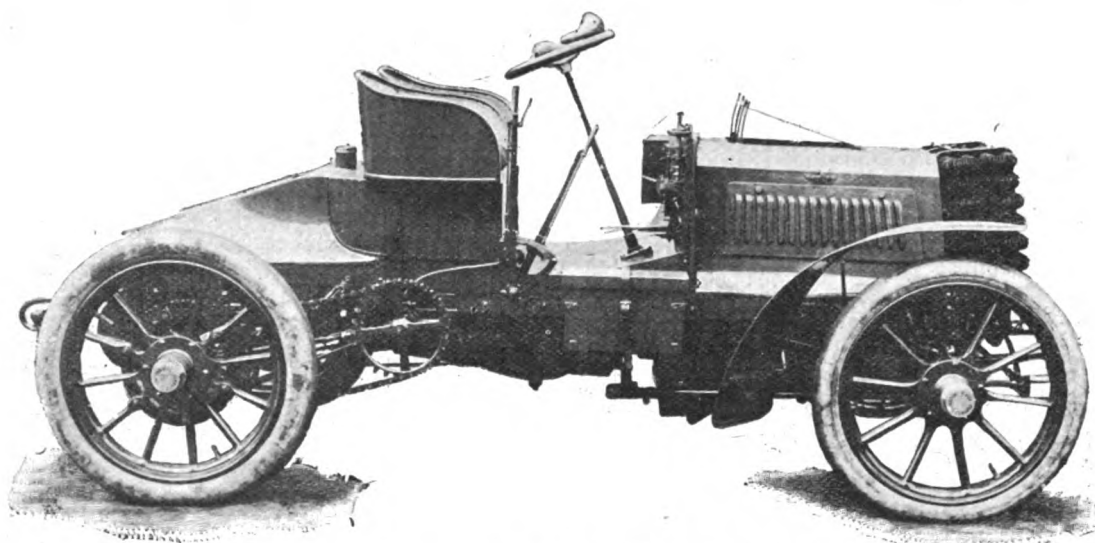
MOTOR-CARS form a prominent feature of the pictures shown by the American Biograph at the Palace this week. The pictures were taken on the occasion of the recent demonstration to County Councillors at Sheen House, Richmond, and a number of well-known motorists can be recognised. Mr. C. Cordingley heads the procession as seen on the screen, followed by Mr. E. Hutton, and the big electric car of the British and Foreign Electrical Vehicle Company. Then come a number of voiturettes, a Century motor-tandem, etc.

THE PARIS-BERLIN AUTOMOBILE RACE.



THE first of what will probably be an annual international competition for motor-cars was inaugurated on Saturday last, when fifty-five motor-cars forming the touring sections A and B started from the Place de la Concorde, Paris, on a journey to Berlin, a total distance of nearly 743 miles. From 8 o'clock in the morning such crowds had collected to see the start that the police were obliged to take special precautions for the regulation of the traffic. The weather lent its most obliging aid in the shape of bright sun and clear sky, and indeed everything was propitious of a successful event.

The competition has been divided into three classes, namely: Class A, for touring cars whose owners wish to have their times taken at every available opportunity in order to show the merits of the various systems; Class B, for touring cars whose owners want to be restricted in the least possible manner and journey as they please; Class C for racing cars. The first two classes started on Saturday and are to cover the distance in eight laps over the following route:—



THE 40 H.P. PANHARD RACER (1901 GORDON-BENNETT AND PARIS-BERLIN TYPE).
[La France Automobile.]

	Miles.
Paris to Reims	107½
Reims to Luxembourg	128
Luxembourg to Coblenz	89½
Coblenz to Frankfort	79
Frankfort to Eisenach	112
Eisenach to Leipzig	106½
Leipzig to Potsdam	93
Potsdam to Berlin	19

The racing class took quite another route, starting on Thursday morning, so that they can arrive in Berlin on the same day as the other two sections, making the following laps:

	Miles.
Paris to Aix-la-Chapelle	282
Aix-la-Chapelle to Hanover	276
Hanover to Berlin	184

To say that the race has excited universal interest is to state a truism which cannot be denied: all along the route of both the tourist and racing sections there has been a veritable ovation. Wishing to see something of the tourist part of the competition I took up my quarters at Reims, at the Lyon d'Or, a favourite resort of mine and an excellent hotel just by the Cathedral, in front of which stands the new statue of Joan of Arc. The amiable proprietors, Mr. and Mrs. Radlé, gave me a room on the ground floor with one window looking out on the front yard and the other out on the back yard, where I could see

at my ease all that was going on, but which proved anything but comfortable under the circumstances, as the sequel will show.

The inward control at Reims was fixed about a mile out of the town on the road from Epernay, and, as is usual, I find, in motor-car races, the cars were expected hours before they arrived. So early as 10 o'clock the spectators began to arrive, whilst the first automobile only made its appearance at 12.45. The driver proved to be M. Debacker. After him the cars kept on arriving until nightfall, and I even heard that the drivers of two of them were apostrophising the night porter of the hotel because he refused to open the yard door for them and their panting cars during the small hours of the morning.

I remarked particularly amongst the cars the Baron de Zuylén's 20 h.p. Panhard. It is chiefly remarkable for its very long wheel base—two and a half metres. It is essentially a touring car, and is very roomy and comfortable, with six seats facing forward. I hear that, owing to the long wheel base, there is little or no shock in going over uneven places in the road.

There were three lady drivers, amongst them the Baroness de Zuylén, with a handsome hooded 8 h.p. Panhard, and Madame Gobron, driving a Gobron-Brillié, and effectually protected

from the dust by a wrapper which only left goggles visible. The Baron and Baroness de Zuylén are taking matters comfortably with quite a staff of servants travelling by rail with mountains of luggage. The Prince of Arenberg on his Panhard, using alcohol instead of *essence*, and driving himself, looked really sportsmanlike.

The hotel was of course full to overflowing, and Reims seemed to be a general rendezvous for those who wished, like myself, to get a glimpse of the tourist sections. I saw the two brothers De Knyff, Pinson, Mors, the Marquis de Dion, Deschamps, and many other well-known *chauffeurs*. I noticed a new De Dion voiturette in the competition, with the motor in front and with a universal-jointed central shaft. The car appears to be very high above the ground and does not seem to follow the usual lines at all so far as shape goes. I could not judge of its capabilities, as it was having trouble with its gear wheels.

There were two serious breakdowns, one with a new 12 h. Peugeot belonging to M. Flameng, which was caused by the bursting of a tire whilst descending a steep hill near Epernay. M. Flameng and his party were shaken, but not seriously hurt, and were obliged to return to Paris by train, the car being badly damaged. The other breakdown was a car on which was M. Ferrod, the representative of the *Daily Telegraph*. The car had a collision with a cart, and the occupants were thrown out. However, the only injury was a cut lip, and the party was able to continue. I saw M. Ferrod, with a bandage

round his chin, taking his coffee in the courtyard, and he did not seem much worse for his spill.

Watching motors arrive in the hot sun is trying work, so I retired to rest very tired, and promising myself to lie in bed late on Sunday morning; but, alas, at 5 a.m. began on each side of me by the window looking on to each yard, the "vrum" "vrum" of the big Panhards, and after struggling vainly for ten minutes, I had to get up.

The start from Reims was a complete muddle, and finally the competitors had to give up the idea of starting in any given order. The same difficulty occurred, I well remember, in the 1,000-mile tour in England.

A slight shower during the morning laid the dust, but the weather was on the whole capital, and no accidents marred the run to Luxembourg, where a party of Belgians had run over from Brussels to welcome the travellers. Between Luxembourg and Coblenz the weather held up, but it was hot and dull. The competition seems to have settled down to complete regularity, the only incident worth recording being an ovation to the lady drivers on their arrival and the offer of bouquets of flowers.

At Hanover on Friday, the 28th inst., the Continental Caoutchouc and Guttapercha Company of Hanover gave a dinner in honour of the competitors. The Lord Mayor and the Corporation of the City of Hanover being present at the dinner to welcome the competitors in the name of the City.

On Monday, Tuesday, and Wednesday, whilst the tourists were forging ahead towards a common goal, the Place de la Concorde in Paris was even more animated than is usually the case, and that is saying a great deal. From morning until night there was a continual crowd outside the A.C.F., and as every new car came up to be examined, numbered, and marked ready for its three days' race to Berlin, it was immediately surrounded by the curious, and its points discussed, very frequently much to the amusement of its owner. All Paris *qui chauffe* was about the gates or in the yard of the A.C.F., and also a liberal sprinkling of English, Belgians, and Germans.

A row of cars—great and little—stood outside in the Place, and one by one, as their turns came, they were called for and driven inside the enclosure of the A.C.F., there to be first examined, then to have a number painted on them, and, lastly, to be *plombe* by the custom-house officers, of whom a special corps were in attendance. To be *plombe* means having a piece of string tied round some fixed part with a lead seal crushed over the two ends of the string in such a manner that the string cannot be removed without breaking the seal. If, when the car re-enters France, the string and the seal are intact, it is a proof to the customs house that it is the same car which they marked, and it is allowed to enter duty free.

The racing class was divided into four categories, viz. :—

1. Vehicles (motor-cycles) weighing less than 4 cwt. 3 qrs. 20 lbs.
2. Vehicles (voiturettes), weighing between 4 cwt. 3 qrs. 20 lbs. and 7 cwt. 3 qrs. 14 lbs.
3. Vehicles (light cars) weighing between 7 cwt. 3 qrs. 14 lbs. and 12 cwt. 3 qrs. 5 lbs.
4. Vehicles (carriages) weighing over 12 cwt. 3 qrs. 5 lbs.

In the last two categories, at least two passengers sitting side by side, and weighing at least 154lb. each, must be carried. Three Belgian light 12 h.p. cars weighed slightly over the limit for class three and were obliged to enter in class four.

With the Parisians, Panhard cars are first favourites, with their twenty-five cars, Mors coming next. Serpollet is, however, considered to be the dark horse. Mr. Edge and his Napier are thought to be out of the running, on account of the influence of the weight on the tires. Although there is only one English-built car starting, there are six Englishmen driving, viz., Jarrott, Heath, Edge, Rolls, Collins, and Keene. I give them in the order of their numbers. There are fourteen Belgians and nine Germans, the rest being French.

I learn that M. Levegh, who was to drive perhaps the most perfect car that ever went out of the Mors works, has been persuaded by his friends not to compete. His health is not

equal to these tremendous trials, and his car will be driven by M. Antony, a driver well trained to the Mors vehicles. M. Barras, another prominent driver, whilst out trying his machine the other day, was upset, and sustained a broken collar-bone, so that he, too, was a non-starter.

On Wednesday evening, when the lists closed, there were 155 starters, and nothing could have been finer nor more propitious than the weather. At the last minute two motor-bicycles arrived from Prague, sent by the firm of Laurent and Klement.

Amongst the starters I counted twenty-five Panhards, seven Mors, four de Dietrichs, four Mercedes, twelve Darracqs, six Decauvilles, six Renaults, two Peugeotts, two Delahayes, two Serpollets, two Werner bicycles, and seven de Dion motor-cycles. An unfortunate accident at the last minute prevented one of the new Serpollet cars from competing, so that steam is only represented by a 20 h.p. and a 6 h.p. AUTOMAN.

(BY TELEGRAPH.)

PARIS, Thursday.—Notwithstanding the early hour fixed, an enormous crowd assembled at Champigny Fort to witness the departure of the cars. All night long automobilists, cyclists, and pedestrians poured in a ceaseless stream through the Bois de Vincennes, all hastening towards Champigny. At three o'clock all the competitors were drawn up in order, according to the numbers which had been assigned to them, and word was passed round to make ready for the start. Day was just breaking, and the temperature was still somewhat cool, when, at half-past three, the leading car, driven by M. Giraud, darted off amid the cheers of the crowd. The remaining cars started at regular intervals of two minutes. Mr. C. Jarrott went off at 3.50 in a Panhard car, and Mr. Edge, in his 70 h.p. Napier, started 4.12. A number of accidents occurred in the early hours of the morning on the road from Paris to Champigny. The engineer of a German car fell from his seat and was somewhat seriously injured. The actual starters numbered 110, and about three and a-half hours had elapsed when the last vehicle left Champigny.

BASTOGNE (BELGIUM), Thursday.—The first four motor-cars to pass through this place, which is about 209 miles from Paris, were those of MM. Fournier, Hourgier, De Knyff, and Farman.

THE Automobile Club of America is reported to have decided on the organisation of an annual fifty or a hundred mile road race. It is said that the first contest will be over the Buffalo-Erie course, about the middle of September. The contests will be open to all motor-vehicles carrying two persons. The Club will also promote annually a race for the one-mile record. It will be held over a course, subject to the consent of local authorities, and well guarded by police. Steam, petrol, and electric carriages will compete in separate classes.

THE secretary of the Automobile Club on Wednesday last had an interview with Sir Evelyn Wood at the War Office with reference to the offer of members of the Automobile Club to place themselves and their vehicles at the disposal of the War Office in connection with the manœuvres. There will probably be no large manœuvres in this country this year, but Sir Evelyn Wood is anxious to place the arrangement on a permanent footing. Possibly the Automobile Club may be asked to provide three or four vehicles in connection with the Volunteer cyclists manœuvres which are to be held by the War Office from the 3rd to the 10th August next.

MR. F. B. THANAWALLA, of Bombay, has recently imported a comfortable motor-car for use in India. The vehicle, which is of French manufacture, is driven by electricity. The batteries are placed under the seats of the car, which is of the "dog-cart" pattern, with accommodation for two passengers. The car is capable of running at speeds varying from three to sixteen miles an hour, and can cover a distance of thirty miles before the batteries require re-charging. We learn that Mr. Thanawalla has already received orders for several similar cars, which are being built in Paris.

FLOTSAM AND JETSAM.

BY "FLANEUR."

NOTHING seems to come amiss to the all-conquering auto mobile. It has crossed the highest roads in Europe, even the famed Stelvio Pass, 9,055 feet above the sea, having succumbed to the attack of an Austrian Count on a 12 h.p. Cannstatt Daimler. The enterprise of the French *chauffeur*, however, is turning itself in the direction of Algeria and Tunis. There was the tour of M. Turgan in the "Quo Vadis" caravan; Baron de Crawhez also took a party into the interior; and now, according to *L'Illustration*, M. Sébastien de Neufville, Madame de Neufville, and M. Napoléoni have completed a tour of five thousand kilometres with a 12 h.p. Panhard et Levassor. Crossing by steamer from Marseilles, they drove from Algiers to Tipaza, Marengo, Milianah, and other towns, and back to Algiers. Then they proceeded to Tizi-Ouzou, Philippeville, and Tunis, wherethey embarked for Marseilles, and drove to Paris by way of the Rhone Valley, Lyons, and Dijon, after covering three thousand miles in all.

SOME spirited sketches of the tour, from photographs by M. de Neufville, appear in a recent issue of *L'Illustration*. They depict the party wrestling with puncture troubles, for on the burning sands of Algeria the tires got overheated almost to melting point, and frequent stoppages were necessary in order to allow the rubber to cool. When water could be obtained it was poured over the tires. Despite all precautions, however, punctures were more frequent than pleasant, but were philosophically endured. In Tunis the chief incident was the narrow escape from swamping which the party had when crossing a ford, owing to a sudden uprising of the waters. The natives everywhere were very friendly to the tourists, and accepted the new means of locomotion with Oriental composure.

ANOTHER interesting trip was that of Count Carl Schönborn-Bückheim, who took his bride from Rome to his ancestral home in Hungary by means of a 14 h.p. Benz double phaeton. A considerable number of illustrations of the journey are published in the *Allgemeine Automobil-Zeitung*, the official organ of the Austrian Automobile Club. They show, among other views, the car ascending and descending Mount Vesuvius, over a road that looks none too comfortable as to surface, and with very acute corners. The entire journey was successfully carried through, however, and a coloured supplement which illustrates the car itself shows it to have been a very smart-looking vehicle, painted white, with fine red lines, brass mountings throughout, and a hood to the rear seat.

It appears to be a cardinal principle of every London penny morning journal to have no mind of its own on coming movements, but tamely to follow the trend of public interest and opinion. In this respect the halfpenny papers have shown far more prescience and enterprise, as witness the length of time and the assiduity with which the *Daily Mail*, the *Daily Express*, and the *Morning Leader* have not merely "noticed" the automobile movement, but have actively encouraged it throughout. Obviously it is far more in consonance with the highest ideals of journalism that a paper should lead rather than follow, and it must be pronounced eminently unsatisfactory that the older journals should have allowed themselves to be elbowed out in this matter by their younger rivals.

The penny papers might easily have moved the clock forward by a couple of years had they been duly alive to the importance of automobilism, and there is not the slightest doubt but that we should be still further behindhand than we are without the generous encouragement of the *Mail*, the *Express*, and the *Leader* above named. Their educative influence has been undoubted, and also far-reaching as well. Their circulations are very large, and the fact that they cost but a halfpenny does not at all imply that they appeal to the unimportant sections of the community; a glance round any first-class carriage in a

morning train to town at once dispels a notion of that kind. But whereas there are three halfpenny morning dailies there are seven penny ones, not counting sporting and financial organs, and it cannot be said that the influence of these seven has been actively exerted in favour of a means of locomotion which will revolutionise the traffic of the civilised world.

FROM this state of things there is only one satisfactory inference to be drawn. The penny dailies are mostly behind the times; when, therefore, we do find them giving liberal room to any given movement it is an all but infallible sign that that movement has unmistakably "arrived." During the past week an unusual amount of space has been devoted to the Paris-Berlin races far more than was the case with the previous run to Bordeaux. It is clear, therefore, that the existence of the automobile is at last regarded as a great fact, and whether it is the Kaiser's prize, the remarkable time made by Fournier, or the King's interest in the movement which has stimulated the sluggishness of Fleet Street, the outcome is one which we may accept with becoming gratitude.

THE telegrams from Paris and Berlin nevertheless show the sub-editors in some cases to have been considerably at sea regarding automobile nomenclature. Even the *Daily Mail* on Tuesday "piled Pelion upon Ossa" in the matter of its blunders. What is a "Mars" car? What, too, is a "Meteor?" And who is "Janatzki?" and what is a "Serpolette?" If the *Daily Mail* had said "Mors," "Napier," "Jenatzy," and "Serpellet" it would probably have expressed the intentions of the transmitter of the telegram. Even more humorous was the curious inscription appended to one of some interesting sketches which the *Daily Graphic* published on Monday, illustrative of the scene outside the Automobile Club de France on Saturday at the start of the touring cars. "The Customs Testing Instrument" is the title given to a drawing of the usual iron which everybody who has crossed a frontier knows is simply used to affix the official *plombe* of lead which secures re-entry into the country without payment. The bare idea of a Customs officer being competent to "test" a motor-car is too comical for words. Many are the frontiers I have crossed, but an intelligent *douanier* is an individual I have rarely had the felicity of meeting. Competency apart, however, it need scarcely be pointed out that it is no part of a Customs official's duties to "test" a car or anything else; his concern is the collection of the impost, not the mechanical efficiency of the vehicle.

A SERVICE of electric omnibuses between Oedingen and Bilstein, Bavaria, is projected.

MESSRS. COURTAULD, the well-known textile manufacturers, are about to try a motor-lorry for haulage purposes. If the experiment proves successful the automobile will displace the present two-horse coaches between their silk factories at Bocking, Braintree, and Halstead.

MR. GEORGE ACE, who enjoys the unique privilege of being the sole proprietor of motor-cars for public service in the county of Pembrokeshire, stocks petrol and all accessories at his establishment, adjoining the railway station at Tenby.

MESSRS. G. F. MILNES AND Co. (Motor Department), of Balderton Street, Oxford Street, London, are now equipped with the most modern appliances for motor-car repair work, and have a large staff of skilled workmen constantly in attendance. Petrol may also be obtained at any hour from their premises.

MR. ALFRED J. ALLEN, who, at the beginning of the South African war, suggested the use of a six-wheeled armoured motor-car, capable of going backwards and forwards with equal facility and of manœuvring in a small space, has again intimated that the War Office is quite welcome to the design.

SAYS *The Gentlewoman*:—"Now that week-end parties are so rife, and to spend Sunday in London is to argue yourself unknown. Motors are becoming indispensable almost. You save yourself so much wear and tear. No rush to the stations, no porters, no bother. You simply fly from door to door."

MOTOR-CARS IN HYDE PARK.



THE FASHIONABLE ASPECT OF THE MOTOR-CAR.

SURELY, when that far-seeing lady Mother Shipton spoke of carriages without horses, she had in her mind's eye the motor-car, destined to mark as great, if not a greater, social revolution in the first decade of the twentieth century than did the railway engine during the early Victorian era. It is with us, its possibilities are realised, its necessity also, and it will stay. Our children will laugh at the opposition raised against it in certain reactionary quarters, just as we, as children, laughed at John Leech's clever drawing of the dear old gentleman saying, "Railways, sir! I hate them, and the sooner they are done away with the better!" Unlike the cycle, its immediate predecessor, the motor-car is a distinct labour saver, and not a mere outlet for superfluous energy, destined to be shelved whenever caprice or fashion may lead that superfluous energy into another channel.

It was the sight of many motor-cars met in Piccadilly the other day as we made our way West, determined to spend a quiet afternoon "on the benches in the park," that set this chain of thoughts rattling. Motor-broughams, landaus, and victorias passed in rapid succession; men in smart liveries on the boxes, and their occupants invariably fashionably-attired women, who, to judge by the absence of the sterner sex and the direction taken by the vehicles, were on shopping bent. Whilst pondering over this agreeable testimony to the docility of the much-maligned motor-car, we came to Apsley House just as a Locomobile swung into the carriage drive, pulled up in a trice, and deposited its occupant safely on the pavement, whence he gained the portal in two strides of importance and despatch.

But before we had been many minutes in the Park we had further and convincing evidence that Society has followed the Royal example and gone a-motoring. In twenty minutes we counted as many motor-cars; and what was most remarkable about them was that almost without exception they contained ladies only, and were driven by uniformed *mecaniciens*. The amateur enthusiast was remarkably conspicuous by his absence. Without a doubt Society has taken to the motor-car, and taken to it seriously, too. And where were the disadvantages we read about? Not a single car had the noise or rattle of a horse-drawn vehicle, and, thanks to a well-made and well-kept road, not a particle of dust did one of them raise. As to sitting cheek by jowl with one's coachman, there was none of it in the well-turned-out broughams, landaus, and victorias we saw. It is only on the record breaker, where every available inch of space is required for machinery, that this is necessary; and English ladies have not yet taken to racing. The so-called hideous costume so often railed against we looked for in vain. On the other hand, smart frocks, fit for a garden party or afternoon call, were the order of the day. Even in the motor-car itself we could find no fault. Generations of usage may have accustomed us to the sight of horses in front of all vehicles which do not run on lines, but to our way of thinking, the graceful evolutions, easy running, and perfect control of the motor-cars which we saw bearing their fair freight round fashion's arena at twice the pace of any horse-drawn vehicle, more than compensated for any amount of foreshortening.

As to the horses passed and repassed continually, they took no more notice of the cars than the cars took of them. Possibly they had their own troubles, of which overwork was not the least. One handsome equine equipage attracted our attention as it approached by the signs of distress exhibited by the near side horse—distress which evidently caused much alarm to the two ladies inside the carriage, who left it hurriedly. Meanwhile the symptoms of distress grew. A sympathetic crowd unharnessed it, a kindly policeman patted its face, a chair man ran for a bucket of water, and an old lady fumbled for her smelling-salts. But all to no purpose; its work was over for that day, at least, and a groom led it slowly away, whilst the coachman drove the empty single-horsed carriage home. Horse is but flesh and blood, and therefore as unreliable as man. A chill taken the night before whilst

waiting, a touch of the sun, or a mile too much, and a hundred and one other considerations which do not affect a motor-car, are an ever-present source of anxiety to the careful owner of horse-flesh. Nor are bodily ailments the only disadvantage presented by the horse. Disposition, nerve, and temper have sometimes to be reckoned with even in Hyde Park. Only one day this week a painful illustration of this fact was witnessed near Grosvenor Gate, when a pair attached to Lady Walters' carriage bolted, for no known reason, deposited her ladyship and daughter in the road, seriously injured coachman and footman, and, fortunately but slightly, a gentleman who pluckily attempted to stop the runaways.

Comparisons are, however, but odious, and from these we turned our attention to a serviceable-looking Panhard that bore signs of a long journey. In the *tonneau* sat the *mecanicien*, and on the box a lady taking a lesson in driving from the gentleman beside her. Now, had this been a horse-drawn vehicle, what gentleman would have dared to put his coachman inside and drive him round the Park? But the motor-car is an emancipator, and the fair *chauffeuse* drew not a single frown from disapproving Society.

Passing Achilles we came to Grosvenor Gate and turned into Brook Street, where is situated the Mecca of afternoon motorists—Claridge's Hotel. Outside this famous hostelry might have been an annexe of the Automobile Club. There we recognised the Baron de Meyer's electric car, Mr. H. H. Baring's *tonneau*, and several others owned by well-known motorists. Inside, in the spacious hall, devoted to tea at this hour of the day, were the rank and fashion of the motoring world, too numerous to name.

But it is not only for a drive in the Park that Society has adopted the motor-car. A run to Henley, Windsor, or Brighton and back in the day is quite possible, even with a most important evening engagement in view; and that without the harrowing thought of a train to catch. There are also signs of the decentralisation of London's fashionable centres. Society leaders are moving farther afield, and yet maintaining touch with the world. From the many beautiful and healthy suburbs that form a ring round London, and pleasant towns still further away, the motor-car brings its evening consignment of diners and theatre-goers. In the near future we may see Belgravia as forgotten as the Bloomsbury of our forefathers.

THE Silesian Automobile Club has just been formed in Breslau, Germany.

M. JEANTAUD has been elected president of the French Chambre Syndicale de l'Automobile for the year 1901-2.

THE Austrian Daimler Motor Company have just supplied a 16 h.p. omnibus for service between Bozen and Mendel, in Austria.

WE hear from New York that negotiations are in hand there regarding the sale of the American rights in the Singer motor-bicycles.

THE Chicago Automobile Club has taken the same steps as the Automobile Club of America to prevent racing in club outings, a pacemaker having been appointed to lead the way, etc.

ORDERS for two 30 h.p. Panhard cars have just been secured by the British Automobile Commercial Syndicate, Limited. One of cars is for Mr. W. B. Avery, of Windsor; and the other for Colonel H. M. Calmont, M.P., of Newmarket.

THE Northfleet District Council have examined and passed a second motor-car which was produced for their inspection by Mr. William Smith, of New Road, Gravesend, and ordered that a licence to ply for hire in Northfleet be granted to the applicant.

THE Yorkshire Automobile Club will hold a two-days' run to Doncaster and Worksop, to-day (Saturday) and Sunday. The meeting place is Manningham Park, Bradford, which will be left at 2 p.m., Worksop being reached the same evening. Sunday morning will be spent in a visit to the Dukeries, the return journey being made in the afternoon.

THE AUTOMOBILE MANUFACTURING Co., Ltd., 48/49, Long Acre, and North St., Manchester Sq., all cars in stock, Garage, Repairs.

A VISIT TO THE GARDNER-SERPOLLET WORKS.

BY AUTOMAN.

M. LEON SERPOLLET, whom I have known slightly for some years, invited me out the other day to see his new works, in the Rue Stendhal, Paris, and as I thought it would interest the readers of the *Journal* to make closer acquaintance with him, I took out my camera and notebook and asked his permission to use them. The permission was given, subject to the condition that I should be very discreet about the vehicles that were being prepared for the Paris-Berlin race. Everyone knows that M. Serpollet has entered three cars,



MR. A. HARMSWORTH'S 12 H.P. CAR

and though I had the advantage of inspecting the vehicles in process of manufacture, I must for the present say nothing about them. The works are very compact and thoroughly up-to-date, consisting of two large one-storey sheds; one shed is used for the offices, etc., while the other is divided, one side being occupied by the machine tools, and the other side used for the purpose of erection. At the present time the works are engaged

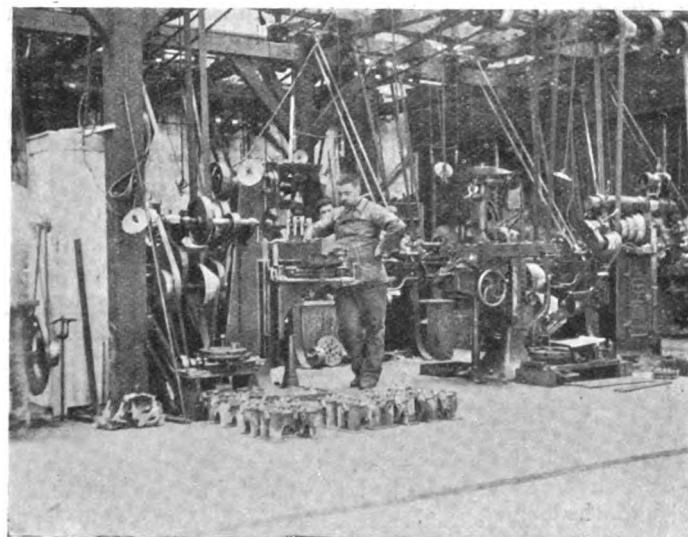


A SERPOLLET 6 H.P. CAR.—M. SERPOLLET AT THE WHEEL.

on 6 h.p., 8 h.p., and 12 h.p. cars, of which some 180 in all have been already made and delivered. The capacity is at present about one 6 h.p. car per day and one 12 h.p. car per week.

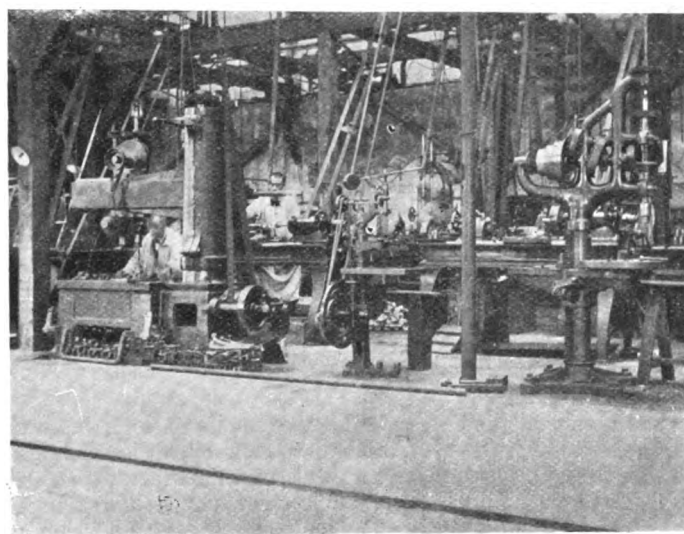
"What do you think of the future?" was my first question. M. Serpollet smiled, and replied, "Why, of course, I think that the motor-car of the future will be actuated by steam. I am

making," said he, "improvements and simplifications day after day, and I believe that shortly my car will be simpler to work than an electric car; my new pedal, for instance, regulates the admission of the water to the boiler. In my new 6 h.p. car the boiler is about twice the size of that of the 5 h.p. car, which I have now abandoned. You see, steam itself is so cheap that there is no need to save it." This car will only weigh about 650 kilos, and will sell for 6,800 francs. The engine gives more than 1 h.p. more than that of the old type. All the working parts are enclosed and run in oil baths. This car attains a speed of about 72 kilometres per hour on the road with three people up



A VIEW IN THE GARDNER-SERPOLLET WORKS.

"What about the 12 h.p. car?" I asked. "Why," was the reply, "my 12 h.p. tourist car weighs 1,300 kilos.; my racing car only 1,000 kilos. I have already delivered some twenty of them, and they are giving great satisfaction." "But what about the trouble of having to stop to take up water?" "Well," replied M. Serpollet, "We have got over that to a great extent; I can do over 120 kilometres on my 12 h.p. car without taking water; in fact, much more." "Are you not making a car for



ANOTHER VIEW IN THE GARDNER-SERPOLLET WORKS.

King Edward VII.?" I said. "Yes, I am, and it will be delivered in about three weeks," replied M. Serpollet, "and I have quite a number of orders from distinguished people; you know that the Shah of Persia has three of my cars, and one of his ministers one. I have received orders from Prince Alexander of Oldenbourg, the Duke of Leuchtenberg, Baron Friedericksz, Baron Arthur de Rothschild, Lord Wolverton, and quite a number of equally well-known persons."

THE GENERAL AUTOMOBILE AGENCY, D. Farman, Man., Garage open day and night, all cars in stock, 100-104, Long Acre, W.C.

M. Leon Serpollet is a man of forty-three years of age, and was born at Culoz, in the department of Ain. It was in his father's carpenter's shop that he and his brother Henry commenced the first experiments in 1877. His fixed idea was to produce a steam engine in which, instead of having a boiler with a large reserve of water and steam, the engine itself should pump into a, so to speak, empty red-hot boiler sufficient water for its actual instant requirements. M. Serpollet has clung steadily to this idea, which finds its practical use to-day in his automobile, and crowns the exertions and difficulties of his youth.

The advantages claimed for the Serpollet car are, in the first place the fact that it burns ordinary paraffin, which is less dangerous and much cheaper than petrol; the boiler is made entirely of thick steel tubes, and cannot explode or burn out; even if a joint were to give way, the quantity of steam contained in the boiler is so extremely small that no harm is done. There is no constant changing of gears, and consequently the repairs are very much smaller than in oil cars.

THE SONCIN MOTOR.

ALTHOUGH a good deal has been heard at different times of the Soncin motor, owing to the high speeds attained on motor-cycles fitted with it, its special features have not, so far as we remember, been illustrated and described. In general appearance the engine resembles the usual type of vertical air-cooled high-speed petrol motor; it is made in two sizes— $3\frac{1}{2}$ h.p. and $4\frac{1}{2}$ h.p.

Reference to Figs. 1 and 2 will, however, show that the side of the cylinder is drilled, around one line, with a series of holes; these holes are placed in such a position that the exploded gases can escape after the piston has been forced to the end of its stroke. The arrangement embodies, in fact, a premature

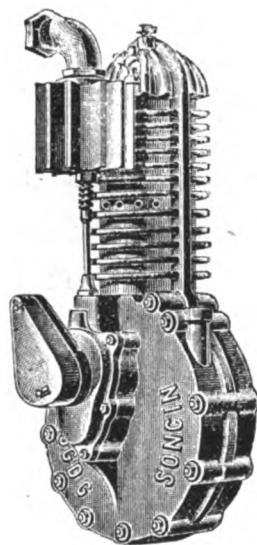


FIG. 1.

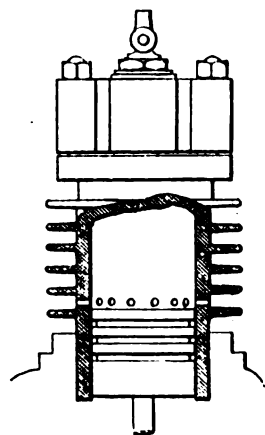


FIG. 2.

exhaust, so that the hot gases do not remain so long in contact with the walls of the cylinder, the sudden expansion helping to reduce the temperature. This very ingenious arrangement has the unfortunate drawback of being very noisy, and rendering lubrication of the cylinder almost impossible, the oil being projected through the openings. The makers of the engine have, however, recently introduced a modification by which the holes can be covered up, or opened at will, by means of a lever; by this arrangement streets and roads can be traversed without frightening animals and people with the intense noise of a continual fusillade. Messrs. Ruffier-Marnier and Company, of Boulevard Gouvion St.-Cyr, Paris, inform us that the Soncin motor is also now being made—water-cooled—in sizes ranging from 6 to 24 h.p.

A LADY'S EXPERIENCES ON A MOTOR-TRICYCLE.

LAST year I went to the Tilburstow hill-climbing competition on a humble bicycle. My husband wanted our car, so, not to be balked, I rode from town. I was alone, but I spent such an enjoyable and interesting afternoon that this year, although in the country, I resolved if possible to attend the meeting for the second time. Then it occurred to me, why not enter my De Dion tricycle with Whippet trailer? I wanted the fun of the ride and the outing, and although I fully expected not to shine at a public competition, that was a secondary consideration. Success can only be gained by experience. So we got all in order, and started gaily at nine o'clock on Thursday morning, June 13th. I don't mind confessing that I felt very adventurous although I had twice previously ridden the tricycle down from town, a distance of eighty-six miles. The road from Harboro' to Northampton is exceedingly hilly, but our combination made nought of the ascents, and we reached Northampton under the hour. From this point, we made excellent time, averaging over twenty miles an hour. We reached St. Albans at 12.25 after practically a non-stop run of sixty-six miles. We got down twice to have a look round, and once for a stretch of treacherous metal. Our engine behaved splendidly, and although we hustled along, it never once showed the slightest tendency to overheat. We romped up Dunstable Downs, leaving the poor cyclists toiling wearily in the rear. At St. Albans we lunched, and then pursued the journey to Barnet.

Hitherto, our progress had been one of uninterrupted pleasure. We had taken it in turns to drive and were well pleased with our conveyance. But who shall describe the road from Barnet into London? It is a disgrace to any civilised town. The jolting and shaking we received were something awful, and to go fast was out of the question, let alone the severe policemen who lined the highway. "Why are you pulling up?" I inquired of Brooks, who had the seat of honour in front. "I've got the stitch that bad, ma'am, I can hardly stick on," was his piteous reply. I made a mental note of the observation, and determined to take my full share of the bumping on the return journey. Fair play is a jewel, no matter what a person's station may be in life. In spite of the state of the road, we reached Regent's Park in five hours from the start, and proceeded to Clapham Junction, where we lodged our machine with Mr. Linley, of the Whippet Cycle Works. A day of rest proved welcome, for, to tell the truth, I ached all over, much as one aches after the first hunt of the season.

Saturday, the 15th, saw us off in good time, and we jolted and bumped our way out of town, *via* Tooting and Mitcham to Godstone. Such villainous roads! They really appal country people accustomed to a decent surface. Arrived at Tilburstow, we at once climbed the famous hill. Our engine was nicely warmed, and we ascended in splendid style, much better than later on in the afternoon. The pretty little country common in front of the village, with its duck pond, its grazing horses and old men sitting placidly smoking their pipes under the shady trees, was truly typical, and gladdened one's eyes after the roar and bustle of the dirty streets. Presently, car after car came rolling up, attended by the smaller fry of Werner bicycles and tricycles. It was a most interesting spectacle. Unfortunately, the main road was up for drainage purposes, which led to some confusion. The afternoon was glorious, and the proceedings were an unqualified success. It was worth going miles to see the manner in which Mr. Mayhew's beautiful 20 h.p. Panhard flew up the hill; but its performances were eclipsed by Mr. Edge on the mighty 70 h.p. Napier. By the way, why is this celebrated car sometimes described as 50 h.p., sometimes as 70 h.p.?

A lady competitor on a tricycle, with a pair of very dusty boots and an equally dusty skirt, was possibly somewhat of a novelty. If she bungled matters and made a fool of herself, she can only crave indulgence for her shortcomings. To start at a moment's notice up a severe hill with your engine cold is not quite the same thing as climbing an ascent at your leisure and

with your mixture already nicely regulated. We discovered too late that we were suffering from a loose connection, the result, no doubt, of the awful shaking up on London roads. However, we achieved the ascent—if not quite so successfully as in the forenoon—and wended our way back to town in haste, having a dinner engagement. The next morning we started for home at ten, and had a splendid run as far as Newport Pagnell, the tricycle running in magnificent form. Here we lunched; but on proceeding on our way, the engine took to missing. We set the trembler, tightened the plug, which had also suffered from the Barnet road, and reached Northampton shortly after two o'clock. But from here our good De Dion began to falter, and, after crying a halt, we finally opened the battery case, and discovered the terminal had been jolted completely out of position. We re-attached it, but finding matters not quite all one could wish we switched on our spare battery, when lo! off she bounced as gaily as ever, and brought us home in gallant style at 4 p.m.

MARY E. KENNARD.

THE prize money in the recent Paris-Bordeaux race amounted to £460, of which M. Fournier and M. Giraud each take £80.

IN connection with the Henley Royal Regatta on July 3, 4, and 5, Mr. J. A. W. Ratty, of Henley-on-Thames, has arranged for a cycle and automobile *garage* inside the regatta meadows.

THE King and a party of guests left Sandringham on Monday afternoon for London. His Majesty rode to Wolferton Station in his motor-car, and was given a hearty reception by crowds gathered to witness his departure.

MESSRS. PANHARD AND LEVASSOR, of 14, Regent Street, London, W., now stock Clipper-Michelin tires (Panhard size). They have also opened works and a *garage* at Hanover Gate, Regent's Park, where repairs can be promptly executed and spare parts for all of their cars obtained.

PRINCE MAX VON FURSTENBERG has discovered a new way of going to Court. Advices just to hand state that he has driven from his castle at Donaueschingen, in Bavaria, to Prague, in order to pay homage to the Emperor Francis Joseph. The Prince drove a 12 h.p. Panhard, and did the journey of 367 miles in nineteen hours.

THE Russian Customs authorities have decided that when, in the case of automobiles with undetachable motors, it is impossible to ascertain, from invoices or other documents, what is the actual weight of the motor, such weight will, for the purpose of calculating the duty leviable thereon, be taken as equivalent to 30 per cent. of the weight of the car with the motor attached.

A KEEN rivalry appears to have been set up among the makers of electric vehicles. The recent lengthy run of the car of the British and Foreign Electric Vehicle Company, on a single charge, has induced the Canadian Electric Vehicle Company to attempt to go one better. The cars of this firm are on the Still system, and a new form of battery has lately been applied thereto, which will be put to a practical test during the present week in an endeavour to eclipse the recent achievement.

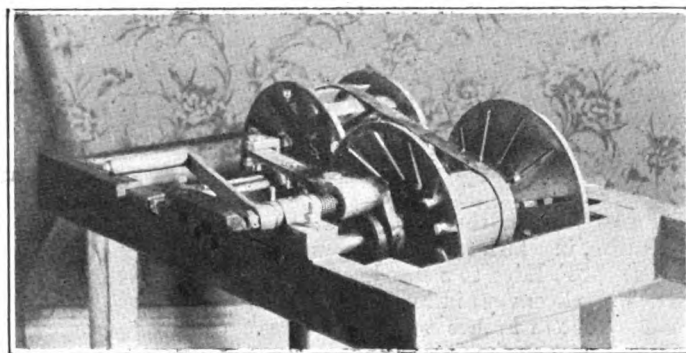
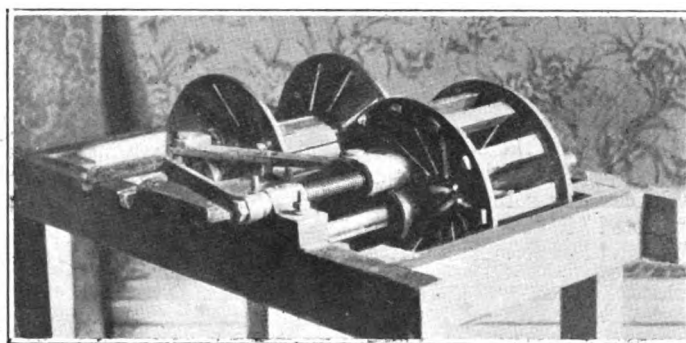
IN a circular just issued to the shareholders, the directors of the Motor Manufacturing Company, Ltd., state that they have decided to limit, as far as possible, the production at the works (other than trade vans) to two types of motor carriages, namely, the *voiturette* called "The Miniature Panhard," fitted with the company's 5½ h.p. water-cooled De Dion type motor, and the new light carriage fitted with the two cylinder 7 h.p. Panhard type motor. A large number of each of these specialties have been laid down and are now being produced.

MANUFACTURERS and agents who are entering vehicles for the Glasgow trials should bear in mind that it is the intention of the Trial Committee to recommend to the Judges Committee that special tests should be held to ascertain whether the vehicles are fitted with sufficient brake power, and especially that the brakes are to be so constructed that they will prevent the vehicle from running backward if stopped on a stiff up gradient. It is suggested that the certificates to be given in connection with the trials should be endorsed with a statement as to the efficiency of the brakes in this respect.

THE SINCLAIR VARIABLE-SPEED GEAR.

DURING the past few years there have been several attempts made to devise a reliable system of variable gear by means of expanding and contracting pulleys, a number of which have been illustrated and described in the *Journal*. One of the latest devices of the kind is that which has recently been introduced by Mr. A. Sinclair, of Portobello, Edinburgh, and of which illustrations are given herewith.

To attain the variation of speed, the driving and driven pulleys are each made so that they can be increased and decreased in diameter, and for this purpose are each constructed in two separate sections, the outer flanges of each section being formed or built cone-shaped from the hub to the periphery, the arrangement resembling two truncated cones. Any desired number of radial slots are formed, extending from the hub to within a short distance of the outer edges of both of the sections of the pulley, to receive a corresponding number of "sectors" or "dogs,"



which form in their centre the plates on which the belt runs. The sectors are connected up to the two cone-shaped sections of the pulley by insertion in radial slots, means being provided at the ends for attaching them to a smooth plate or to either ball or roller bearings which ride up and down upon the cones as the sectors are expanded or contracted.

A half-section of each pulley is allowed lateral movement along the shafts, but is kept rotating by a key let into the shaft engaging with slots in the hubs, the other two halves being keyed fast to the shafts. The method of contracting and expanding the two pulleys is plainly shown in the illustrations, the pulley in the model from which these were made being proportioned in the ratio of 4 to 1. The belt shown is simply an ordinary strap, the pulleys being built to take a 3-in. belt. Arrangements are also made so that a lever may be used for working the pulleys instead of the handle shown. In the event of the belt stretching it can easily be taken up by a simple attachment connected to the clutch of the driven pulley, which will expand the sectors until the proper tension is obtained. This is done when the pulley is at its smallest circumference.

THE GENERAL AUTOMOBILE AGENCY, D. Farman, Man., Garage open day and night, all cars in stock, 100-104, Long Acre, W.C.

CONTINENTAL NOTES.

BY AUTOMAN.

THERE is a new project on foot in France for the regulation of the speed of motor-cars, which does not commend itself either to the users of automobiles or to the public, and which it is to be hoped will never become law. The new scheme provides for the attaching of two large numbers to all cars capable of exceeding the legal limit—that is to say, a speed of $18\frac{1}{2}$ miles per hour in open country. The proposition can hardly have originated with anyone cognisant of the question, for it is evident that almost any car can exceed that speed down hill, and again, the change of the chain pinion is all that is necessary to make the fastest car incapable of exceeding $18\frac{1}{2}$ miles per hour, or this can equally easily be accomplished by altering the governor, so that the fastest car may pass an examination and be certified correctly as exempt from the numbering regulation and yet five minutes work on the regulator of the same car will enable it to do fifty miles an hour.

A SECOND point in the proposed regulations is equally open to grave objections. It is suggested to have less "tooting" and only to allow the horn to be used for giving warning of the arrival of the car in dangerous places. The restriction to tooting, however much we may all be in favour of diminishing its annoying persistency, is fraught with many difficulties and risks. For instance, the unfortunate motorist will be continually in the quandary of having to choose between being summoned for unnecessary "tooting" or being prosecuted for not having "tooted" in case of an accident. Naturally he will choose the first and less serious alternative, and the "tooting" will go on just as before.

THE Baron de Zuylen, at the dinner which he gave to the winners of the Paris-Bordeaux race, told an amusing story of what happened at the banquet given to Levassor on the occasion of his winning the first race to Bordeaux and back. One of the speakers proposed the health of the winner, but added that he also drank to the health of him who would in the future average 80 kilomètres per hour instead of 22 kilomètres. Levassor, on hearing this, leaned over to the Baron and said, "What a pity it is that on these occasions someone always makes a fool of himself."

LAST Saturday's *Vélo* has on its front page a paragraph headed "Le Bluff de Edge," with an evidently inspired article and a letter from the pen of Mr. D. M. Weigel, and over his signature, in which letter French automobilists are all challenged by Mr. S. F. Edge to a speed contest with his 70 b.h.p. Napier. Mr. Weigel conveys in his letter the idea that this challenge is made public in France with Mr. Edge's consent. Osmont, the motor-cyclist, is the first to express his willingness to take up the challenge, and quite an interesting event may be anticipated as the result. Now that there has been time to test and complete the Napier, and that the Paris-Berlin race will give further experience to its driver, it would be a feather in Mr. Edge's cap, and every Englishman would be delighted to see him turn what the *Vélo* calls "bluff" into serious earnest.

To judge from the record which Mr. Edge made on the road to Chartres last Sunday, it will be a very close contest. It seems that in order to make a test of the speed of the Napier, Mr. Edge secured the services of Mr. H. J. Swindley, who timed him first over a measured kilomètre and afterwards over a measured five miles. The kilomètre with a flying start was accomplished in 32.25 seconds, at a speed of 111 kilomètres or just over $68\frac{1}{2}$ miles per hour. The five miles was accomplished in 4 min. 44.35 seconds, or at the rate of nearly $63\frac{1}{2}$ miles per hour. This beats any record of speed publicly made and Mr. Edge so far holds the palm.

THE tour of Holland organised by the Dutch Automobile Club has excited the same enthusiastic reception along the route as did the famous 1,000-mile Trial in England. The Dutch are

not a demonstrative race, and it is all the more striking and agreeable to those interested in automobilism, to hear that along the line of route schools have been closed in order to allow the scholars to witness the passage of the cars, houses have been decorated in their honour, and even business houses have given their workmen holidays. At Barne, for instance, the houses were all beflagged, bands were playing, and an enterprising horticulturist rained roses on the heads of the competitors.

THE Board of Public Works in Italy have just approved new regulations for motor-cars on the public highways. The maximum limit of speed is to be nine miles in the towns, and eighteen and a-half miles in the country. All who wish to drive motor-cars must pass a public examination, and obtain a certificate of competence.

AN automobile race has taken place in Alsace-Lorraine from Strasburg to Mullhouse and back, ninety-six miles. The heavy rain made the roads very bad, and yet the winner, M. Varlet, covered the distance in one minute over three hours, doing an average of nearly thirty-two miles per hour.

THE motor-car in France has made another great conquest for it has been acknowledged by the Church. A certain devout gentleman, lately becoming the owner of a motor-car, has had it blessed by the curé of Stains. *La Locomotion Automobile* suggests that a suitable patron saint for automobilists would be St. "Panne," who suffered martyrdom in Africa.

CORRESPONDENCE.

THE SPRAG DIFFICULTY AGAIN.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Referring to Mr. Thatcher's inquiry *re* sprags on his car; if he could fit the contrivance with which the $3\frac{1}{2}$ h.p. Gladiator voiturette is provided, he would overcome all his difficulties. It is a small lever that acts on the differential gear, and it absolutely locks the back wheels. It is put into operation by a small handle on the steering-post.—Yours faithfully,

J. CUSINS NIXON.

BRAKE POWER.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I should be very glad if some reader will advise as to increasing the brake power of a Clement-Panhard. The pedal brake working on the countershaft is insufficient alone, and I am reluctant to use the tire brake. I should like to know what I can add to render me independent of the tire brake.—Yours truly,

STEPHEN DE SAVE.

THE GRADIENT OF SUNRISING HILL.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I should be pleased if any of your readers could tell me the gradient of Sunrising Hill. It lies between Stratford-on-Avon and Banbury. I was told by the villagers that it was much steeper than Edgehill, but I cannot find it mentioned in any Contour Road Book. It seemed to me much stiffer than any hill encountered on the 1,000-mile Trial.—Yours faithfully,

FRITZ MUHLENKAMP.

A CHALLENGE.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Having seen a letter from Mr. S. F. Edge in one of the papers, stating that he is willing to accept a challenge for a race with his Napier car, I beg hereby to challenge him for a race of 400 miles, to be run before the 1st August next. Hoping that Mr. Edge will see his way to accept above,—Yours faithfully,

pro MAURICE FARMAN,
D. FARMAN.

COST OF REPAIRS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—In reply to Mr. A. H. Nister's enquiries in your issue of the 22nd inst., I would like to mention that my car is a 6 h.p. Daimler Mail Phaeton. It was built in Coventry, the body being by Mulliner, of Northampton. The tires are solid. I have not kept a strict account of the mileage covered, but reckon it by the consumption of petrol. In twelve months I used over 400 gallons and this at fifteen miles to one gallon equals 6,000 in one year over roads made chiefly of flint. I am using the same tires still, but intend renewing those on the hind wheels next month. This is not absolutely necessary, but I prefer to do so to save the rims, which are of more importance, even though the rubber might possibly be used a little longer. The front tires will last out two sets of hind ones, as they do not drive. Pneumatic tires would be a source of constant worry in a district like this, and as I use my car in my practice I must run no risk of delay such as a puncture would mean.

The only repairs necessary to my car during the fifteen months were four times the valve spindle broke, but as I always carry spare valves I was not delayed more than ten minutes, on an average, renewing this, and the cost of each spindle was 3s. 6d. Twice I had the top shaft brass bedded down and renewed and this was a preventable trouble that I might draw attention to now for the benefit of owners of Daimler cars built over one and a-half year ago. The bearing at the bevel end of shaft was lubricated by a shallow cup into which the grease splashed when the car was running. When putting the countershaft wheels into gear they often struck the bevel wheel, and small particles of the hard steel chipped off. These were caught in this cup and sucked into the bearing with the grease; the result can be imagined. This happened twice before I hit on the cause, and, with the kind assistance of a friend, devised its cure. I now have a lubricator on the dashboard, with a strong spring in it; a copper tube runs from this, through the lid of the gear box, into the top of this bearing, and so it is provided with a constant supply of grease. I had brasses made somewhat small, and put in a shaped liner of brass under each. When the brass is a little worn, I merely take out the liners and file them down—this is a very simple thing and saves much trouble.

I did not have any other troubles, except to clean my lamps and change the wicks occasionally. I take a personal interest in the car, and do not allow it to go untended. After fifteen months' wear I drove it to Coventry from Windsor, and did not do a single thing on the way, except replenish the petrol from my extra supply tank. When the car was tested there, it gave over $5\frac{1}{2}$ b.h.p. I had the engine taken down and compression plates put on the pistons, and it now gives 6-8 b.h.p. These things, however, cannot be called repairs during the one year and three months referred to. I also, during that time, had wheel steering put on instead of tiller steering, and had a number of minor improvements added. The bottom of the water-tank had rusted, and I had a new one put in instead of having it patched, and then put in a new top speed-ringer.

If Mr. A. H. Nister lives anywhere in this neighbourhood I should be pleased to show him my car, and let him see how it is kept. The mistake most owners make is that they trust the lubrication and care of the machine to young men who know nothing of engineering, whereas no one would ever trust a valuable pair of horses to an odd man. I have made a rule now, and impress it on a man when he comes to me to clean my car, that I will not give him a character as a motor-car driver unless he stay with me two years and is strictly sober.—Yours truly,

H. E. BRUCE PORTER.

GOODS SERVICE FOR SURREY.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—A paragraph appears in your issue of 22nd inst. relative to a suggested motor goods service for Surrey. It may interest your readers to know that a scheme for conveyance of goods between Guildford, London, and intermediate places has

for some little time been developing, and arrangements are approaching completion.

The contemplated syndicate has already secured support to the extent of about 2,000 tons per annum of a class of goods for which high rates are paid to the railway company.

I shall be happy to hear from any correspondent who may be disposed to co-operate either financially or commercially.—Yours faithfully,

J. JAMES BAILEY.

THE PREVENTION OF SIDE SLIP.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—While reading Mr. Sennett's able and interesting article, "A Run Across France on a Racer," I was extremely surprised to find that a gentleman of his well-known and admitted abilities should seriously advocate front driving for high-speed motor-carriages, and also the often-tried device of making all four wheels steer as a preventative for side slip and skidding, etc. While granting these advantages to be secured, surely Mr. Sennett knows the price that must be paid for them. Not to unduly trespass on your valuable space, and to take the matter very briefly, let us look at both questions seriatim.

Firstly, front driving is a favourite scheme with many motor builders, and has been from the days of Cugnot, but if Mr. Sennett will turn up his automotor history he will find none of the many motor-vehicles from time to time built of this type have ever shown any particular turn for speed, one reason being that sufficient weight could not be placed on the driving wheels without seriously affecting the steering; where the drivers were also the steerers, and where the rear wheels were employed to steer, the handling of the carriage was rendered very troublesome, and in a large and heavy car well nigh impossible. It is perhaps hardly fair to compare locomotive practice with that of the road, conditions being so dissimilar, but surely it is a fact worth more than passing notice that in all fast running engines the bogie invariably is a *leading* one. (I am not saying that no front-driving locomotives exist, or are incapable of fast work, be it understood, but merely that the fastest are as I have stated.)

However, this is by the way—and to take the next point. Secondly, if all four wheels steer, how will Mr. Sennett get his power to the wheels? Frankly, I fail to see how without complications of universal joints and bevel gear, with their accompanying costly fitting and excessive wear. Granting it *can* be done with an electrically-driven car, I think it will be agreed that the electric car has to make a great many strides in improvement before it will be capable of taking a long and sustained journey. With any other power (admitting electricity to be put out of court), whatever sort of appearance would the under side of a car present with Mr. Sennett's device! I dimly picture a maze of driving chains, swivels, universal joints, and levers, with a blue haze of petrol and bad language as an accompaniment. Let us cast a veil over the painful subject.

Speaking in all seriousness, I really think Mr. Sennett cannot have taken all points into consideration, for, taking the steering difficulty alone, he will see for a really high speed he must adopt the Ackermann form of steering axle, and a moment's thought will convince him that either four universal joints or four sets of mitre wheels will be wanted to convey the power to the wheels. Now, putting aside the mitre wheels, which, as is well known to engineers, should be avoided wherever possible, let us but look at the universal joints. With the usual form it is admitted that beyond an angle of fifteen degrees the motion is sensibly irregular with accompanying friction. Should we dispose of this by the use of a special form of joint (like the clever arrangement of Messrs. Sydenham and Watkinson) how will this work in clouds of dust and showers of road grit? The cost will be enormous, and I fear Mr. Sennett will find his advantages can be too dearly bought.

I trust he will not feel annoyed by my briefly stating these facts, which I submit as not only my opinion, but as amply borne out by actual practice.—Yours faithfully,

SIDNEY RUSSELL.

THE CROWDEN STEAM MOTOR FIRE-ENGINE.

MR. C. T. CROWDEN, of the Motor Works, Leamington, who was prominently associated with the design and manufacture of fire-engines some years prior to his connection with the motor industry, has recently produced a motor fire-engine. The engine, which has been converted, belongs to the Norwich Union Fire Insurance Company. It is stationed



FIG. 1.—GENERAL VIEW.

at Worcester, and during the process of conversion has never been out of regular use, but has attended several fires while the alterations to it have been in progress. The original road wheels were far too light for automobile purposes, and a new set of wheels was constructed under Mr. Crowden's patents, by which the spokes are set back at the hub, thereby ensuring safety against the great lateral strains to which motor-wheels are subjected. The hind or driving wheels are fitted with star wheels and sprockets. Differential shaft and gearing is hung to the main frame, in front of the brake shaft, by two special brackets, and fixed by two bolts, these bolt holes being practically the only fresh holes made in the existing frame. A motion frame for carrying the crank shaft is attached to and can be removed from these brackets when required. Each end of

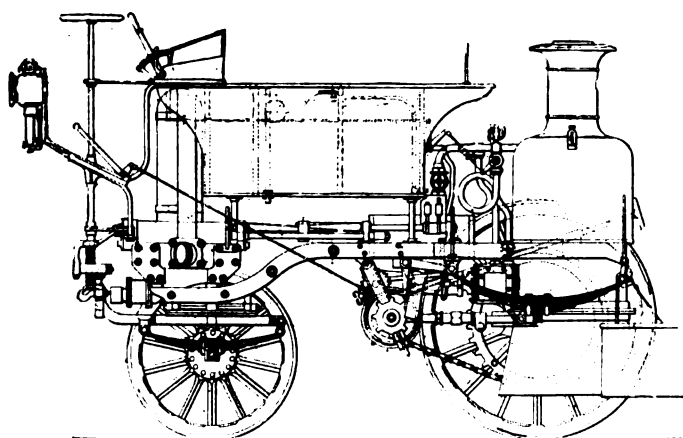


FIG. 2.—SECTIONAL ELEVATION.

the differential shaft is fitted with a sprocket pinion, and connected up to the hind wheels by means of a chain, which is adjusted by two setting-up radial stays. To this frame is attached an independent double-cylinder horizontal engine fitted with link motion, driving a double-throw crank shaft, to one end of which is fitted a pinion driving the differential gear shaft. Steam is taken to the propelling engine from the main steam pipe feeding the fire-engine, and the exhaust is taken into the existing fire-engine exhaust pipe. The old hose-box has been re-

moved and a water-tank substituted, having a seat for three men to sit abreast, and a fireman sits on the top of the water-tank with footboards as before. The centre man or driver has full control and manipulation of the engine from his seat. An extra screw brake is provided as an emergency brake, which can be operated from behind by the stoker. The coal bunkers have been altered to give a larger capacity, and a seat is fitted for the stoker for firing *en route*. The boiler is provided with a detachable ashpan for preventing the hot cinders falling upon the road. The original fore-carriage is used, a channel steel sector being fitted to the splinter bar by two stanchions, and a chain pinion attached to the vertical shaft gearing into a length of pitch chain fixed in the channel to serve the purpose of a rack. Should the motor part of the engine become disabled the motor engine and gearing can be easily removed by withdrawing a few bolts, and the engine used as a horse-drawn vehicle. A boiler feed-pump has been attached, worked from the counter-shaft, also a special apparatus for filling the water-tank from the river or roadside streams and other sources. The motor engine has proved itself very satisfactory up to the present; it will run on the level road at a speed of about twelve miles an hour, and will climb all the hills that have so far been met with, some grades of which are very severe in this district. It is stated that a very great saving will be effected by its use in Worcester, the horsing of the engine previously costing a guinea a mile, and the work being so severe that no one cared about lending their horses for the fire-engine, which weighed about three tons when loaded with all its appliances and firemen. The motor, after lighting the fire, can be got away in about five minutes under its own steam. Mr. Crowden believes this to be the first practical steam motor fire-engine yet constructed in this country in which separate propelling engines are fitted with expansion and reversing gear wholly controlled from the driver's seat.

THE Reading Automobile Club will hold its annual non stop run to day (Saturday). The destination is Oxford, and each competing car will be required to either carry an observer or to keep within sight of the judge's car.

MOTORISTS passing through Gravesend can now have their requirements met by the Clarendon Motor Company, at the Clarendon Hotel, the concern now stocking petrol, grease, etc. They have also opened a *garage*, and have an inspection pit and other conveniences. Benz and Daimler cars are also kept on hand for hire.

It will come as a surprise to many to learn that Mr. E. J. Coles, so long connected with Messrs. Hewetsons, Ltd., has severed his connection with that company and is entering the automobile trade on his own account. Mr. Coles, who is at present located at Criterion Buildings, Upper Holloway, N., where motor repairs of all kinds can be carried out, will shortly open a depot in the West End, where a large stock of new cars will be carried.

A COMPANY has been formed, to be known as the London Distributing Kitchens, Ltd., "to supply complete meals of all kinds, including wines, spirits and beer, and all table fittings and requisites, to persons at their own residences, chambers, or offices in London, and within a five-mile radius from Charing Cross." A feature of interest from an automobile point of view is that it is proposed to deliver the meals in specially constructed motor-vans, an illustration of which is given in the prospectus which has been sent out this week.

ON Thursday last the Motor Manufacturing Company, Ltd., organised a Press visit to their works at Coventry, when the visitors were entertained at lunch, and afterwards driven on motor-cars to Northampton. The directors of the company wish to remove from the minds of many pressmen the idea that the motor-cars produced in this country are not equal to those manufactured on the Continent, and in order to demonstrate that this is not universally correct, the trip to the company's works and the subsequent run on English cars was arranged.

HERE AND THERE.

THE usual quarterly 100-Mile Non-Stop Trial organised by the Automobile Club is fixed for Tuesday next, July 2nd.

DIEPPE is organising a fête for the 6th, 7th, and 8th of July, in which the motor-car is to play a prominent part. The Dieppois hope to eclipse anything of the sort ever seen before.

THE members of the Automobile Club held a pleasant run to Henley on Saturday last, the route followed being via Hammersmith, Gunnersbury, Brentford, Colnbrook, and Maidenhead. Dinner was taken at the Red Lion Hotel.

ON Thursday next, in connection with the bankruptcy of Messrs. Pennington and Baines, Messrs. Norman and Bowen will put up for sale, at Lamb's Conduit Street, London, W.C., "a valuable 36 h.p. high-speed Pennington motor-car."

MR. C. ARTHUR PEARSON is reported by the *Motor World* to have gone to America in a search for an automobile capable of travelling a hundred miles an hour—a rather appropriate rumour in connection with the editor of the *Express*.

THE Motor Trust Limited, has been registered with a capital of £3,000 to adopt an agreement, made June 12, with G. F. Milnes and Company, Ltd., and to carry on the business of manufacturers of and dealers in motors and other carriages, mechanical engineers, etc.

MR. L. T. GRANT, manager of the Honolulu Automobile Company, has arrived in San Francisco on his way East to buy supplies for his company, which started a public motor-car service in Honolulu about three months ago. Twenty-three vehicles were put on the streets, and have been very popular.

Automobile Topics states that Mr. C. J. Field, of the Automobile Club of America, is in receipt of a letter from Mr. S. F. Edge, of London to the effect that the latter expects to take part in the American sweepstakes over the Buffalo-Erie course with the 70 h.p. Napier car.

ELSEWHERE in the present issue we give an illustration of M. Louis Renault on the car which came in first in the voiturette class in the recent Paris-Bordeaux race, his time for the 327 miles being 9 hr. 32 min. The performances of the Renault cars formed one of the features of the race. Four vehicles started, and notwithstanding the long journey, they arrived safely at Bordeaux all within half an hour. The Roadway Auto-Car Company, Limited, are the agents for the Renault cars in this country.

THE Charron Automobile Company of America is reported to be in progress of organisation in New York. M. Charron, the well-known automobile racing man of Paris, is personally interested in the venture. The sale of Panhard and Mors vehicles, and later the manufacture of the same in the United States, constitute the scope of the new company's operations.

THE case in which Mr. L. A. Legros was fined by the Chertsey magistrates forty shillings for driving a tricycle and trailer at more than six miles an hour, was considered at a recent meeting of the Standing Committee of the Automobile Club. It was directed that Mr. Legros should be informed that he should proceed with the appeal, and that the Committee have voted ten guineas towards the expenses of the appeal; it is further proposed to invite firms who are interested in the manufacture of tricycles and trailers to contribute towards the cost of appealing.

AT the Royal Agricultural Society's Show, which is being held at Cardiff this week, the Mann Steam Cart and Wagon Company, Limited, Leeds, have on view one of their steam lorries and also one of their steam tipping carts. The Yorkshire Steam Motor Company, Limited, of Leeds, show a steam wagon to carry three to four tons, while the exhibit of Mr. J. Scott, of Duddingston, Edinburgh, consists of a self-propelling cultivating machine of 20 h.p. Several motor-cars are also to be seen, the Lanchester Engine Company, of Birmingham, being present with one of their four-seated motor phaetons, and Messrs. Marshall and Co., of Manchester, with a couple of vehicles—a 8 h.p. tonneau and a 4½ h.p. voiturette.

FURIOUS DRIVING CASES.

AT the Shire Hall, Nottingham, George Hunt, cycle agent, of West Bridgford, was charged with driving a motor-car at a speed greater than twelve miles an hour. There were further charges against the defendant of driving the car at a greater speed than was reasonable and proper, having regard to the traffic on the highway, and of not stopping at the request of a person in charge of a restive horse. Mr. H. P. Day, for the defendant, did not call any evidence, but addressed the bench. He emphasized the desirability of nothing being done to discourage the motor-car industry, and contended that the case had been exaggerated. There was a prejudice against motor-cars at the present time, which, he hoped, would die out, and a driver of a motor-car was at the mercy of any person who might vindictively or otherwise request him to stop. The Bench retired to deliberate, and upon returning into court, the Chairman said they considered the case a serious one, and to mark their sense of it they would fine the defendant £5 for driving at a greater speed than was reasonable, and £5 for not stopping when requested.

AT the Spilsby Petty Sessions, Charles Holland, motor-car proprietor, Boston, and Robert C. Holland, his son, were charged with furiously driving a motor-car to the danger of the public at Carrington, on the 1st inst. Mr. C. Nelson defended, Mr. Wm. H. Ward, J.P., landowner, Carrington, said that at 8 p.m. on the day in question he was driving from Boston, and upon approaching his home in Carrington he met two motor-cars coming in the direction from Revesby. In his opinion they were driving furiously and were greatly in excess of the speed limit. He had some trouble with his horse, and the driver of the car assisted him. In defence, Mr. Nelson said the charge was for furious riding, and to the serious danger of the public. There was no evidence to prove that defendants were travelling to the danger of the public at all. After hearing the evidence of several witnesses the Bench retired, and upon their return, the Chairman said there had been a great deal of conflicting evidence, all of which had been carefully weighed, and they had found the weight against the defendants, therefore they convicted. Each defendant would be fined 50s., with £2 13s. 9d. costs, making a total of £10 7s. 6d.

AT Downham, John Roethlin, of Cockley Cley, motor-car driver to Earl Wilton, was summoned by Sergeant Starke for driving at a greater speed than twelve miles an hour at Stoke Ferry on the 25th ult., and was fined £2 and 32s. 6d. costs.

AT Birkenhead, Theophilus Fritson, a German, was summoned for driving a motor-car furiously on Saturday, the 8th, on the Chester road. The police evidence was that the defendant was going at the rate of 28½ miles an hour round a corner at Eastham. Several police officers had been stationed with stop watches on the road, and, having measured certain lengths and timed the car passing, they claimed to be able to give the exact speed at which it was driven. Mr. Steinforth defended, and said defendant asserted that he was not driving the car at anything like that speed, and, in fact, some of the driving gear was out of order, and it took him 2½ hours to get from Birkenhead to Eastham. A fine of 40s. and costs was imposed, the magistrates declaring that they were not moved by the particular rate of speed, but by the belief that defendant had driven round the corner at a speed dangerous to the public.

AT Chertsey, Claude Lorraine Barrow, of London, was summoned for driving a motor-car at a rate of over twelve miles an hour, at Weybridge, on June 9th. P.C. Bettison said that the defendant was going at the rate of eighteen miles an hour. He told witness that he had recently come from France, where they were allowed to go at what pace they liked. The defendant, through his solicitor, urged that he was quite ignorant of the law, having only been in England a short time. The pace at which he travelled was sixteen miles an hour.—Fined 30s.

AT Steyning, Samuel Aldin Smith and Robert Crawshaw were summoned for driving motor-cars at an improper speed. A letter was received from the solicitor for Crawshaw stating that his client had to answer a like summons at Haywards Heath on that day, and the Magistrates therefore agreed to adjourn the case for a week. In respect to Smith, a letter stated that he was touring in the South of England, and asked for a three weeks' adjournment. It further stated that the summons would be sent on to him. Superintendent Hooker said the summons had been served on him personally by the Metropolitan police. The case was adjourned for a month, the Magistrates ordering Smith to pay the day's costs.

AT Woburn, R. S. Sievier, of Toddington, was charged with being the person in charge of a motor-car on the highway at Hockliffe, on May 15th, driving the same at a greater speed than twelve miles an hour. Also at the same time and place, with driving the said motor-car at a speed greater than was reasonable and proper, having regard to the traffic on such highway. Mr. W. W. Marks, of the County Council, appeared to prosecute, and defendant was represented by Mr. Austin, of Luton. P.C. Underwood, of Hockliffe, stated that he was standing opposite the Leighton Road, when he saw the car coming from the direction of Dunstable at a furious pace, forty miles an hour he should say. Cross-examined: He knew Mr. Sievier, but could not say who was the man who was driving. The car was going too fast for him to time it. There were four persons in the car, and no other vehicle on the road at the time. Wm. Grieg, of Luton, said the car went so fast that he could not recognise the occupants. Other witnesses having been called, Mr. Austin, after apologising to the Bench for his client's non-appearance, urged that it was

singular that only one of the witnesses had sworn that it was Mr. Sievier at all. He submitted that the wrong man had been summoned. His client was only in the car and was not driving it. The man whose hand was on the lever was the responsible person, and it was the driver who should have been summoned. The statements of the witnesses as to speed he described as gross exaggerations. Mr. Marks, referring to summoning the wrong man, said he had never heard such a preposterous argument as that urged by his friend. In the same way as a licensee was held responsible for the acts of his barman, so was Mr. Sievier liable for the act of the driver. Mr. Sievier was the true defendant, and was in charge of, and driving by the hand of, his paid servant. As to the twelve mile regulation, it was in force up to now. The Bench convicted, and imposed a fine of £5, with £3 14s. 6d. costs. The second charge was withdrawn.

At Consett Petty Sessions, William Dunn, of Newcastle, was summoned for driving a motor-car at a furious rate. Inspector F. Best, of Consett, deposed that on the evening of the 6th inst. he was on duty at Ebchester, when he saw the defendant, who was on a motor-car along with two other gentlemen and a lady, travelling from Shotley Bridge towards Newcastle. He passed through the village at a speed of fully twenty miles an hour. Defendant never blew his horn or attempted to apply the brake on descending the hill. There were three little girls about to cross the road at the time, and witness had to stop them. The car raised such a cloud of dust that the officer, who had his bicycle, could not follow the defendant. Defendant: How do you judge that I was going at twenty miles an hour? Inspector Best: To my mind you went through the village like an express train. P.C. Johnson, in his evidence, was inclined to agree with the inspector that the car was travelling more than twenty miles an hour. Defendant stated that the only way of gauging the speed was by means of a stop watch. He had travelled between 15,000 and 20,000 miles on his car, and employed a young man who had driven a car through Fleet Street and the Strand, London. The reason he was going so fast was that there was an officer on the car who wanted to get to the Tyne to board his vessel. The Magistrates told the defendant that he ought to regulate his car to the places he was travelling through. He should not pass through any village, to the danger of the lives of pedestrians, even at the rate of twelve miles an hour. The case would be dismissed on payment of the costs, and the defendant contributing one guinea to the poor box.

At Haywards Heath, Robert T. Crawshaw, of London and Brighton, was summoned for driving a motor-car at a greater speed than twelve miles an hour, and also for refusing to stop the same when called upon to do so by the person in charge of a certain animal. Mr. J. Norris stated that he was driving with Mrs. Norris on the London road at Bolney, on June 7th, about 4.45 p.m., when by the Bolney cross-roads he saw a motor-car coming down the hill. There were two men in the car, which was travelling at twenty miles an hour. Witness held up his whip to stop the motor, and shouted to the man in the car. The mule swerved from one side to the other, then turned sharp round, and the motor ran into the mule. The motor went off into the ditch, and ran along it some twenty yards. The motor broke the wheel, shafts, and the whole of the front part of the pony cart. Mrs. Norris having corroborated the evidence of her husband, and other witnesses having been called, Mr. Staplee Firth called Harry Lee, of London, motor machinist, who said he was driving a motor with defendant on the London road. It was geared to about ten miles an hour, and that was the speed they were going down Bolney hill. Both brakes were on. He saw the mule about a hundred yards off, when it was on its own side, and he saw a clergyman on the road. Mr. Norris did not put up his hand or whip. They slowed down to eight miles on passing the mule. When a few yards off, the mule turned his head to the ditch, and backed the front wheels right across the road. Defendant tried to dodge the mule, and steered into the ditch. But for the cautious handling of the car by defendant a serious accident would have happened, as they would have struck the middle of the cart. Mr. Firth, addressing the Bench, contended that no expert evidence had been given as to the speed, except by his own witness, who put the speed at ten or ten and a-half miles an hour. Had defendant driven into the ditch at the speed alleged, the motor must have gone over, and possibly killed defendant. He contended that the accident had been introduced into the case with the view of assisting a subsequent claim for damages, and someone had interfered in the case with dramatic effect, who had no right to interrupt him. The Magistrates retired, and, on coming into court again, the chairman said they were of opinion that both cases had been proved, and defendant would be fined 40s. in each case and costs, £1 4s.

REINHARDT v. THE SPEEDWELL MOTOR-CAR COMPANY.

At the Berks Assizes last week the action Reinhardt v. The Speedwell Motor-Car Company was heard before Mr. Justice Day. Plaintiff, Dr. Charles Reinhardt, a medical gentleman residing at Willow-side, Goring, has a sanatorium for consumption under the new open-air treatment, at Hales, about 400 ft. above Goring, on the Oxfordshire hills. The action was brought for breach of express warranty. The defendants (Messrs. Dew) carry on the business of motor-car and cycle vendors, in Broad Street, Reading. The warranty alleged was that the motor-car, for

which Dr. Reinhardt gave a new £70 Beeston quadricycle and a cheque for £30, was a good hill climber. On the case having been opened, Mr. Amphlett said the motor-car was outside the court, and could be tested in any way. Plaintiff said he purchased a Beeston quadricycle, which he eventually exchanged for a motor-car, which was supplied to him by Messrs. Dew, and which was warranted to him as an excellent hill climber. He relied on the statement made to him by one of the Messrs. Dew, and purchased the car accordingly. It failed to act as represented, and consequently he invited Mr. Dew to journey with him on the following Monday—the car was purchased on the Saturday—and he did so. They reached the foot of Caversham Hill all right. Then the car refused to budge, and he and Mr. Dew got out and pushed it up the hill. The plaintiff gave further evidence, all of which tended to show that the car would not mount the slightest incline without being pushed. After certain negotiations with Messrs. Dew they offered to sell the car for him, but plaintiff failed to get his money refunded. He then offered to take £75 out in bicycles, and to lose the £30 which he had paid to the defendants. This was refused. He did not receive a written warranty. Several witnesses were called, each of whom spoke to the fact that they saw the car, and that it would not go. Mr. Amphlett, for the defence, said his client's case was that a machine of the class in question was not designed for the purpose of going up hills such as Caversham Hill. The machine, if driven properly, would go perfectly well, but the plaintiff was not able to drive it properly. The defendants never gave a warranty that it would go up Caversham Hill. Dr. Truman and Mr. Alfred John Dew were the principal witnesses for the defence, and each denied that when the conversation took place at the defendants' shop as to the purchase of the machine anything was said about its being capable of climbing Caversham Hill. Mr. Dew declared that the plaintiff said he wanted the car for a good level road. Other evidence was given, and in the result his Lordship gave judgment for the amount claimed—£100—and costs.

AUTOMOBILE CLUB HILL-CLIMBING TRIAL.

The Committee of the Automobile Club ask us to announce that on Saturday, 6th July, there will be held, under the direction of the Club, a Hill-Climbing Trial, open to all comers, whether they be members of the Club or not. No entrance fee will be charged, it being the desire of the Automobile Club Committee that on this occasion there should be nothing to stand in the way of any owner ascertaining, under official auspices, the hill-climbing capacity of his car. Competitors who are not yet registered under the Competition Rules of the A.C.G.B.I. will be required to fill in a form of registration either before or at the start, but no fee will be charged. The competition will be held at Dashwood Hill, four miles beyond High Wycombe, 33rd milestone from the Marble Arch.

It is requested that vehicles will drive carefully and at moderate speed on the route to and from Dashwood Hill, and will travel slowly in passing through Southall, Hillingdon, Uxbridge, Beaconsfield, and High Wycombe. Members of the Club are invited to meet at the Club at 2 o'clock. The competition will start at 5 p.m. Any vehicle the driver of which has not reported himself to the Club steward at the Dashwood Arms Inn, at the foot of the Hill, and there obtained his number by 5.30 p.m., will be disqualified. Each vehicle will be required to ascend and descend three times. Vehicles must carry their full complement of passengers, weighing on an average not less than 10½ st. each.

The following particulars must be in the hands of the Club Secretary at 4, Whitehall Court, London, S.W., not later than twelve noon on the day of the competition. (a) Name and address of owner. (b) Name and address of driver. (c) Number of seats for passengers, including driver. (d) Name of manufacturer of car. (e) Name of manufacturer of engine. (f) Fuel. (g) Reputed brake horse-power of engine. (h) Number of cylinders. (j) Price (viz.: the price at present asked by the manufacturer for the car with body, etc.)

The Trial Rules Committee will probably announce the results by means of marks, in the calculation of which speed, price, and number of passengers will be the principal factors.

NO LIGHT.

At Richmond (Surrey), Walter MacCormack, of Regent's Park, was summoned for driving a motor-car and failing to have visible the necessary red light required by the law to be visible after sunset. Station-sergeant Shepherd stated that at 10 p.m. on the 4th inst. he saw the defendant driving a motor-car at Castlenau, Barnes. Witness shouted to him, but defendant refused to stop, and he was ultimately overtaken at the "Red Lion," Barnes, where he had pulled up. There were two lamps in front with red glass at the back of them, but as they were in front of the splash-board the light could not be seen from behind. The Chairman said that the penalty for the offence was £10, but as the defendant had a lamp, although it was not in the right place, he would have to pay a fine of £2 and costs.

AMONGST the names of the new members of the French Automobile Club elected at the last meeting we notice that of Mr. Harvey du Cros.

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COMMENTS.



KING EDWARD is taking to the motor-car as a means of rapid conveyance in a way which must have a considerable influence on the adoption of the automobile in society circles. On Friday of last week he ran down to Hampton Court *en automobile*, while on Tuesday he journeyed from London to Windsor and back on his new 12 h.p. Daimler car. His Majesty was attended by Major-General Sir Arthur Ellis and Captain Holford. He left Marlborough House at eleven o'clock in the morning, and reached Windsor at a quarter to one. A crowd witnessed the departure, and great interest was taken in His Majesty's vehicle. In spite of the heavy rain, a crowd waited on Thames Street Hill, Windsor, from eleven o'clock till nearly one. They were doomed to disappointment, for shortly before one o'clock the statement was made that his Majesty had arrived safely at the Castle, and that he had entered the royal grounds by a private way. The return journey was also accomplished in wet weather. His Majesty was expected at Marlborough House at about half-past five o'clock, and at that hour a small crowd had gathered opposite the principal entrance. It was, however, five minutes past seven o'clock when the car arrived. It ran swiftly through Marlborough Gate, gracefully swept round the corner, and entered the grounds almost unnoticed.

Motor-Cars in Parliament.

In the House of Commons a few nights ago, Mr. Chaplin asked the President of the Local Government Board whether his attention had been called to the rapid and recent development of motor-car traffic in the United Kingdom, the increased and increasing power of these vehicles, the speed at which many of them were habitually driven, and the serious accidents which had recently occurred, and whether the Government would reconsider the Act of Parliament controlling them as well as the advisability of requiring some test or certificate of efficiency from persons desiring to drive motor-cars before they are permitted to do so. Mr. Long replied that he was carefully considering all the representations made to him on the subject, but that, so far as he could learn, the drivers are usually skilful, but he regretted to say that the pace very often considerably exceeds that allowed by law. Therefore, the alterations suggested would hardly seem to meet the case. Now, what are these dangers we hear so much vague talk about? Mr. Chaplin probably had in his mind the unfortunate Chiswick fatality, which would have occurred just as surely had Mr. Scarisbrick been driving a horse, but under such circumstances no one would have heard anything about it. It seems to us that the danger to the public, which the law should stop, is the depositing of passengers from buses and trams in the centre of crowded thoroughfares.

Another Question in the House.

THE question of the speed of motor-cars again cropped up in the House on Tuesday, when Mr. Muntz asked if the First Commissioner of Works was aware that motor-cars were being run at a speed of forty miles an hour across the entrances by which equestrians enter the public parks. The reply to the question was that the pace of motor-cars is regulated by the general law and by the Parks Regulations Act, the Metropolitan Police being responsible for law and order in Hyde Park, and having the same powers to control traffic in the Park as outside.

From Nursery to Covent Garden Market.

THE trial at Liverpool of motor-cars suitable for heavy haulage is quickly bearing fruit (literally) to Covent Garden. Mr. H. Seal, of the Albany Nurseries, Enfield Highway, who, at the termination of the Liverpool trials, purchased of Messrs. Milnes the lorry which gained for them first prize and gold medal, has had the distinction of being the first to adopt motor transit of produce from his nursery to Covent Garden. On inquiring as to the success of the experiment, Mr. Seal informs us he is more than satisfied; his motor-lorry conveys two and a-half tons of tomatoes sixteen miles twice daily at a cost for fuel of 1s. 6d. each journey, performing with ease the work for which six horses would have to be kept, half the time only being occupied in transit. The publication of his experience will doubtless cause many to follow his example—already a second Milnes' motor-lorry has arrived at Covent Garden with produce from a Kent nursery.

Educating the Press.

IN spite of the Cockerton Judgment free education is booming as far as the motor-car is concerned. County Councilors and Municipal Engineers have been put through their paces, and now the Press has been afforded an opportunity of learning a few of the characteristics of the much misunderstood motor-car. A hundred members of this vast and influential body were, on Thursday last week, the guests of the Motor Manufacturing Company. After inspecting the works at Coventry they were conveyed by motor-cars to Northampton, the intervening thirty-four miles being covered in a little over two hours without accident to passenger or other wayfarer. A short adjournment was there made at the Peacock Hotel, after which the party departed for town by special train, favourably impressed and ready to start upon the Herculean task of leavening that mass of ignorance that clogs the wheels of the motor-car.

The Association of Municipal and County Engineers.

IN the course of his presidential address, at the Conference of the Association of Municipal and County Engineers, at Leicester, last week, Mr. E. G. Mawbey, M.Inst.C.E., remarked that there is a great future for the motor-car for light work and swift and convenient transit, and this will gradually

THE GENERAL AUTOMOBILE AGENCY, D. Farman, Man., Garage open day and night, all cars in stock, 100-104, Long Acre, W.C.

effect a great sanitary improvement and considerably diminish the wear and tear of our roads and streets. In his opinion, however, the motor-car is not likely to supersede electric traction for public service. Referring to heavy traction, Mr. Mawbey remarked that with heavy steam road locomotives the hauling of loads of from fifteen to thirty tons can be done at an extremely low cost per ton mile; but the new Locomotives on Highways Act, 1896, has produced a smaller and handier means of doing the work of several horses at an inclusive cost of less than 4d. per ton per mile. These light locomotives are not likely to increase the cost of upkeep of the roads, for with horse-haulage the deteriorating action of the hoofs must be taken into consideration. The present use of horseflesh for heavy loads, especially on steep gradients, is hardly worthy of science.

An M.P. on Motor-Cars.

"WHAT the stage coach did for inns and villages in the old days the motor-car is going to do for inns and villages in our time; the problem of 'back to the land' will find a solution in the use of the automobile. More traffic along the shady country roads to lovely rustic places; more opportunities of employment for young villagers—a call for inn-servants, cooks, stablemen, machinists; more local demand for meat and vegetables and fruit and milk and butter; more interest and excitement in village life, the throb of town activity in the hamlets: these are the changes which will follow in the wake of the magic motor-car." Such is the common-sense view of the new order of things set forth in an able and interesting article from the pen of Mr. J. H. Yoxall, M.P., which appeared in the *Daily Mail* the other day.

On the Bath Road.

ATTIRED as ordinary, commonplace, friendly cyclists a number of name-taking police are said to be frequenting the Bath road to waylay motorists. We hear that this procedure has been adopted at the instigation of some local J.P.s, and that the name of Mr. Arthur Balfour is among those jotted down in the policeman's note book. Surely, however, this is hardly sufficient. Why do the police stop at that? Why not incite the motorists to speed races and then arrest them? They would be a little more certain of obtaining victims, and the method would be only a little more un-English.

Road Improvement Association.

At the last Council meeting of the Roads Improvement Association, it was resolved, on the motion of the Hon. J. Scott-Montagu, M.P., to move certain amendments to the Light Railway Bill now before the House of Commons, with a view to more adequately protecting the interests of the general body of road users. The report of the Royal Commission on Local Taxation was considered, and the following resolution unanimously adopted:—"That the Council of the Roads Improvement Association cordially approves of the recommendations of the Royal Commission on Local Taxation, that one-half of the cost of main roads in England and Wales shall be borne by the State, provided that the Imperial grant shall be made dependent on compliance with conditions designed to secure efficiency, and trusts that His Majesty's Government will give effect to the recommendation at an early date."

A County Councillor's Trip.

THE Hereford County Council has decided to support the suggestions of the Berkshire Council with regard to the numbering of motor-cars—a decision which has called forth some strong protests. Mr. J. F. Symonds, of Hereford, a County Councillor, and was present at the Automobile Club's demonstration, being a passenger with Colonel Kerrison, of East Suffolk, on Mr. H. Edmunds' car. His account of the trip is interesting. "Choosing," he writes, "Buckingham Palace and the Park, away we went, passing the Horse Guards, to Westminster,

Bird Cage Walk, the Palace and Green Park, thence over Battersea Bridge, through the beautiful park, Wandsworth, Wimbledon Common, and at such a pace, slowing down at every 'bus or cab or carriage and pair that obtruded on our path, alarming neither horse nor man, save two. There was no smell, no discomforting vibration, no noise, and the ease with which we dodged in and out the close heavy traffic through Wandsworth and most crowded districts, and every clear space of 100 yards or so in front, dashing along at thirty miles an hour—on the open commons probably still faster—was a marvel to me, and has made a lasting impression."

On His Majesty's Service.

MR. FRANK MORRISS, of the Motor Works, Lynn, has had a glorious opportunity of defying law and order, as understood by the twelve-mile limit, with impunity. At 5.30 p.m. one day last week, he received an urgent message from the Commanding Officer of Coastguards asking for a car to be sent out to Middleton at once to land him at a certain Lincolnshire Coastguard station (seventy miles distant from Lynn) before sunset, on urgent and pressing official business. Mr. Morris left his depot just before 6.0 p.m., took the Commander aboard at Middleton and landed him at his out-of-the-way and distant station about 9.30 p.m. Needless to say that in this case, Mr. Morris, being on His Majesty's service, did not keep within the limit. On the following day Mr. Morris conveyed Admiral Noel on official business to some remote stations on the Lincolnshire coast. The Admiral expressed the greatest satisfaction and surprise at the speed of the car and the absolute and easy manner in which Mr. Morris controlled it.

Moustaches for Motor Men.

THE importance of the motor-car industry in France may be gauged by the fact that professional drivers have already formed a union and are on the verge of their first strike. A certain large company which hires out cars has ordered the instant shaving-off of all moustaches worn by its drivers. Amongst the employees indignation is at boiling point. The council of the union has called a meeting of protest, its members have sworn to stand firm, and the national Press is being urged to throw its weight on the side of liberty. *Vivent les moustaches!* is the war cry of the oppressed.

More Municipal Motor Dust-carts.

WELLINGBOROUGH is keeping pace with the times. So far, the house refuse has been collected from the streets by a contractor, but at a meeting of the Urban Council held last week it was decided to replace the carts with a motor-car. The Urban District Council of Acton have also arrived at a similar decision and are inviting tenders, until the 9th inst., for the supply of a motor dust-van.

Another Conspiracy Exposed.

As will be seen from the special report in another column, the indefatigable Mr. Staplee Firth has again been successful in obtaining a practical condemnation of the use of underhand methods by the police authorities, this time from the Portsmouth Bench. The adoption of such means of obtaining convictions has recently shown signs of assuming the dimensions of an organised crusade, and the more such salutary checks to what he euphemistically described as "over-zeal" can be inflicted, the better for the interests of justice and automobilism. To set a detective with instructions to catch "scorchers" has evidently all the effect of what a psychologist would call "suggestion" (unless he were hopelessly frivolous he would not add "auto suggestion") and renders the personal equation in police evidence unusually difficult to correct. How long will it be, we wonder, before our legislators will realise that "the longest way round"

is by no means always "the shortest way home," and that a simple provision against driving to the common danger, applied impartially to all classes of traffic, even including butchers' carts, electric trams, and untrained horses, might well take the place of selective legislation and split-second chronographs served out to the police?

Chefs and Chauffeurs.

A NEW sphere of utility for the automobile appears in its proposed employment for the house-to-house distribution of luncheons, dinners, etc. The pioneer company which started this scheme with older methods of locomotion finding the demand sufficient to warrant its extension, proposes to adopt specially-arranged motor-vans, with non-conducting compartments for preserving the dishes, ices, etc., at their due extremes of temperature for a couple of hours. Of course the catering for a town area is all that has been in practice or in contemplation, but the new departure should make similar enterprises feasible in country districts, where the additional acuteness of the domestic question would be all in favour of the success of such a scheme, which even seems to hint at the motor-propelled housemaid and automobile shoeblick. If the culinary and motor experts employed are of equal ability there is an evident future before it, and expectant diners will attach a new importance to the "pip-pip" of the horn when it heralds the approach of the "chef-chauffeur's" car.

A Scarborough View.

SCORES of leading articles on the recent motor-car race have appeared in English papers, and one of the most sensible appeared in the *Scarborough Post*, which said:—"We need not be sorry that the Continent is allowing experiments of this character. The motor-car has come to stay, though the vehicle of the year 1921 will probably be as different from that which we see on the road to-day as is the pneumatic-tired bicycle, with which we are familiar, from the bone-shaker of our boyhood days. But it is only through experiments and failures that we shall reach perfection, and even those of us who have no desire to see racing of the Continental character recognise the necessity for allowing reasonable latitude to the autocar in its experimental stage. We shall be surprised if, before this year is out, there are not seen in Scarborough and district cars of a character which will demonstrate the progress which the science of motoring is making."

How an American Advertises.

We have received from America particulars of a scheme—novel, to say the least of it—for advertising motor-cars. Our ingenious American correspondent proposes to organise a party of motorists to make the tour of the fairs for a racing competition. He purposes getting a dozen different makers to enter a vehicle and driver, he himself bearing the whole of the expenses on tour. On the morning of the day of a race, the motorists will parade through the streets to attract attention. In the meantime the great motor-car race for 5,000 dollar purses will have been advertised by the fair people, who are to bear all expenses, and in addition to give the manager one hundred dollars for himself. But there the novelty ends, for the so-called 5,000 dollar purses will contain valueless paper.

A Warning.

WHILE anxious to see the fullest and freest possible development of motoring in this country, we have never disguised our regret that there are a few motorists as frail as other members of the public. The Automobile Club, too, has deprecated the action of those who have gone beyond reasonable rates of speed, and thus brought odium upon all concerned with the progress of the motor-car. We hear that owing to the conduct of a driver of a motor-car passing over the Duke of Portland's

estate recently his Grace has instructed his agent not to allow automobiles on any of the private drives at Welbeck nor in his part of Sherwood Forest. The Duke has hitherto been tolerant and sympathetic in his attitude towards automobilists. He did much to add to the interest of the last few days of the 1,000-mile Trial, and has given facilities for motorists to see the beautiful country in his possession. But, just as there are black sheep in every flock, so there are an insignificant minority of motorists to whom manners are unknown. In common with all automobilists we deplore the step which the Duke has taken; and we have nothing but blame to heap upon the heads of those who cannot recognise the obedience to rules and regulations which all good sportsmen maintain.



A WEDDING PARTY AT SOHAM, CAMBRIDGE.

Limiting the Weight of Racers.

THE Sporting Committee of the French Automobile Club has fixed the weight of future racing vehicles at 1,000 kilog. (2,200 lbs.). The new rule will come into force on the 1st January, 1902, but will not be obligatory on the part of other race organising bodies until the beginning of 1903. Already the Pau Automobile Club has adopted the new rule with regard to its meeting in February next, and the Automobile Club de Nice has done the same with regard to next year's Nice week.

Liquid Air and Motor-Cars.

LIQUID air, which of late has been strongly urged as a source of power for motor-cars, probably has much less of promise than its promoters believe, or at least assert. It stores comparatively little energy, is enormously costly, especially as a competitor in energy-storage with fluids of little or no cost, requires very large quantities per horse-power delivered, and no known way exists for its storage for any considerable or satisfactory period without immense waste. According to Linde, perhaps its most successful, experienced, and reliable producer, it requires a 100 h.p. at the compressor to produce as many pounds per hour, and it can develop but a fraction, probably a small fraction, of that amount of power in regasifying. It loses by simple vaporisation, even in large vessels, ten gallons and upwards, about four per cent., under the most favourable conditions for its preservation, each hour. Its efficiency in the motor is found to be about four per cent.; that of the steam engine is from seven to twenty and more, and that of the gas and oil engine ranges to still higher figures. In the perfect heat engine the quantity of air required to do the same work within the same range of temperature of operation is about sixteen times as much as of steam; while steam costs nothing as a crude material, and liquid

air costs no one knows precisely what—probably not less than three or four times, perhaps ten or fifteen times, as much as the fuel used with the steam engine or the gas and oil engine. The wild claims of the promoter of the stock company, now in the market for speculative purposes, are probably based on but little better reason than those of Keely or of other mountebanks, often self-deluded, who are continually cropping up.

Romance of a Motor-Car.

A WELL-TO-DO gentleman of a certain age recently purchased a Locomobile, and, needless to say, became an enthusiast. Suddenly his friends were thrown into a state of consternation on hearing that he was about to dispose of the car at a sacrifice, and return to the land of his birth. But the consternation of his friends is nothing to that of his relatives now that the secret of the sudden change of front has leaked out. The whilom motorist, who was regarded as a confirmed bachelor, met his fate whilst motoring in England's leafy lanes, and a lovely bride will accompany him to his home in America. Now, ye village maidens, forgotten of the country youth since he has packed his bag and gone to town to make his fortune, take heart. Soft hearts, and deep pockets too, accompany those dusty knights who whirl past your window.

The Paris-Berlin Race.

THE fatal accident at Reims and the other incidents arising out of the Paris-Berlin race have provoked a great outcry in the Continental Press against the holding of any other exhibition of this sort. In the French Chamber M. Gauthier asked the Minister of the Interior what measures he intended to take to prevent the accidents caused by motor-car races. M. Waldeck-Rousseau replied that he would not have authorised the race if it had only been a question of sport and pleasure, and he had, in fact, only authorised it under very severe conditions. Henceforward no race at a speed higher than that usual for road traffic would be authorised.

Motor-Cars and Railways.

OF the immense advantages to be derived by the introduction of the self-moving carriage, for pleasure or business no one has the slightest doubt. It is remarks Prof. R. H. Thurston in the course of a recent paper, socially and commercially a boon. The social and commercial side of the automobile as a method of transportation is one of real importance, and promises to develop into one of enormous value. While it is true that the railways of a country are its main arteries and its principal veins, it is none the less true that the highways and common roads are its mighty and vital systems of blood-distributing capillaries. Countries exist without railways, but none without highways. The automobile traversing the highways may yet, it is probable, prove some time to be more important in the conveyance of merchandise and passengers than even the railway, importance being gauged by the number of ton-miles of merchandise carried, or by the number of passenger-miles. It is not unlikely that a few years more, a generation at most, may see practically all of our business done, and much of our pleasure-riding carried on, with motor-vehicles in all sections of the country, and on all highways. In fact, for all short-distance lines of transportation, on the scale of a day's travel by highway, for example, there is no doubt that the railway is at an enormous disadvantage, on account of the proportion borne by its terminal costs and charges to the costs and charges of transportation proper. The automobile is the natural and probably inevitable auxiliary of the existing system of railway transportation, and the desired and desirable connecting link between the great arteries and veins, and the capillary system of national inter-communication and transportation.

AN Automobile Exhibition is to be held in Frankfort-am-Main, Germany, from the 3rd August to the 4th September.

THE PARIS-BERLIN AUTOMOBILE RACE.

BY AUTOMAN.

AS the writer of this article, in order to see the arrival at Aix-la-Chapelle, was obliged to leave Paris on the night before the start, he thinks he cannot do better than recount the particulars given him by Mr. Jarrott whilst sitting at breakfast in the Kaiserhof at Berlin last Monday morning.

It was a very fine, clear morning, inclined to be cold, and as the first car was to go off at 3.30 a.m., it was yet quite dark when the competitors turned out. The road to Champigny lies through the Bois de Vincennes, and all along it thousands and thousands of cyclists with their coloured Chinese lanterns lit up the route, which was crowded with every kind of conveyance, from the enormous 50 h.p. motor-car down to the bicycle. Streams of pedestrians coming from every quarter of Paris added to the exodus. Edge and Jarrott were the first arrivals at the starting post, which was occupied by a large force of police, who kept half of the road absolutely free to allow the cars to line up. At three o'clock the dawn began to break, and already nearly all the competitors seemed to be there.

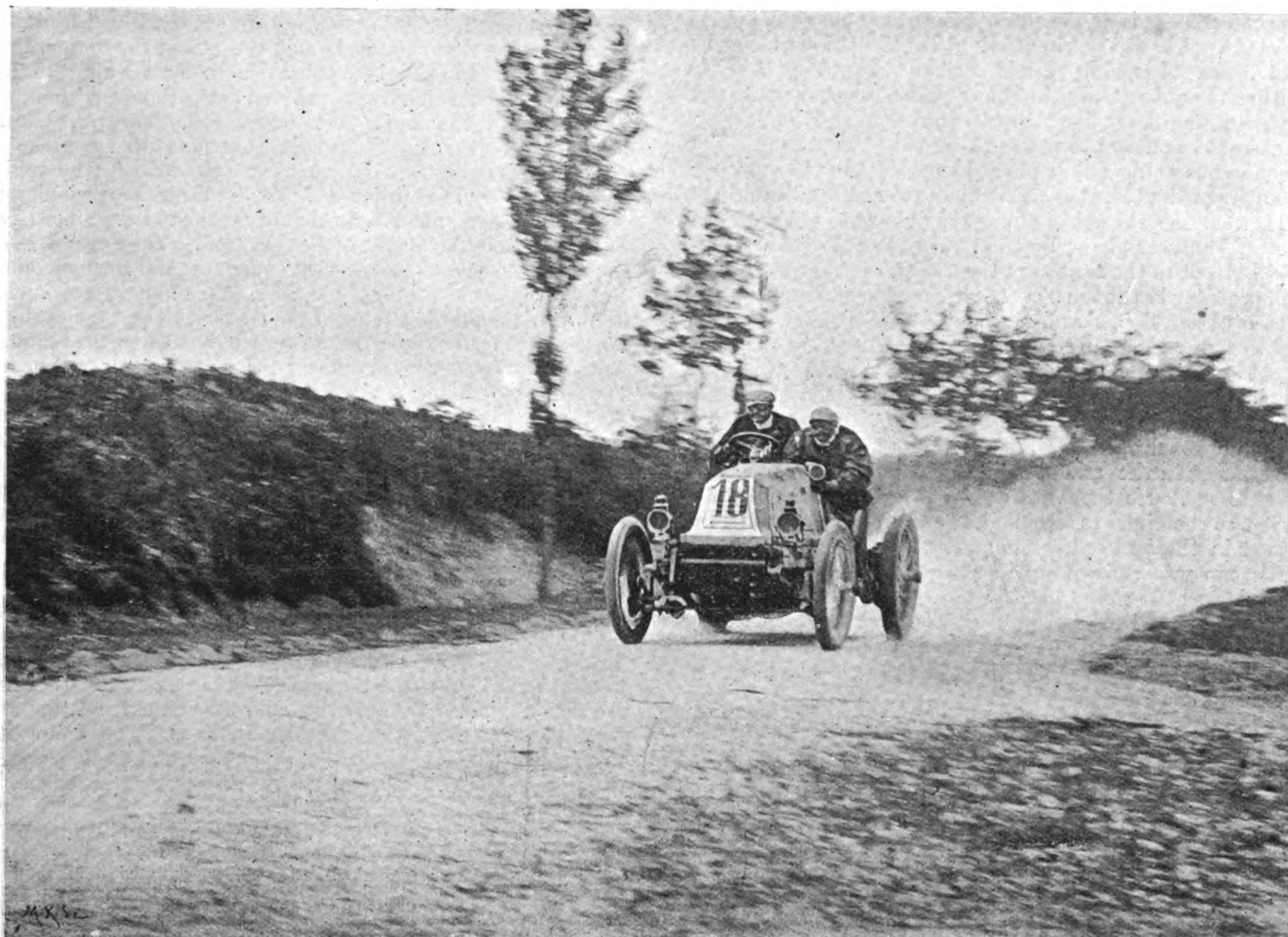
Every few minutes a flash of magnesium light told of someone being photographed. A jolly-looking chap came along with a magnum of champagne and two glasses asking the starters to drink his health for luck. Edge's car, "le monstre," or, as M. de Knyff put it, "the monstrous," in his funny English, excited much comment. The trees along the road had big numbers attached, and the cars took their position according to these numbers, and each time one started the line moved up to the starting post. The arrangements were excellent, and there was not the least hitch.

Mr. Huet was the starter, and at 3.30 prompt, just at daybreak, in clear light, without fog or mist, Giraud puffed off along the straight, clear road, between the crowds of cheering spectators. Then every two minutes the others followed. Charron's turn came fourth—he had a regular jockey outfit, riding breeches, gaiters and cap with flaps. Maurice Farman broke the guard on his fly-wheel and had to tear it off, and just managed to get away in time. Serpollet and Clément had small breakdowns close to the start, but got off again. Altogether 110 cars actually started on their dash for Berlin, all racing for dear life, regardless of fatigue, dust, and danger. Meanwhile all Paris had been alive to the event, and from every quarter right across to the Porte Maillot, from midnight on, competitors and spectators were active. All along the boulevards crowds of the curious were watching for the big cars to go by on their way to the start—a ten-mile run in the dark. It was a really international event, and though no one said so, it was patent to all, an industrial *rapprochement*—the first for thirty years.

After seeing the last car numbered at the A.C.F., I took the 9.25 train to Aix-la-Chapelle; never shall I forget the scene in the Gare du Nord. A half-hour before the time *mecaniciens* came trooping to the station with bundles of tires, inner tubes, batteries, tool boxes, spare parts, and so forth. Then came newspaper correspondents with their wives and friends, then enthusiastic spectators who wished to follow the race. I must not forget the wives, sisters, cousins, and aunts of the *chauffeurs*. The train had to be doubled, and left loaded in an indescribable confusion, amongst which it came to my lot to haul up into the train as it was moving out of the station M. Léon Serpollet's pretty young wife, pushed in from behind by a mutual friend, M. Oliver. Half of the people had not taken the precaution of reserving beds, so that many of them had to pass the night in the corridors or in the restaurant car. I had in my cabin M. Rousseau, of the *Velo*, and M. Lafitte, of the *Vie au Grand Air*. We arrived at Aix-la-Chapelle about 7 a.m., and, after a wash and breakfast, I set off to find a cab, and drove out to the control, some two miles. All along the

Adalbertsteinweg I found the windows already occupied, the pavement lined, and crowds streaming towards the control, flags flying everywhere. At the control a triumphal arch had been erected, as also a grand stand close to which a band of musicians were ready to receive and welcome the invasion. And all of this at ten o'clock in the morning, hours before the cars could possibly arrive. Police and military were, of course, there to keep order, and a very irascible superior officer on a big horse vainly charged and recharged the people, who came crowding on again time after time. I had calculated that the first car would appear between eleven and twelve, as telegrams began arriving from the line of route. At Reims, for some reason or other, we did not hear of Fournier, but de Knyff passed at 6.34, Girardot at 6.42, M. Farman 6.42, Leys 6.45, Pinson

minutes later M. René de Knyff came tearing down on us, hatless and as white as a miller with dust, and waving frantically for the crowd to get back. The sun was now beating down on us with tropical intensity, and I met Madame Serpollet in distress—a ticket for the grand stand had been left at the hotel for her and some objectionable person had passed herself off for Madame Serpollet and secured the ticket; however, with press facilities, I soon arranged the little difficulty, and duly installed her in the front row on the look-out for her husband. There she was destined to wait until 5.29, for the Serpollet car had had bad luck from the start. A few hundred metres from Champigny something went wrong with the pump which caused a considerable delay, and when at last M. Serpollet arrived and saw his wife, he shouted "I have spent



THE WINNER OF THE PARIS-BORDEAUX AND PARIS-BERLIN RACES—FOURNIER ON HIS MORS RACER.

Cliche de]

L'Avenir de l'Automobile.

6.53, Voigt 6.58, Axt 7.01, Jarrott 7.13; Périgord, 7.14; Chauchard, 7.21; Lemaître, 7.35; Rolls, 7.46; Cormier, 7.42; Heath, 7.47. Edge was signalled at Epernay at 7.22 with a punctured tire. At Sedan Fournier arrived at 7.55; Girardot, with a burst radiator, at 8.18; Farman, 8.28; de Knyff, 8.30. From St. Neith, Fournier, Knyff, Hourgières, and M. Farman were signalled in a bunch, followed by Girardot and Charron. Then we heard that Fournier had passed Montjoy, and every eye was directed down the road till at last the puff of dust and little black speck appeared, and down he tore on us amidst roars of cheering and triumphal chords by the band. I was on the road in front of Fournier trying to take a snapshot of him, but in an instant he was surrounded by a dense crowd, and it was with the greatest difficulty that he could get down to sign the sheet. Just twelve

the day in mending tires and getting my car into fit condition to start."

But I am digressing, and getting ahead of my story. It would be useless for me to give the account of all the arrivals, so I will give just a brief list, with their times, and confine myself to special incidents. Maurice Farman arrived at 12.49 and Jarrott at 1.18. I asked him for news of Rolls and Edge, but he could only tell me that he had passed Edge mending a puncture somewhere between Epernay and Reims. At 1.38 Rolls turned up, and I went down to shake hands with him, and tell him where to come and sign, but he seemed half-dazed, and it was with the greatest difficulty that I could make him understand. Giraud, on his light Panhard, arrived at 1.45 and attracted much attention, and then at one minute past three I went to greet Harry Farman and ask him for news of Edge.

Shortly afterwards a telegram was brought to me by one of the officials to see if I could make it out. It was from Edge to Jarrott, and I give it exactly as it was—"Tive punctures nails recovered from these all well these lit hump on bridge broken back cring trying to jet repaired adwire club officies and other interinoit." After struggling with it for some time I made it out to be as follows, which turned out to be about correct:—Five punctures nails recovered from these all well then hit hump on bridge broken back spring trying to get repaired advise club officers and others interested."

In addition to the five punctures and little hump on the bridge poor Edge had had an interview with a tree at Viellemaison in which he and the Napier car had a very narrow escape. I am sorry that my criticism of the Napier was only too true, and it is a pity that, instead of going in for this monster, Napier did not spend his skill in lightening the 16-h.p. car, as he originally proposed. This is, however, another digression, and I must get on with my yarn, leaving Edge at Sedan, for he was not heard of again. Louis Renault signed at 3.17, in his voiturette, only taking an hour and a quarter more for the day's run than Fournier. Brasier signed on at 3.56, looking very miserable, and said to me as he passed, "You don't know what a horrible thing has happened to me." It was only too true, as I learned after, that he had run over and killed a little boy. He told me the story himself across the table at the banquet at Hanover given by the Continental Tire Company, and I will give it to the readers of the *Journal* in his own words, as it will probably be the cause of the suppression of road racing:—"I was between Reims and Epernay," said Brasier, "going as hard as I could lick, probably 62 miles an hour on the open road. I had in front of me a tricycle and a voiturette. The crowd closed in behind the tricycle. I have a whistle and three horns on my car, and I and my *mecanicien* set them all going. The crowd opened to let me pass and left a little boy of ten standing in the middle watching the tricycle and with his back to me. He then heard my horn and turned round, I swerved to the right to avoid him, and at the same instant he rushed in the same direction and struck the front of the car. His cap was thrown up into the air, and I pulled up. The crowds rushed around me and assured me I was in no way to blame. I wanted to give up the race, and remained three-quarters of an hour, but they persuaded me to continue."

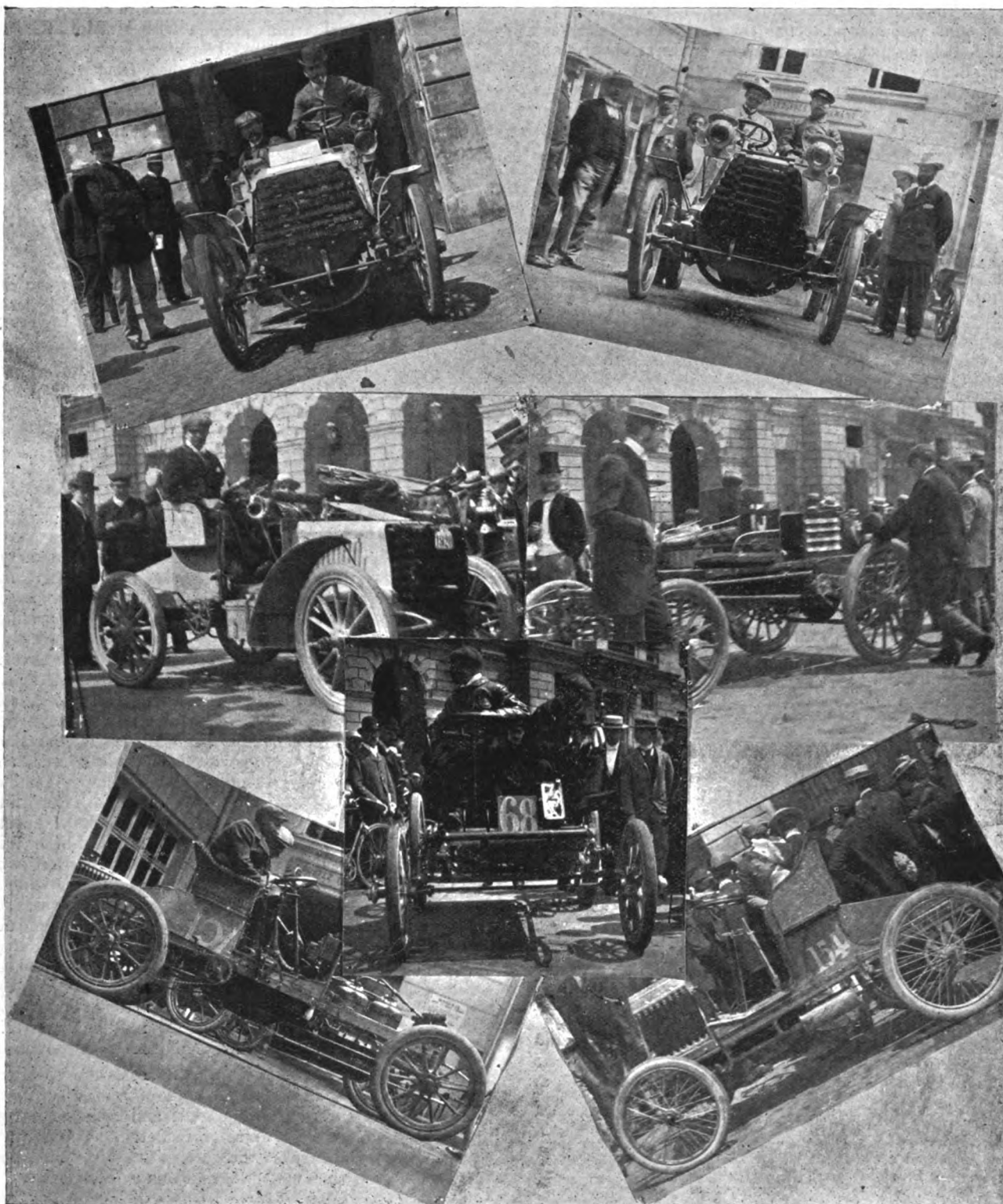
But to go back to my story. Out of 109 cars which started from Paris, 82 reached Aix-la-Chapelle. Gilles Hougieres had his steering gear twisted by a collision with a dog, and Foxhall Keene ran off the road into a field, but both of them managed to put things right and get on again. About the control, of course, there were all day many familiar faces—Mors, Darracq, Michelin, Panhard, anxiously awaiting their cars and calculating the times. I chatted with Paul Meyan, of the *Figaro*, busy writing his notes, sitting on the four poster in the little bedroom on the first floor, looking on to the triumphal arch; Rousseau, of the *Velo*; George Prades, of the *Auto-Velo*; Lafitte and his photographer taking snapshots under great difficulties amongst the seething crowd; Raphael, of the *Daily Mail*, with his long curly locks, with a keen eye for any scrap of news floating about. The latter disappeared mysteriously after Rolls had arrived, the reason for which appeared at full length in his paper the following morning. Loysel, on his Panhard, in taking a corner at full speed near Viellemaison, went full tilt into a wall and smashed his machine badly; both he and his *mecanicien* had a wonderful escape, and came off without the least scratch. Madame du Gast, the only lady driver, turned up at 7.9 amidst cheers, and was handed a bouquet. I must not forget either the Mercedes cars, the first of which turned up at 1.57. Of course, there was the greatest excitement amongst the German population, and the band struck up the national anthem. Some enthusiastic old gentleman climbed up and kissed Lemaitre, or rather kissed the dust that covered his black moustache in thick layers. It was exceedingly funny. The Count de Perigord, who arrived at 1.8, looked

like a ghost, and was evidently ill, for he did not leave again the following morning, and abandoned the race. The whole army of the camp followers met again at the station in the train to Hanover that evening—such a dusty, tired-looking crowd. More than half of them had not secured places in the sleeping car, and at Cologne, where we changed, there was another scene of pandemonium, which ended in a large number of ladies and gentlemen passing the night in the restaurant car. So ended the first day of the great race, which thinned down the competitors from 109 to 82.

It was a little after five o'clock on Friday, the 28th ult., when the cars left Aix-la-Chapelle for Hanover—the second stage of the race. Altogether about eighty carriages resumed the journey, the automobilists being in high spirits. Before starting they had to give the authorities substantial guarantees that their cars would return to France. The vehicles started in the same order in which they arrived at Aix-la-Chapelle. A large crowd witnessed the departure. Owing to a fog which prevailed several racers were disabled, and the Count de Perigord, who arrived fourth from Paris, was unable to start owing to indisposition. Fournier, who arrived at Hanover first, led practically all the way. At Oberkassel, however, Girardot got in front. In Fournier's eagerness to overtake his rival the cars collided, but no harm was done to the vehicles, though a boy was injured. At Hanover the winning-post was fixed five miles outside of that town. The Duke of Ratibor and the Mayor of Hanover and a large crowd were in waiting. Telegrams had arrived every now and then announcing that Fournier was leading, and at 2.13 p.m. he arrived in clouds of dust and amid the strains of the "*Marseillaise*," doing the 270 miles in 9h. 7min. 39sec. René de Knyff came next at 2.50, and Anthony arrived two minutes later, making better time than Fournier by 25min. Girardot arrived at 2.54, followed by Maurice Farman at 3.26. Rolls arrived late. He passed Cologne at seven in the morning, but experienced trouble before reaching Dusseldorf. Jarrott arrived at 4.56 p.m.; Giraud came in at 3.26, leading the light cars; Louis Renault was still leading among the voiturettes, and Osmont was first among the motor-cycles.

As early as seven o'clock on Saturday morning a large crowd had assembled at the Trotting Course, Berlin, to welcome the racers. Fournier was the first to reach the winning post. He arrived at 11.46 a.m., and was received with tremendous cheering by a huge crowd. Girardot was second, arriving at 12.8 p.m., Brasier third at 12.26, R. de Knyff fourth at 12.28, Charron fifth at 12.35, and M. Farman sixth at 12.40. M. Farman collided six miles from Berlin with an unknown Berlin motor-car, and his mechanic was slightly injured. The victor made the round of the course at a rapid pace, and as he passed the winning post, which was decorated with French tricolours and flags in the German colours, a military band struck up the "*Marseillaise*." The crowd broke through the line of soldiers and surrounded the car excitedly. Cheers rent the air, and a hundred hands were stretched out to the winner. As soon as the car was brought to a standstill a little farther on the crowd raised him on their shoulders and bore him to the judge's stand, whence he was conducted by Count von Schoenborn-Wiesentheid into the prize pavilion. Girardot, who came in second, was likewise enthusiastically received. Of the other competitors, Osmont, who rode a motor-tricycle, and whose experiences must have been incomparably more trying than those of his rivals, arrived at twenty-two minutes past one. After the last of the racing cars had arrived a procession was formed, in which the competitors in the race, the tourists, and many members of the Automobile Club took part. The long line of motor-cars then proceeded through Charlottenburg, the Thiergarten, and Unter den Linden to the motor-car exhibition near the barracks of the Alexander Guards Regiment. In the evening the competitors in the race and the tourists were entertained at a banquet at the Kaiserhof Hotel. The Duke of Ratibor, President of the German Sporting Club, the Union, presided, and there were also present the Prussian Minister of the Interior, Baron von Hammerstein, the Minister of Commerce, Herr Möller, the Minister of Communications, Herr von Thielen,

THE PARIS-BERLIN RACE: SOME OF THE COMPETING CARS.



M. DESCHAMPS ON DESCHAMPS CAR.

BARON J. DE CRAWHEZ ON "PIPE" CAR.

M. ROLAND ON GOBRON CAR

M. PESCHARD ON PIEPER CAR,

COMTE DE CHASSELLOUP-LOUBAT

M. DERNIER ON GOBRON CAR

M. MORIN ON CORRE CAR

and the Minister of Education, Herr Studt. The general company numbered about 500, of whom nearly half were French guests. Baron van Zuylen, President of the French Automobile Club, proposed the toast of "The German Emperor," and in a brief speech recognised the interest which His Majesty, as the donor of the first prize, had shown in the race. The Duke of Ratibor proposed the toast of "President Loubet," and General Becker proposed "The Sovereigns who had protected the Paris-Berlin Race," the King of the Belgians, the Grand Dukes of Luxembourg and Mecklenburg-Schwerin, and also the Dowager Grand Duchess Anastasia of Mecklenburg, the high protectress of the German Automobile Club.

The following is the rough general classification, in the order of the time occupied on the journey after the necessary allowances have been made for the "neutralised" towns:—

CLASS I.—CARS.		Time.		
Competitor.	Car.	h.	m.	s.
1. Fournier	Mors	17	3	43
2. Girardot	Panhard	18	9	58
3. René De Knyff	"	18	12	57
4. Brazier	Mors	18	46	6
5. H. Farman	Panhard	19	24	21
6. Charron	"	19	57	48
7. André Axt	"	20	2	52
8. P. Chauchard	"	20	31	55
9. Heath	"	20	35	4
10. Jarrott	"	20	35	21
11. Gille Hourgères	Mors	20	41	7
12. Voigt	Panhard	21	43	6
13. G. Leys	"	22	21	5
14. Van der Heyden	"	22	53	31
15. Werner	Mercedes	23	0	49
16. A. Lemaitre	Darracq	23	11	16
17. Clement	Panhard	23	25	13
18. Rolis	Mors	24	49	7
19. Mme. du Gast	Panhard	27	3	11
20. Brillié	Soc. Nancéene	30	13	40
21. J. de Crahwes	Pipe	30	32	19

CLASS 2.—LIGHT CARS.				
1. E. Giraud	Panhard	20	54	52
2. Sincholle	Darracq	23	32	53
3. Teste	Panhard	23	33	45
4. Berteaux	"	23	38	33
5. Edmond	Darracq	24	8	39
6. Kraeutler	Peugeot	26	6	58
7. A. Roland	Gobron	26	14	59
8. Gondoin	Panhard	26	42	43
9. Mercy	Gladiator	27	5	11
10. Dernier	Gobron	28	39	45
11. Hajan	Nesselsdorf	31	48	41

CLASS 3.—VOITURETTES.				
1. L. Renault	Renault	20	33	50
2. Grus	"	24	2	15
3. Oury	"	27	45	15
4. L. Morin	Corre	30	52	1

CLASS 4.—MOTOR-CYCLES.				
1. Osmont	De Dion	20	18	48
2. Bardeau	"	22	5	58
3. Cormier	"	23	29	57
4. Bardin	"	23	39	4

The actual results are as yet absolutely uncertain, as only a very small proportion of the control times have so far been calculated. The arrangements in France were excellent, but in Germany deplorable, and the task of getting all the figures into line is a very heavy one. The probable winners are as follows:—

CLASS 1.—HEAVY CARS.				
Fournier-Mors	"	First		
Girardot-Panhard	"	Second		
R. de Knyff or Brasier }	"	Third		
Panhard-Mors	"			

CLASS 2.—LIGHT CARS.				
Giraud-Panhard	"	First		
{ Sincholle-Darracq }	"	Second and Third		
{ Teste-Panhard }	"			
{ Berteaux-Panhard }	"			

CLASS 3.—VOITURETTES.				
L. Renault-Renault	"	First		
Grus-Renault	"	Second		
Oury-Renault	"	Third		

CLASS 4.—MOTOR-CYCLES.

Osmont-De Dion tricycle...	...	First
Bardeau-De Dion tricycle	...	Second
Cormier-De Dion tricycle	...	Third

Out of fifty-one starters in the Tourist section, forty-one, or about 80 per cent., reached Berlin. In the racing section 110 cars started from Paris, but the arrivals in Berlin only numbered forty-nine. I had a conversation with M. Mors the other night at Hanover. He told me that Fournier's car weighed 27 cwt. 1 qr. 25 lbs., and gives 61 brake horse power exactly. I have also had several chats with Fournier. He meant to win, and knew all his machine could do. He tells me that he had four punctures the first day, three the second, and four the third—eleven altogether.

ROUND ABOUT SNOWDON.

EVERY day during the season a motor-car is leaving Llandudno and proceeding via Conway, Penmaenmawr, Bangor, and Carnarvon to Llanberis. Arriving there the passengers are invited to proceed up Snowdon by the mountain railway, returning back to Llandudno through the Pass of Llanberis, Capel Curig, and Bettws-y-coed, a total distance of seventy-five miles, the trip occupying about eleven hours. The whole excursion, including the drive, the ascent of Snowdon, and a lunch at Llanberis, costs a guinea. For the box seats an extra shilling is charged, while tickets can be taken for the drive only for 13s. 6d. If four or more tickets are taken at the same time by the same party a reduction of 1s. on each ticket is allowed.

This splendid motor-car demonstration—a daily run of seventy-five miles—has been organised by Messrs. A. Deacon and Son, of Llandudno, whose enterprise merits success; and success, we have no doubt, will be attained. The ground covered by this regular service is delightful, and some notes by one who has recently enjoyed the prospect will be of interest. From Llandudno, writes our correspondent, we went off in fine style. The first serious hill climbing was Towyn Hill, which was surmounted with ease, and as we ascended there was opened up a grand mountain range, with Conway Castle and the bridges adding to the beauty on view. Then, on we went across the bridge at Conway, and through Penmaenmawr, Llanfairfechan, Aber, and Bangor, the latter being the most difficult of the quartette to negotiate owing to the narrow streets. The road then went near the Menai Straits, and four miles from Bangor was the slate district of Port Dinorwic, from whence we went right on to Carnarvon, where we stopped for a light lunch and a glance at the Castle. On board again and we were soon away from the county town and gradually reaching Snowdon. The views of the mountains from the village of "Pong Rug" were particularly fine. Snowdon was enveloped in a cloud, but Moel Elilio, Elidyr, and Glyder were discernible. At Cwm-y-glo Snowdon should be easily seen, but the clouds hung heavily, and the promise of a fine view from the summit was remote. Along Llyn Padarn (this is a lake) for two miles and we were in Llanberis.

After a lunch—motoring does accelerate and extend the appetite—and the ascent and descent of Snowdon, we prepared to return. Boarding the motor-car and speeding away to the shores of Llyn Oeris, we went on to Bettws-y-coed, the road to which is all downhill; then, following the prescribed route, arrived in good time and fine condition at Llandudno.

In addition to the regular trip to Snowdon, Messrs. Deacon and Son are catering for those wishful of going shorter trips by motor-car. Twice a day short runs are made round Craigdyon; on Tuesdays and Fridays the waterfalls of Aber are visited; on Thursdays a car runs to Llanrwst and Trefriw, and every day a car goes to Colwyn Bay, returning through the Vale of Moelre. Altogether the experiment is being conducted with enterprise and spirit, and should do much to popularise the automobile among pleasure-seekers.

AFTER THE GREAT RACE.

ENGLISHMEN are accustomed to take most things in a matter-of-course way. They can become excited once or twice in a generation over some great feat of arms or display of valour; but it is hard to sustain their interest in anything beyond the income-tax and a few other irritants. In sporting affairs they have a normal interest which rarely rises above an ordinary cheering point, and universal attention is restricted to the Derby, Henley, the race for the America Cup, with the University boat-race in a declining fourth place. Suddenly, and with a rapidity characteristic of the motor-car, automobilism has claimed the morning conversation in the train—and that is the hall mark of British enthusiasm. We are not much enamoured of short speed contests, and the mile-a-minute man is regarded as a mere butterfly; the British people prefer endurance and staying powers, and when—as in the Paris to Berlin motor-car race—these are combined, they naturally get beyond the ordinary degree of excitement. This was shown during the progress of the race by the columns of incidents with which English newspaper readers were regaled, and by the prominence given the event on the placards. The race was followed with keen interest, and it was satisfactory to observe that the few accidents that occurred were generally rightly attributed to the stupidity of the victims, and not the criminality of the automobilist. For that changed attitude the demonstrations of the Automobile Club and the insistence with which the technical Press has protested against misrepresentation must be thanked.

Automobilism is a many-sided subject. Mr. Balfour hails it as the distributor of our people from crowded cities; the small farmer recognises the help it will render in the early marketing of his produce; the Society man and woman glory in the way it is adding to the possibilities of friendly intercourse between acquaintances in country districts; and the professional man delights in the saving of time with which its use is accompanied. These are four tangible proofs of the value of the motor-car. Another has now to be added, viz.—the opportunity the automobile has provided the people of Germany to fraternise with those of France and for both lands to recover some of that earlier cordiality towards each other which the memories of the war have lately prevented. The motor-car race from Paris to Berlin will make easier the task of German and French diplomatists in maintaining respectful relations between the two countries.

But it is not of the political value of the automobile that we propose to write. That is but an incident in the story of the race, the main features of which are recorded elsewhere in the present issue. There are other aspects from which England can learn much and profit greatly. All the way from one capital to the other, the local authorities did their best to enable the motorists to demonstrate to the world the power and sustained speed of the motor-car. Within certain towns a comparatively slow rate of progression was enforced—and in one of those towns the most conspicuous accident occurred—and elsewhere the inhabitants were warned by proclamation not to stand in the path of the cars as they raced through. Such a sensible injunction was almost universally respected. A few silly boys dared fate in dodging across the roadway as the cars approached; and they paid the penalty. But, sad as those accidents were, we would insist that they should be attributed to the folly of lads and not the wantonness of the automobilists.

Everyone seems to have recognised the importance of the event, and the Emperor of Germany's thoughtful action in constructing a bridge across the River Moselle at Treves for the special use of the competitors in the great automobile race was universally appreciated. As the contest was fostered by thorough sportsmen and encouraged by the Kaiser and by the President of the French Republic, the local authorities naturally did their best to ensure success. The way of the motorists was between two avenues of faces, the owners of which cheered the speedy and sympathised with those whose mechanism went awry. It was a demonstration of open-minded regard for a new industry that will add to

the pleasures of men and ease the burdens of horses. It was a tribute to the staying power of the individual as well as of the machine, and it was everywhere regarded as giving the seal of international sanction to the motor-vehicle that will assure manufacturers and inventors throughout the world of the lucrative vein that is within their reach.

While gladly acknowledging the importance of the event we do not necessarily advocate that our main roads should be occasionally made the scene of such popular contests. Our English nature is too conservative to appreciate the rapidity of motion of some of these fast machines, and our roads, with their frequent turns and windings, are not suitable for such competitions. But we would draw a contrast between the way in which the local bodies of the Continent regard automobilism and the harassing attitude of some of the lesser authorities in this country. How would, to mention one typical instance, the East Berkshire County Council appreciate a request that they should give facilities for a short motor-car race through their area? Probably, they would seek powers to consign the applicant to the county gaol, or apply to a J.P. for his temporary detention elsewhere. Almost every journal of distinction acknowledges the engineering advances of other nations and deplors the lethargy of our own people. Here is a department of industry in which makers want encouragement, instead of which they are worried by the constant agitations of pettifogging Councillors who cannot comprehend why anyone should want to have a vehicle drawn by any other means than that by which Boadicea was drawn into battle, or—to go back still further—by any other animal than that owned by Balaam.

We hope, therefore, that the way in which the Paris to Berlin race was assisted by the local authorities, and the enthusiasm which universally prevailed, will cause our local magnates to reconsider their attitude. The educational process has been energetically carried on in various ways. There was the 1,000-mile Trial; there has been the series of demonstrations before County Councillors; the publication of a penny weekly journal wholly devoted to the subject has played its part; and now the great contest in which 110 cars travelled over 700 miles without any serious breakdowns or delays proves their increasing reliability. More than that, the ease with which M. Fournier stopped his car within two feet of the goal testified to the absolute control which a driver—after three days' severe tension—can exercise over an automobile. Altogether motorists are well pleased with the recent race, and we trust its effect will be of permanent value to the industry. The interest was not confined to the Continent; our own daily papers found space for its announcement on their placards, and gave columns to its progress. On one point they are agreed—viz., that the automobile will do much to improve the state of our public highways. On the Continent this is frankly acknowledged, and everywhere the development of automobilism and the improvement of roads is progressing simultaneously. The ratepayers do not grumble, for they foresee a revival of the prosperity of the old coaching days along many main thoroughfares. Hotels are being refurnished, and new life is being given to many a country town by the motorists who tour through France and Germany. Such a revival is possible in this country, and local authorities can hasten its advent by maintaining good roads and showing common sense in their proposals with regard to motor-car regulations. These are points brought out by long-distance contests abroad, and they cannot be too often emphasised in less friendly circles at home.

A 5 H.P. Decauville car is to accompany Mr. Baldwin's Polar expedition. Though it is doubtful whether the state of the ice will admit of its being used, it is highly probable that the motor-car will nevertheless establish a record of furthest north.

At a meeting of the Competitions Committee of the Automobile Club, held on Monday last, it was held that pedalling in motor-cycle races, either on the path or the road, after the start of a race could not be permitted in events advertised to be held under A.C.G.B.I. rules.

FLOTSAM AND JETSAM.

BY "FLANEUR."

FELICITATIONS to the *Standard* for having evolved one of the most screaming "howlers" that has ever seen the light of day! In a long description of the finish of the now historic race from Paris to Berlin, the Berlin correspondent of that journal recounts his interview with the victorious Fournier, who is represented as ejaculating that, with the exception of punctures, he had come through "without a spanner."

Without a spanner! Is it not wonderful? In the amazing lucubrations to which the daily papers have treated us during the progress of the race, and after, sometimes it has been the correspondent who was at sea, sometimes the telegraph clerk, sometimes the sub-editor who "dressed" the message, and sometimes the leader writer who aired his comments on the obviously unfamiliar topic. In the case in point there is no difficulty in determining the genesis of this execrating joke. The correspondent was right; the sub-editor was hopelessly gravelled. What the former wrote was undoubtedly *sans panne*—"without a breakdown." The sapient sub-editor apparently followed a cryptographic train of reasoning—save the mark! He tacked the final letter of *sans* to the beginning of *panne*, and produced *spanne*. If he knew no French, the reflections of the melancholy Jaques on the seven ages of man would still remind him that *sans* meant "without," and forthwith he incontinently assumed that *spanne* meant "spanner." *Ergo*, with the added assumption that the telegraphists had dropped one letter, he arrived at the brilliant interpretation—*sans spanne*, "without a spanner." Clearly the talents of this young man—or was it an elderly fossil?—are wasted in the sub-editorial room; he should be unravelling the mysteries of the Baconian theory. "Something new and strange" might confidently be awaited.

BUT the *Standard* man, to do him justice, is not alone. The *Daily Telegraph* described the Hon. C. S. Rolls as having been delayed by an *exhausted valve*! However was this feat accomplished? "Exhaust valves" we know; they are on every petrol-driven car, quadricycle, tricycle, and bicycle, but "exhausted" valves must be the exclusive patent of Peterborough Court. Certainly no automobilist ever saw or heard of one before. So much for sub-editorial errors. As for those of the correspondents, their name is legion, and one simply cannot afford the time or space to discuss them in detail. In every line almost of the various telegrams it was palpably manifest that the journalist responsible for the report had kept his eyes closed against the automobile movement, and was ignorant of its most rudimentary data. Even in so small a matter as dress the *Daily News* referred to "rubber" garments, and the *Daily Express* and other journals to "oilskins." Everyone who has even a nodding acquaintance with the subject knows that the garments in question were made of leather, and to speak of "oilskins" is the very first sign of a novice at the game.

It is impossible to let pass without mention, however, one or two of the editorial articles which appeared on Monday. The *Daily Telegraph* had a characteristic leader, a very model of the art of word-spinning without a correct basis of facts. It bristled with misstatements, and, relatively unimportant as some of these were, they were typical of the slipshod manner in which the subject was approached. Even the *Daily Telegraph* arithmetic was wrong. Antony was referred to as having "covered some of the ground at an average pace of over eighty kilometres, or nearly sixty miles an hour." As a matter of fact, eighty kilometres equal fifty miles. "Upon particularly good stretches of road a number of the crack competitors," said the *Daily Telegraph*, "must have made the highest speeds of the most famous express trains." They did even better. The express scores by reason of its exclusive track; the racing automobile can go faster, but must vary its pace more often. Fournier worked his machine at a mean speed of more than sixty miles an hour when he won in the race to Bordeaux."

This, again, is inaccurate; his average was fifty-three. Further on, the races are referred to as "Juggernaut performances." What evidence is there to justify this wholesale condemnation? All the French races have been singularly free from accident, and the Paris-Berlin has but shown, what everyone knew already, that the high road is not a children's playground. Another erratic statement is that "On the whole, recent accidents have shown that they" (automobilists) "probably inflict as much damage upon themselves as upon the lieges." What are the "recent accidents" referred to? They are so few in number that they cannot reasonably be accepted as a basis for generalisations of any kind.

As usual, the *Daily News* is unconsciously funny. It may be remembered that when Mr. Balfour suggested the use of motor-cars as a means of relieving the congestion of town life, the *Daily News* attempted to be satirical at his expense, and, in the fulness of its ignorance on automobile matters, insinuated that motor-cars were useless for this or any other purpose. The extraordinary times and distances accomplished in the Paris-Berlin race appear, however, to have somewhat stimulated the perceptions of this sceptical journal, and it has now delivered itself of this extraordinarily complacent effusion:—"Mr. Balfour's famous motor-car theory for relieving London overcrowding has been rejected by most experts, but in the sparsely populated agricultural districts the new method of locomotion, by virtue of its exceeding adaptability and small initial cost, should prove a boon which the farmers and their landlords would be foolish to ignore."

REALLY, this is colossal in its ineptitude. Because fast racing-cars have bridged Berlin and Paris at the speed of an express train, the *Daily News* recognises as the sole field for the automobile that it should be used for carrying goods for agriculturists. What admirable condescension! One may nevertheless inform the *Daily News* that experts did not condemn the scheme of Mr. Balfour, and remind that journal further that it has "put its foot in it" more conspicuously than ever. Motor-cars of the type of those used in the Paris-Berlin race, in either section, have no kinship with the class that will eventually relieve the grower of fruit. The latter, which are mostly steam-driven, are known as "heavy goods wagons," and are subject to peculiar regulations, one of which is that their speed shall not exceed five miles an hour! One fails to see what M. Fournier's splendid performance on a petrol car has to do with vehicles of this description.

AN automobilist may reasonably contend that inasmuch as his vehicle is the most completely under control of any it should be the last in the world to be subjected to restrictions of an exclusive kind. Consequently wherever a new regulation is issued against the motor-car the fact is of interest, if a melancholy one. It is with considerable regret that I learn that automobiles are to be literally banished from the most picturesque portions of Switzerland, an embargo that altogether defies explanation or excuse. The prohibited areas comprise:—All the Alpine passes, with the exception of the St. Gotthard; the roads of the lateral villages of Valais; and, worst of all, the roads of the Canton Grisons. This absolutely prevents one from visiting the glorious Engadine *en automobile*, or from climbing such picturesque passes as the Grimsel, the Furka, the Albula, the Julior, the Flüela, and many others I might name, and which I have crossed with no small amount of satisfaction. Anyone who knows Switzerland will realise how completely this extraordinary ukase will shut out the most attractive centres from the automobilist's scope, and nothing could well be more deplorable to the lover of grand scenery.

THE contributor of "Electric Automobile Notes" to *Lightning* makes the confession that he does not read the *Motor-Car Journal*, and then proceeds to quote from our columns. If the statement is true, our young friend is not so well informed as he might be. Fancy the writer of a motor column in a class newspaper not reading the motor-car papers!

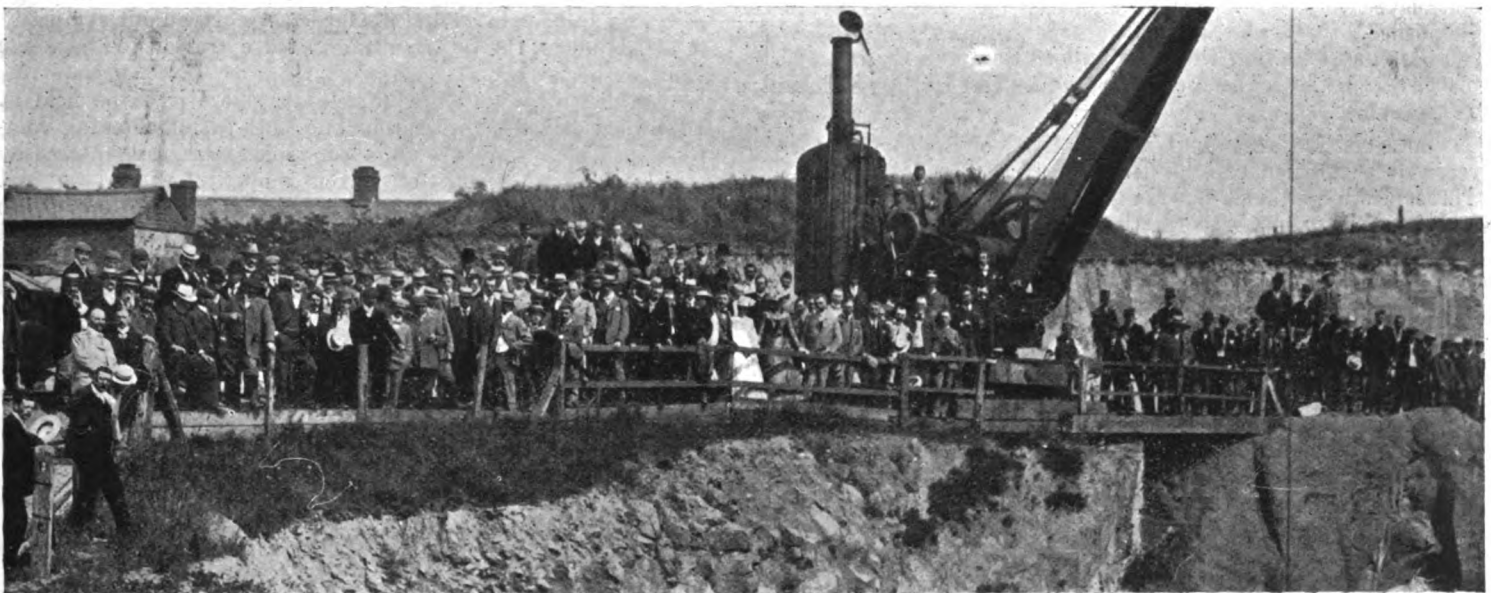
THE DEMONSTRATION TO MUNICIPAL AND COUNTY ENGINEERS AT LEICESTER.

IN accordance with arrangements made by the Secretary of the Automobile Club, several cars duly left London on Friday last week for Leicester to assist at the annual meeting of the Incorporated Association of Municipal Engineers. Mr. Johnson was on his Darracq, Mr. Gorham on his De Dion,

a.m. there were over forty assembled outside the Town Hall. The vehicles were for the purpose of conveying nearly 200 of the municipal engineers on a visit to the sewage farm, and the Enderby, Narboro' and Croft quarries. The cars first of all went in procession through the town, and we should imagine took in every back street, and in that peregrination filed through coal, goods, and other yards. The first and a very long stop was at the sewage farm, where the processes were carefully explained. Luncheon, after the party had witnessed the processes of blasting, was partaken of in a large tent, where over 300 sat down to a



THE CARS AT THE TOWN HALL, LEICESTER.



Photos by)

THE VISIT TO THE ENDERBY HILL QUARRIES.

[Seville and Co., Leicester.

Mr. Midgeley and party on a Gladiator, and Mr. Cordingley on his "M.C.C." Panhard. The day was a beautiful one, and the journey was much appreciated, Leicester being reached without incident. On Friday night a number of gentlemen of the Nottingham Automobile Club were assembled and a meeting was called by Mr. E. G. Mawbey, the President, at the Grand Hotel at ten o'clock, when arrangements for the morrow were discussed.

Shortly after eight o'clock on the Saturday morning cars began arriving from Nottingham and Coventry, and before nine

most sumptuous and well-served repast. Some more "firing" on a most extensive scale was seen after luncheon. The party then made their way to Croft, where the extensive quarries were visited, and tea partaken of, and the party duly reached Leicester about seven o'clock. The day was a magnificent one, and the forty odd cars in succession caused such clouds of dust as surely were never seen on roads before. The whole of the arrangements of the day were in the capable hands of Mr. Johnson and Mr. Atkey, the popular secretary of the Nottingham branch of the Automobile Club. The following is a list of the cars present :

THE GENERAL AUTOMOBILE AGENCY, D. Farman, Man., Carage open day and night, all cars in stock, 100-104, Long Acre, W.C.

Mr. G. H. Kirk, 12 h.p. Peugeot (with the president, Mr. E. G. Mawbey, and the Chief Constable of Leicester, Mr. T. W. Lumley, on board); Mr. A. F. Bird, 12 h.p. Panhard; Mr. Gorham, 4½ h.p. De Dion; Mr. C. Cordingley, 6 h.p. M.M.C. Panhard; a M.M.C. 5 h.p. voiturette; Mr. F. G. Smith, New Orleans voiturette; a M.M.C. 6 h.p. Granville wagonette; Mr. W. D. Wells, 6½ h.p. Daimler; Mr. H. Belcher, 4½ h.p. Humber; Mr. Budge, 4½ h.p. Humber; Mrs. Kennard, 9 h.p. Napier; Mr. Urquhart, 7 h.p. Daimler; Mr. F. G. Rendle, 6 h.p. Daimler; Mr. E. M. Iliffe, Ariel quad.; Lieut.-Col. A. F. Mulliner, 7 h.p. Daimler; three Universal Motor Co.'s 6 h.p. M.M.C. wagonettes; Daimler Motor Co.'s 12 h.p. Daimler; Mr. S. B. Hodgkin, 6 h.p. Daimler; M.M.C. 6 h.p. dog cart; M.M.C. 6 h.p. tonneau; M.M.Co.'s 7 h.p. Wynton wagonette; M.M.Co.'s 10 h.p. Marlboro' phaeton; M.M.Co.'s 6 h.p. Lynton wagonette; M.M.Co.'s 6 h.p. phaeton; M.M.Co.'s 12 h.p. wagonette; Daimler Motor Co.'s 6 h.p. car; Mr. M. Ross Browne, 4½ h.p. De Dion Voiturette; Mr. H. Rimington, 6 h.p. Daimler; Parr and Co.'s 5 h.p. voiturette; Mr. G. Cowen, 6 h.p. Daimler; Mr. E. Estcourt, 6 h.p. Daimler; Mr. S. Harvey, 3½ h.p. Renault; Mr. J. A. Holder, 5 h.p. Serpollet; Mr. F. E. Burton, 4½ h.p. De Dion voiturette; Mr. A. E. Crowdy, 6 h.p. Darracq; Mr. Foster Pedley, 24 h.p. Daimler; Mr. R. Cripps, 3½ h.p. Progress voiturette; Mr. R. R. Latham, 3½ h.p. Benz; and Mr. C. Johnson (with Mr. A. R. Atkey) 6 h.p. Darracq.

HERE AND THERE.

THE Automobile Club Bourguignon will hold a hill-climbing competition up the Val Suzon Hill, near Dijon, on Sunday next, the 7th inst.

EIGHTEEN Daimler public-service cars belonging to the Elinburgh Autocar Company, Limited, are to be put up for sale by auction on the 10th inst.

THE Queen, accompanied by Miss Knollys, and attended by Sir Dighton Probyn, again visited St. Edmund's, Hunstanton, on Thursday last week, journeying from Sandringham by motor-car.

THE day following the King rode to Hampton Court on his motor-car on the occasion of the grand concert in the great hall of the Palace.

MESSRS. BENNETT AND WOOD, LTD., of Sydney, recently received a shipment of the latest pattern motor-quadracycles. Three of the machines have been delivered to country districts, and, from the owners' reports, they have given every satisfaction.

HODSON AND COMPANY, LTD., was registered on June 13, with a capital of £2,000, to acquire and to carry on the business now carried on at Liverpool as Hodson and Co., and to carry on the business of cycle manufacturers, builders of motor-cars, and carriages of all kinds, etc.

THE members of the Scottish Automobile Club engaged in a very enjoyable run to Stirling on Saturday last. The Edinburgh contingent was joined at the village of St. Ninians by the western members, and the party, to the number of forty, lunched in the Railway Hotel, under the presidency of Mr. Norman D. Macdonald.

NEW sizes of the Salisbury-Bleriot lamp are being introduced by Messrs. Salisbury and Son. The new sizes are for use upon motor tricycles and quadracycles, also for light voiturettes and small cars, and have been introduced owing to the great success of the larger lamps and a wide demand for a lamp of equal power but suitable for small cars.

MR. DOHERTY, who was for three years foreman copper and tin smith to the Motor Manufacturing Company, has opened works of his own at Day's Lane, Coventry. It is his intention to bring his knowledge to bear upon water-tanks, petrol-tanks, silencers, lamp boxes, battery boxes, carburettors and all kinds of sheet work appertaining to motor-cars. Bearing metalling, and aluminium panels and wings to order will also be specialties of the new concern, which will trade under the style of the Doherty Motor Accessories Company.

THE Automobile Club of Ireland held a run from Dublin to Drogheda and back on Saturday last.

MR. T. W. HAMMOND, of 9, Lower Addiscombe Road, Croydon, stores both Pratt's motor spirit and Carless Capel's petrol, oils, greases, etc., which can be obtained by motorists at any time.

OWING to the success attained by municipal motor-cars for refuse collecting, street watering, and snow clearing in Westminster, the Lambeth Borough Council have decided to adopt them.

INCLUDED in the sports at Southsea last week was a five miles motor cycle handicap. There were altogether twelve starters, the winner being Mr. J. J. Leonard, who, on his Werner motor-bicycle, covered the distance in 8 minutes 54 seconds.

WHILST travelling from London to Brighton in a motor-car with his wife a gentleman discovered a carman lying injured and unconscious on the road at Merstham. He at once removed his luggage from his car, and, leaving his wife behind, promptly conveyed the man to the Croydon Hospital.

WE are glad to be able to report that entries for the Glasgow Exhibition automobile trials are being sent in at a rapid rate. Quite a number of entries have been received in the private owners' section, among the latest being the new 16 h.p. car of Mr. C. Cordingley.

THE Bosmere and Claydon Rural District Council has adopted a resolution that "in the opinion of the Council motor-cars should bear a distinguishing number, and that all drivers of motor-cars should carry a certificate as to their qualifications as drivers."

WE understand that application has been made to the Watch Committee of Folkestone for licences for motor char-a-banc. The proposal is to place at least half a dozen of these vehicles on the roads, to ply between Folkestone and Hythe, and also to convey passengers for country trips at nominal fares.

MR. F. W. HUDLASS, of the Phoenix Motor Works, Southport, had two motor-cars destroyed in a fire which lately occurred at Messrs. Hill's carriage works in that town, whither they had been sent to be painted and finished. We extend our sympathy to Mr. Hudlass, the fire resulting in the entire loss to him of the value of the two cars.

AT five o'clock to-day (Saturday) there is to be held at Dashwood Hill, by the Automobile Club, a hill-climbing competition, which is open to all motor-vehicles, whether entered by members of the Club or not. Each competitor will be required to ascend the hill three times. Dashwood Hill commences at the thirty-third milestone from the Marble Arch on the old Oxford Road, and is reached via Acton, Ealing, Hanwell, Southall, Uxbridge, Beaconsfield, and High Wycombe. The pedalling of motor-cycles after passing the starting-point will not be permitted. At the time of going to press we learn that nine entries have been received.

AN interesting and eminently practical application of the motor is now being made by Messrs. Hutton, of Summerhill, Dublin. They have despatched Mr. H. Wells on a Werner motor-bicycle to make a complete tour of Ireland. At every stopping-place Mr. Wells will make arrangements about the storage of petrol, motor accessories, etc., for the use of tourists, and he will also, of course, put the Werner through its paces for the edification of anyone interested in automobilism.

MR. F. R. SIMMS has been appointed consulting engineer and advisory director to the motor department of Messrs. Geo. F. Milnes and Co., Limited, of Hadley, Liverpool, and Birkenhead. Their petrol cars and frames for either business or pleasure purposes are at present being manufactured by the Motorfahrzeug and Motorenfabrik Berlin Gesellschaft, of Marienfelde-Berlin, in accordance with specifications by Messrs. Simms and Co. At present the bodies only for these frames are made at Messrs. Milnes' Works at Hadley, but it is their intention to manufacture the cars throughout in this country under the style of "Milnes," which name has been so well known during the last forty years in connection with the building of tramcars.

CORRESPONDENCE.

YORK TO LONDON.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Your correspondent, F. Hunt, in the issue of the 22nd ult., gives us some very interesting details as to the running of a Serpollet car. He is very pleased, and states he has created a record by his performance of 199 miles in 19½ hours. This works out a running average of less than "legal limit." An 8 h.p. Panhard can easily do this journey in nine or ten hours. I know one instance at least in which the run was done in nine hours. He states the cost for running the 8 h.p. Serpollet was 21s. 8d., or about ¾d. per mile. An 8 h.p. Panhard would have consumed about eight gallons of petrol and half-gallon of oil. Take petrol at 1s. 6d. and oil at 2s. 6d.; total cost 13s. 3d., or about 0·8 of a penny. Where, then, is the vaunted superiority of the steam car? If this particular run was a "record," what must the poor man with a "steamer" do in ordinary runs? His statement as to "many owners of these cars giving them up because of the difficulty of finding men to run them" affords much food for reflection.—Yours truly,

J. E. H.

THE CREESE MOTOR STARTER.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I notice in your issue of June 15th, "Shifter" is good enough to recommend the inventions of the Creese Motor-Starter Company. I am having a good deal of trouble with my car, fitted with two-cylinder engines, and have been recommended to adopt the Creese device. I shall be glad if "Shifter" or any other motorist who has used this system will favour me with his experiences.—Yours faithfully,

INQUIRER.

MOTOR HORNS AND BELLS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I think that a regulation to prevent the use of horns, bells, etc., except by the special vehicles, would be better than all kinds of petty persecutions. The use of horns by cyclists and bells by some motor-cars is very confusing, and I would suggest that the A.C.G.B.I. might bring the matter forward with advantage. I think that horns should be used for motors only, and of two different musical pitches, to distinguish between light cars, quad, and tricycle, and the heavier cars. It should be an offence to make use of any sound that is reserved as a public signal for any other purpose but its legitimate object.—Yours truly,

W. T. WARNE.

THE NOMENCLATURE QUESTION.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I would again press upon all who are interested in automobilism the importance of having the question of suitable nomenclature taken up and dealt with in a practical manner. Will the Automobile Club, which is doing such splendid work in many ways, be good enough not to consider this subject as beneath their notice, and appoint a committee to give us some leading in this matter? If this is not done, and soon, we shall never be able later to get rid of many names and phrases, which will tell to all time that we have been behind the world in power traction matters. It was with real disgust that I saw the other day the premises provided for autocar storage, through the energy of Mr. Harrington Moore, styled in large letters "Automobile Club garage." Surely, words can be found in the English language to describe a place for housing autocars without going to France for a word not very pleasant to pronounce in French, and ridiculous pronounced as if it were English, which, of course, it will be by the too numerous Englishmen who know no French. Surely motor-house, autocar-shed, or stable would serve our purpose. When we speak of "the stables" we include the coach-house, and as we have our driving power and our carriage in one in the autocar, it appears to me that the expression autocar-stable would do very well.

I give the above as an instance, but there are numerous foreign expressions insinuating themselves into our motor-talk,

which should be exorcised at once, and let us talk in decent Anglo-Saxon—a language which has plenty of good words without our borrowing from our French neighbours. I would also again beg that the question be considered whether we should not have a generic word to contrast our vehicles with horse-driven carriages. And no better word can be found than "power," which is expressive and conveys its meaning at once. Power-traction, power-omnibus, power-cab, power-lorry, power-wagon, power-cycle, all express what it is desired to express, viz.: that the vehicles are not hauled by animals, but carry their moving power within themselves. The result of our having no generic word is that the names we use convey nothing to the general public, whom we desire to interest in the new locomotion. What do Ariel, or New Orleans, or Panhard, or Daimler, or Peugeot convey to them, without some generic word along with them? What we should strive to do is to keep before the public the fact that power-traction is progressing, and it is only by their seeing the same word time after time, and day after day, that they will be awakened to the fact that automobilism is a reality and advancing with rapid strides. Whenever that conviction reaches the Man in the Street, he will step out too.

Therefore, I again say let the Club take this matter up as a serious factor in our prospects of public progress.—Yours truly,

J. H. A. MACDONALD.

FRONT DRIVING.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—It may interest your readers to know that patents have been applied for in England and on the Continent for front driving wheels as suggested by Mr. Sennett in his recent interesting article entitled, "A Run Across France on a Racer." The specifications do not include fore-carriage traction, but that which I think is still better—the Ackerman system of steering applied to all four-wheels, which may also be drivers if required. Mr. Sennett in a previous article suggested a better transmission gear. Such a device is also included in my specification. It consists of a new variable double friction gear from which any speed may be obtained with one lever, without taking it out of gear. It also answers for the starting clutch, is quite silent, does away with the four pairs of cog-wheels where there are four speeds, is very much cheaper in first cost, as well as in the up-keep, and can be fitted to any car. My idea was derived from reading Major Bethell's paper published in your *Journal* about the end of March. I called my design a military vehicle, and it was in the Patent Office a week before the War Office prizes were offered. I also have a design for a six-wheel lorry, all drivers, and shall be pleased to send further particulars to any of your readers. I think that front drivers, besides having other advantages, would drive heavy racing cars with about half the power now required, and that, with all four wheels driving, a heavy winter road would present no more difficulty than do the roads at present.—Yours truly,

GEORGE FREESTONE.

THE SPRAG DIFFICULTY AGAIN.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Replying to Mr. Thatcher's letter in a recent issue, I would recommend him the arrangement described in your *Journal* of Saturday, May 4th last. I and other friends have used this sprag a good deal and find it absolutely satisfactory.—Yours faithfully,

W. R. PIDGEON.

THE 70 H.P. NAPIER CAR.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I thank you very much for your reference to a letter of Mr. Weigel's in the *Vélo*. I may say that he has absolutely no authority from me to make such a statement as he did, and that in every respect his action in the matter is entirely unwarranted so far as I am concerned. Unfortunately, Mr. Weigel's ideas change so rapidly that it is rather difficult to know what he really wishes to convey from his various letters. He objected to the Napier being a very fast car, but now that it has publicly done a faster time than any other car he tries to get his French

friends to believe that I wish to issue challenges against all French carriages. I am not aware whether Mr. Weigel is as well known in France as in England. Of course, if he is, his judgment on these matters will no doubt be given due consideration.—Yours truly,
S. F. EDGE.

ANOTHER GOOD RUN ON A SERPOLLET STEAM CAR.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—In connection with your correspondent's (Mr. F. Hunt) run from York to London on a Serpollet carriage, we may mention that we ourselves had a run on one recently which was better from several points of view, although the distance was not so long, being only 120 miles. Leaving our garage King's Road, Reading, at 11.20 a.m., we arrived at Woodbridge, via London, Chelmsford and Ipswich, at three minutes past eight. The run was in no way a fast one, as it was taken entirely for pleasure, and there was a considerable amount of time on the road occupied in refreshments, to say nothing of about thirteen miles of congested mid-day London traffic. Only twelve gallons of paraffin were used on the journey, which works out at ten miles per gallon. At 6d. a gallon, the cost works out $\frac{1}{2}$ d. per mile; the car was a large four-seated one of 8 h.p.

Mr. F. Hunt mentions that during his run not a single bolt or pin gave way. We would like to point out that our experience has led us to believe that nothing requiring attention on the road is the rule, not an exception. We ourselves on this journey were favoured with the same results, and we have been for several thousand miles on different Serpollet carriages. While admitting Mr. Hunt's to be the record run for the distance, we claim record for the shorter distance both from the point of speed and oil consumption.

We may mention that we have made a special feature of the Serpollet carriage for the last twelve months, having been over the French works three or four times, and have printed notes upon the management, which we shall be pleased to place at the service of any who have difficulty with this carriage.—Yours truly,
THE SPEEDWELL MOTOR COMPANY.

ALLEGED NARROW ESCAPE OF LORDS TREDEGAR AND CAWDOR.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Herewith enclosed please find some interesting cuttings re motor-car incident—Lords Tredegar and Cawdor said to have been in danger. Now, as a matter of fact, I had driven on my motor-car to a small village named Carleton (5½ miles from Newport), and had stopped the engine whilst transacting my business. Just as I was about to start again I heard a couple of horses galloping from the opposite direction. I immediately ran on to the main road and succeeded in stopping one. They were attached to a mowing machine, and it appears that a Daimler motor returning from Cardiff to London had caused them to bolt. I was glad to find that an accident of a serious nature had not occurred. As to the alleged danger to their Lordships, the report was quite unfounded, and in all fairness to the driver of the Daimler, he appeared to be driving with care. Strange to say, the carriages containing Lords Tredegar and Cawdor passed the Daimler car before my own eyes, and neither of the horses took any notice of it. The passing actually took place about three-quarters of a mile from where the horses attached to the mowing machine were frightened. As a motorist I feel it my duty to forward these particulars.—Yours truly,

ERNEST E. HARRIS.

THE British Power, Traction, and Lighting Company, Limited, of York, writes:—The paragraph relating to Mr. C. Arthur Pearson, p. 337, in your issue of June 29th, stating that he had "gone to America in search of an automobile capable of travelling a hundred miles an hour" is incorrect to this extent: Mr. Pearson ordered that car at the P.T.L. Gardner-Serpollet Works, in York, on May 29th, 1901, before he went to America, and as the result of a 100-mile trial run which he and Mrs. Pearson made on one of our carriages on Whit-Monday.

LONDON COUNTY COUNCIL AND MOTOR-VEHICLE REGULATIONS.

LAST week we published the text of the eminently sensible report of the Highways Committee of the London County Council, describing as entirely unnecessary the numbering proposals of the Berkshire County Council. This report should have been discussed on the 25th ult., but was postponed until Tuesday last, when it was debated before a full house. Mr. Mark Mayhew, who is at all times ready to defend the interests of automobilists generally, had confided to us his fears that, as the whips would not act on a non-party question of this kind, there was a possibility that a majority might be found on the Council who would wish to refer the recommendation back to the Committee, and pronounce in favour of numbering restrictions. An amendment in favour of this course was, indeed, moved at Tuesday's meeting by Mr. Wiles (St. Pancras), who received the support of Mr. Russell Spokes. Mover and seconder aired the familiar arguments of the uninformed that motor-car accidents were numerous, that automobilists were persistently regardless of the safety of others and the commands of the police, and that, so far as concerned the carrying of numbers, the cars were already so ugly that a number would be no further disfigurement.

Then Mr. Mayhew stepped into the breach, and in a strenuous speech he pointed out the encouragement that was being offered by foreign Governments to the automobile industry, because they saw that the motor-car was to become the solution of some of the most difficult social problems. The demand for increased facilities of locomotion was an urgent one. The motor-car would fulfil those requirements, but it would not be perfected if the wings of the amateur user were clipped. Continental authorities had done all they could to encourage the amateur user because they knew that the commercial man would wait for the perfect machine, and it was the amateur user, whose time was his own, and who had the inclination, as well as the money to spare in driving an imperfect machine, who found out the imperfections, and brought them under the notice of the maker. The more amateur drivers there were the sooner would we arrive at the cars which were to carry the working classes from town to country and *vice versa*. Therefore, he urged them to encourage the amateur. He could understand the outcry for numbering if cars were continually causing accidents. The editor of the *Motor Car Journal* had reported to him that since the paper was started, two and a quarter years ago, there had been but three accidents in London in connection with motor-vehicles. During the same period there had been but twenty prosecutions for furious driving of motor-cars in London, and as the police found that there was difficulty in securing convictions in prosecutions for furious driving because no one's life or limbs had been endangered, almost all these prosecutions were for driving at more than twelve miles an hour. Numbering was proposed merely to identify the few offenders who refused to stop when called upon to do so by a policeman or person in charge of a restive horse. Chief Constables admitted that such offenders were very few. These, moreover, would not be caught even by numbering, as a man who would be guilty of failing to stop would not hesitate to cover his number when guilty of fast or dangerous driving. Mr. Mayhew proceeded to contend that there was no necessity for numbering; that numbering would prevent many persons from driving cars; and that it would be of no use whatever, as real offenders would conceal the tickets. Fast locomotion, he went on to say, was considered so great a necessity that it was at present carried out at the cost of hundreds of the lives of our countrymen per year without remark. In 1899 there were between 15,000 and 16,000 railway men injured on the railways of this country, and about 500 killed. It was the duty of the London County Council to lead other County Councils. Its members had more enlightenment than their brethren in the country districts, and having their fingers more continually on the pulse of human life they were in a better position to foretell the future. It was easy to see that in the near future the automobile industry would be one providing work at high wages for thousands and thousands of workmen.

If the movement were strangled in this country we should see English gold going to pay French workmen and purchase French material. Already it was doing so to the tune of a quarter of a million pounds sterling a year, in the very early days of the industry. If, on the other hand, we refrained from legislation when legislation was unnecessary, as in the present instance, it might be hoped that ere long the tide might be reversed, and French, German, and American gold would be coming to pay for English labour and material in the automobile manufactories in the old country.

Mr. H. W. L. Lawson could see no objection to numbers, but thought that they would be absolutely useless, and would vote against them.

Mr. John Burns made a very practical speech against the harassing of a new industry, and said that any further means of identification were absolutely unnecessary, in proof of which he adduced the fact that Mr. Mayhew had that very morning been fined £5 and costs at Lewes for driving a motor-car furiously at Brighton. Loud and continued merriment followed this bold sally, which was enjoyed by no one more than Mr. Mayhew himself. Mr. Beachcroft supported the amendment; he eulogised the speech of Mr. Mayhew, but believed his views to be mistaken. Sir Arthur Arnold rose to speak, but the closure was moved, and the question was put. Fifteen members voted for the amendment, but a forest of hands were held up against it, and the report was adopted by an overwhelming majority.

The London County Council has done its duty, and the danger is averted.

THE annual motor-cycle race meeting of the Automobile Club will be held on Wednesday, the 17th inst.

MR. JAMES WOODROOF, of the Royal Saracen's Head Hotel at Beaconsfield, has been granted a licence by the Beaconsfield District Council to store petrol for the use of motorists.

ON another page we reproduce a photograph of an up-to-date wedding party at Soham, Cambridge. The car used was a M.M.C. Lynton wagonette, belonging to Mr. Mann, of Soham, and the turn-out naturally attracted much attention.

THE newly-formed Birmingham Motor Manufacturing and Supply Company, Limited, has just completed arrangements for the opening of temporary premises at 76, Newhall Street, Birmingham.

A COMPANY has been formed with the object of running a regular service of motor-cars in Tunis. Sousse and Sfax are to be the first points connected, but it is hoped shortly to extend the route to Tunis at the one end and Gabès at the other.

THE Pan-American Exhibition is being boomed in the small cities of the United States by means of motor-cars carrying advance agents distributing souvenirs.

DR. VON STERN, a leading Austrian automobilist, arrived at Berlin on the 27th ult. in his 35 h.p. Mercedes car from Budapest. Accompanied by his wife, he travelled through the Carpathians as far as the Tatra, then through the valley of the River Waag and the Province of Silesia to Berlin.

THE Daimler Motor Company, Ltd., employees' outing on last Saturday proved most enjoyable. About 400 started for London and Portsmouth, one hundred of them breaking their journey at the metropolis. The visit to Portsmouth afforded a most instructive morning's pleasure in the inspection of the dock-yards, which a large proportion of the party made.

A SERIOUS motor-car accident occurred on Wednesday last week between Twyford and Maidenhead. The Hon. Evelyn FitzGerald, son of the late Lord FitzGerald, and the Countess of Rosslyn were being driven in a car along the Bath road when a spoke in a wheel broke. A tire burst and the vehicle completely collapsed. Both occupants, with the driver, were thrown violently out, and the Hon. Evelyn FitzGerald was pinned beneath the body of the vehicle. When extricated some time afterwards, with difficulty, he was found to be badly hurt, and was, with Lady Rosslyn and the driver, conveyed in a lady's victoria to Maidenhead Cottage Hospital. The car was, we understand, the Mors racer used by Levegh in the 1900 races.

A NEW LUNCHEON BASKET.

MESSRS. WARD BROS., Slaney Street, Birmingham, have just placed on the market the "Sirram" tea and luncheon basket, which is neat in appearance, and very compact. The basket contains a provision box, wicker covered flask, enamelled plates, white handle knives and forks, salt jar



and spoon, spirit stove and stand, kettle, tea infuser, spirit tin, tea and sugar tin, enamelled cups and saucers, butter bowl, cream bottle, teaspoons, etc., etc. We understand that the price is moderate, and that baskets can be supplied to suit the convenience of either one, two, three, or four persons.

FURIOUS DRIVING CASES.

AT Cardiff, George Thornton, mechanical engineer, of Battersea, was summoned for driving a motor-car "at a greater speed than reasonable." The Stipendiary, accepting the evidence of the police-officers, found that the car was propelled at double the speed of a trotting horse, or at a rate of ten miles an hour, which he held with great confidence to be an unreasonable and improper, and even dangerous, speed, having regard to the traffic. He imposed a fine of £5 and costs, or one month.

AT Gateshead Police Court, Mr. W. E. Galloway was charged with furiously driving a motor-cycle in High West Street, at 8.55 a.m. on June 6th. Sergeant Wilkinson said that on the morning in question he saw Mr. Galloway in High West Street, near the end of Leopold Street. He was going very quickly, but witness could not form an idea of the speed, as he was not a cyclist. By Mr. Galloway: He appeared to have full control over the machine and to know what he was doing. Witness did not think of stopping him at the moment. Mr. Galloway stated that he had full control over the machine, and could have pulled it up promptly. He might have been going at from ten to fifteen miles an hour, but he did not think it was quicker. The Chairman said the Bench, like Mr. Galloway, were desirous of protecting the public, but having heard the evidence, felt justified in giving the accused the benefit of the doubt and dismissing the case.

AT Carlisle, Edgar Dewar, fruit preserver, of Manchester, was charged with driving a motor-car at an excessive speed on the highway at Stanwix, at 11.35 a.m. on June 9th. Defendant admitted that he was going fourteen miles an hour. P.C. Dickinson deposed that he saw the defendant in Scotland Road at the time named, travelling northwards on a motor-car over twenty miles an hour. Witness was in plain clothes, and shouted to the defendant to stop, but he did not do so. The car returned to the same place slowly at 1 p.m., and he then stopped the defendant, who explained that he did not stop before because he understood witness meant he should slacken speed. For the defence, Mr. D. R. Denard, who was with the defendant, deposed that they went to Gretna and back. They started shortly after 11 a.m., and got back just after 1 p.m. In his opinion they were going from twelve to fourteen miles per hour. They did not stop at Gretna more than three or four minutes, because there was something wrong with the machine. The Bench imposed a fine of 20s. and costs (£2 4s. 6d. altogether).

AT Braintree Petty Sessions, Henry Cooper, of Halstead, was summoned for driving a motor-car at a greater speed than twelve miles an hour, at Bocking, on June 5th. Police-sergeant Clift said defendant was travelling at the rate of eighteen miles an hour through Bocking, whilst Superintendent Terry put the pace at twenty miles an hour. Defendant was fined 5s. and 8s. 6d. costs.

At Broxton, William Watson, of Liverpool, the owner and driver of a motor-car between Chester and Farndon, was summoned for furious driving on the 15th June, at Churton. The Deputy Chief Constable, however, said it was not a very serious case, and he would be willing to withdraw the charge on payment of costs.

At Epping, Lord Carnarvon was summoned for driving a motor-car at a greater speed than twelve miles an hour at Epping on June 22nd. His lordship wrote asking for the case to be adjourned to obtain information for the defence. The application was granted.

At Oxford, Harry Hatton, a driver for the Reading and District Motor Car Co., was summoned for furiously driving a public motor-car in Cornmarket Street on June 8th. He pleaded guilty. P.C. Steele said the defendant drove a motor-car along Cornmarket Street at between eight and ten miles an hour, which was a dangerous rate in Cornmarket on a Saturday night. He had previously cautioned him. Defendant said he had driven motors in different towns for two or three years, and had never been cautioned before. Fined 5s. and 10s. 6d. costs, or seven days.

At Brentwood, Ferdinand Boquet, of Worlingham Hall, Beccles, was summoned for furiously driving a motor-car. The defendant was stopped at Ingatestone through the agency of the police telephone, and had travelled there at the rate of twenty-seven miles an hour. A fine of £3 and 28s. costs was imposed.

At the Worthing Petty Sessions, Harvey Ducros was summoned for driving a motor-car at an unreasonable rate of speed in Chapel Road. Mr. Staplee Firth defended. Arthur Reed said during the afternoon of June 17th he was on the Marine Parade, where he saw a motor-car coming from the east to the west. It was driven by Mr. Ducros, other persons also being in the car. When witness first saw the car it was going at the rate of from sixteen to eighteen miles an hour. The car turned into Bath Place, and almost went on the pavement as it was being driven so fast. Further evidence as to speed having been heard, Captain A. B. S. Fraser stated that on the afternoon of June 17th he was in Chapel Road, about half-way up, when he heard "a tremendous rush," and on looking round saw a motor-car go by. The car ran into a landau which was standing opposite Mr. Southey's shop and overturned it. Defendant then went into the box, and stated that he left Waive's Hotel about 2.30 p.m. on June 17th, and never exceeded a speed of from six to eight miles an hour. If he had been driving along the Marine Parade at fifteen miles an hour, he could never have turned such an angle as Bath Place without going into the houses. In Chapel Road he was still on the first speed of the car, from six to eight miles an hour. George Ducros, brother of the defendant, corroborated the latter's statement as to the speed of the motor-car and the movement of the horse. Mr. Firth, in addressing the Bench on behalf of his client, submitted that the accident could only have been caused in one way, viz., by the horse moving and throwing the front of the landau into the back of the car. The Magistrates retired and were absent twenty-five minutes. On their return, the Chairman said the Bench were equally divided in their opinion, and the case must accordingly be adjourned for four weeks.

At Daventry, Alfred J. Boulton, of New Barnet, was summoned for driving a motor-car at the rate of over fourteen miles an hour at Weedon on June 7th. Defendant did not appear, but his solicitor wrote asking that the case might be taken in his absence, and admitting that defendant was the driver of the car in question. Mr. W. Rhodes, J.P., stated that on June 7th he was driving a pair of cobs to Weedon station, when turning against the barrack gates a motor-car coming from Daventry flashed by. There was no bell or horn sounded. The car must have been going at eighteen or twenty miles an hour. The cobs jumped back, breaking the harness. The driver of the motor-car stopped in Weedon to drop a friend and witness sent to get his name. Superintendent Hustler said that numerous complaints reached him of the rate at which motor-cars were driven in the district. Fined £3 and 13s. costs.

At Lewes, Mr. Mark Mayhew was fined £5, including costs, for driving a motor-car at a speed to the common danger of passengers at Rottingdean. Evidence for the defendant was given by Captain Rawson, late High Sheriff of Sussex.

At Kidderminster, Thomas Smith was charged with driving a motor-cycle on the footpath at Ombersley on June 10th. Defendant pleaded guilty, but said he did it to avoid an accident. Samuel Jones, groom, in the employ of Messrs. Spreckley Bros., said he was driving when he met defendant, who came very fast, and did not pull up in the slightest but went on to the footpath. Frank Boden, who was with defendant, said there were some sharp stones on the road, and they had to go on the path to avoid an accident. The Chairman said the Bench did not wish to discourage the use of motors, but people must learn to drive them properly. Fined £1 and costs, 11s. 6d.

At the West London Police Court, Sir Edgar Vincent appeared to answer a summons charging him with driving a motor-car at a greater speed than twelve miles an hour, "having regard to the traffic." The evidence for the prosecution was that of Police-constable Alker, 517T, who said he saw the motor near Young's Corner in Chiswick being driven by Sir Edgar at "a high rate of speed." He followed behind on a bicycle carrying a speed indicator, which on passing Chiswick Lane registered nineteen miles an hour. In answer to Sir Edgar the constable said there was no approach to an accident. The car was not recklessly driven; indeed, it was skilfully driven. Sir Edgar Vincent gave an account of the journey from Buckingham Gate to Hounslow, and said the speed was at the average rate of ten miles an hour. He was not prepared to

say that the speed at a given time did not exceed twelve miles an hour, but he slowed down whenever it was required. Mr. Lane pointed out that the regulations of the Local Government Board prohibited a speed beyond the rate of twelve miles an hour, having regard to the traffic on the road. No one could help seeing that the speed of motor-cars was greater than twelve miles an hour. However, there had not been any accident in this case, and the car was skilfully driven. He imposed a penalty of £5 with 3s. costs.

At Portsmouth Police Court, on Monday, Mr. J. A. Koosen, of Southsea, was summoned for driving a motor-car at over twelve miles an hour on the evening of June 7th. Mr. Staplee Firth defended. The evidence for the prosecution was given by Detective-constable Wombwell and Police-constable Pinkney, who swore that on the night in question they were on duty in plain clothes, with bicycles, and timed Mr. Koosen from an electric-light column on Clarence Parade to another at the bottom of Nightingale Road, and that he covered this distance in three and a half minutes. That they subsequently measured the distance and found it to be 2,024 yards, which they stated showed a speed of twenty miles an hour (Here a large map was put in illustrating the locality). That they followed and spoke to defendant, whom they alleged to have replied with abusive language. In cross-examination by Mr. Firth they admitted that they had special orders from the chief constable, and further that on meeting with Mr. Koosen they immediately got on their bicycles and followed him, keeping up with him as far as the door of his stable. One admitted to have ridden twenty miles in fifty-four minutes on another occasion, and was asked by defending counsel why he had not locked himself up for scorching. Mr. Firth, for the defence, controverted the evidence of speed, and further strongly animadverted on the practice of chief constables in sending men out on specific errands of this kind. It was not likely they would return empty-handed, and such proceedings tempted them to fabricate evidence. Mr. Koosen was called, and stated that he was not travelling more than eight or nine miles an hour, as the car was out of order, and he was passed by several lady cyclists. He denied the conversation alleged. Mrs. Koosen followed and corroborated defendant's statement, as did also Mr. Oliver. Mr. R. Buttemer was then called, and stated that he was familiar with the car in question, and knew it to be in poor running order at the time. He had tested it that morning, and found it would not run at more than 300 revolutions, giving a maximum speed of 10.02 miles an hour. It was absurd to say it could go at twenty miles an hour; it might have done fourteen or fifteen when in good order. Mr. Firth offered a practical demonstration to the Bench if they cared to have it. The magistrates retired for a brief interval, and on returning said they decided to dismiss the case. Costs were not asked for.

THE CHISWICK FATALITY.

At the inquest held on Mrs. Elizabeth Pearce, who was knocked down and killed at Chiswick by a motor-car belonging to Mr. C. J. Scarisbrick, the evidence showed that the motor was only proceeding at a moderate pace, but that Mrs. Pearce, on alighting from a tram-car, completely lost her presence of mind, and instead of going towards the footpath suddenly stopped and faced the oncoming car. The conductor of the tram said the woman appeared giddy, as if she had been drinking. He tried to stop her stepping off the car, but failed. Instead of going towards the path she seemed confused, and stood still. The motor pulled up in five yards. If the woman had not been carrying a child she could have got to the path in safety. Mr. S. H. Brown, sanitary inspector for Hammersmith, who also witnessed the whole affair, said the motor-car, which was travelling about ten miles an hour, slackened on nearing the tram, and the woman turning round as if nonplussed, was knocked down. The car was stopped within nine feet. It appeared to be perfectly under control, and the accident would not have happened if the woman had not hesitated and seemed to lose herself. Mr. C. J. Scarisbrick, the owner of the motor-car, who expressed deep regret at the accident, said that the speed was seven miles an hour. He was close up when the conductor stepped off with the woman, and as he held her back he let the motor go on. At the time the gas was off and the foot-brake on, and when the woman moved he put the hand-brake on as well. This was the first accident he had had. The jury returned a verdict of accidental death, and added a rider that they considered the woman was sober, but lost her head.

ACTION OVER A MOTOR-CAR.

At Cambridge, the Cambridge and Newmarket Auto-car Company sued Mr. St. Clair Legge, of Southall, for £19, being the balance of the hire of a motor-car as per agreement, and costs of bringing the car to the Company's premises from Southall. Mr. S. J. Miller appeared for the plaintiffs, and Mr. J. F. Symonds for the defendant. George Charles Bedwell, managing director of the Cambridge and Newmarket Autocar Company, stated that defendant hired a car for three months, but subsequently said it was not powerful enough, and another car was accordingly substituted. The plaintiff company fetched the first car at their own cost, as they understood the defendant was about to buy another. He had promised to do so, and it was for this reason they agreed to bring the first car back at their own expense, and not charge him for extra hire. His Honour gave judgment for the amount claimed with costs.

THE Motor-Car Journal.

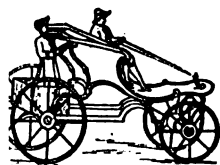
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COMMENTS.



MOTORIVE CARRIAGE 1899

WE are glad to learn that a large number of amateurs are entering for the Trials of Reliability to be held in connection with the Glasgow Exhibition, and from the route maps exhibited at the headquarters of the Automobile Club in London, it is clear that the selected routes are through some of the prettiest scenery in Scotland. The entry fee has been reduced to £5 per vehicle if paid before the 1st prox. Those who fulfil all the conditions of the Trial will be awarded official certificates by the Judges' Committee. As, however, there will be several amateurs who will prefer to have only their daily runs from Glasgow recorded, commemorative silver medals will be struck, and these will be awarded to those who carry out the five daily runs. It is to be hoped that all private owners who can possibly participate in these runs will do so, and help to continue the educational work begun by the 1,000-miles Trial.

The Rule as to Speed.

THE rule as to speed in connection with the above runs has been the subject of some discussion. It declares that vehicles will not be permitted to pass certain points before the expiration of a certain period from the time of passing a previous point. We are not in the secrets of the Committee responsible for this regulation, but it is apparently intended to prevent very high speeds. Probably the speed beyond which, in the opinion of the Committee, travelling might be dangerous or inconvenient to the public, will be the speed fixed as the maximum speed to be permitted between point and point. The effect of the rule should be to keep the cars together and to avoid the unexpectedly early arrivals which confused the minds of the spectators in many towns on the route of the 1,000-miles Trial.

Dashwood Hill Trials.

THE hill trials on Dashwood Hill last week were thoroughly successful, and a most enjoyable time was spent by those who took part in the proceedings. The run from London was not over pleasant, for at Uxbridge Road there was a complete blockage of the traffic. At the tramway terminus there were seven or eight electric trams and several market garden carts, and these absolutely prevented progress. The trams started at intervals of about a minute, and travelling about sixteen miles an hour made journeying amongst them and the slow traffic very uncomfortable. The reason so many tram-cars were about was owing to the fact that the company was testing a new line extending to Southall, a distance of eight miles. Beyond Uxbridge, the wind being in our faces, the dust nuisance was very great, a continuous volume whitening and nearly blinding us. The return journey was, however, much more pleasant, a shower having laid the dust.

The Passing of the 6 h.p.

IN a new industry changes must be expected, but sometimes these are too hurriedly made. Our old friend the 6 h.p.—formerly 4½ h.p.—has answered a good purpose, but whether it has achieved that purpose, and is going to be “passed over,” remains to be seen. We cannot conceive that a car that has done the work ours has, that has been used for touring from one end of the kingdom to the other, and that to-day is a better car than the day it was bought can be lightly cast aside. In going to Leicester it travelled over the whole journey from London at an average of eighteen miles an hour. On Saturday last, with five “up,” it did thirty-two miles within the two hours. A pattern and build of car that does that, is reliable, and always certain, and, we maintain, cannot be hastily discarded.

A Hint for County Councillors.

THE “ten miles an hour” County Councillor, who conjures up for himself a vision of the future, when there may possibly be a few automobile accidents to chronicle—there is precious little basis of that kind to go upon at present—should really direct his benevolent (?) activities to something more nearly within his grasp. The mania for “regulations” should find full vent in an endeavour to restrict the use of horses to such an extent that accidents would be impossible. He might suggest as a beginning that horses should never be allowed to trot or gallop; that a man should always walk at the animal's head, in addition to there being a driver; that every horse should be blindfolded when going through traffic, and anything else that is equally calculated to preclude all possibility of an accident to a horse-drawn vehicle. We are bound to admit that no further suggestion occurs to us at the moment, but, so profound is our appreciation of the high order of intelligence which could evolve the “ten miles an hour” proposal for automobiles, that we do not by any means despair of some wonderful conception being forthcoming from that quarter.

What Horses do.

IT can hardly be said that the County Councillor in question would have far to look for object lessons if he once started a crusade against the unconscionable horse, or the incompetency of its driver. One rarely picks up a paper without reading of some accident or other in which a horse-drawn vehicle is concerned. A nice spectacle, for example, that must have been on Ludgate Hill the other day, as reported in the dailies, when a three-horsed dray, loaded with six tons of greens, got out of the driver's control, and overturned itself on top of the animals in the shafts. When the greens and the wagon were cleared from the horses one was found to be dying and the other dead. Something similar we ourselves witnessed in Gray's Inn Road last week, when a whole wagon full of fish was emptied into the roadway, presenting a most curious sight. Then one reads of Lady Walker's carriage accident in Hyde Park. A pair of horses dashed at a furious pace into the park railings and pitched out Lady Walker and a friend. Fortunately they were not seriously

hurt, but the footman sustained a sprained ankle and the coachman concussion of the brain. Again, a brake was overturned at Hampton Court, and several people were injured, and a wagonette disaster was reported from Northampton recently. Nor must it be forgotten that for every recorded incident of this type there are probably several that escape the notice of the press. But the soul of the County Councillor is quite unmoved by catastrophes of this kind.

A Petrol-Motor Street Watering Wagon.

As we mentioned in a recent issue, the Milnes petroleum-spirit lorry, A1 of the Liverpool Trials, was experimentally fitted up as a high-speed street-watering vehicle. By the kindness of one of our subscribers we are able to publish the accompanying illustrations of the lorry. In both pictures the vehicle is shown by the hydrant, from which the



tank is being filled. The experiments proved very successful; with a load of about two tons of water a speed of $7\frac{1}{2}$ miles per hour was maintained. At this speed the water was sprinkled on the road, laying the dust, instead of converting it into the mud which usually marks the passage of the horse-drawn water-cart.

Rule for Horse-drawn Vehicles.

MOTORISTS are a tolerant and patient section of the population, and although opponents of the coming means of locomotion on ordinary roads have made scores of suggestions with regard to the curtailment of their rights, they have not retaliated. But toleration has been regarded in some quarters as weakness, hence the consideration that should be given to the

proposals of those who argue that automobilists should insist on stringent regulations being issued with regard to horse-drawn vehicles. From the University College, Nottingham, Mr. J. Erskine-Murray writes pointing out that if motorists are to stop whenever a nervous driver of a horse demands, it is only proper that the drivers of horse-drawn vehicles should be subject to the same rule. Of course, some will say the idea is preposterous, but they must not overlook the fact that a horse is an animal of uncertain temper, whereas the motor-car is a vehicle whose ways are those of mechanical regularity.

Strain on Drivers.

MANY columns of advice with regard to motor-racing have lately appeared in the papers, and all condemn any suggestion as to high-speed contests being introduced on English roads. Personally, we do not feel that such races are ever likely to take place here, so our contemporaries need not worry. The strain on the riders is too intense to be long endured many times, and only a comparatively few men have a sufficiently strong nervous system to stand it. This fact alone will be enough to threaten the permanence of the sport, and it must not be overlooked that such races as that from Paris to Berlin are exceptional, and not the rule.

The Position of the Arms when Driving.

WHEN Mr. Duryea issued a picture showing a modern lover with one arm round a modern lady, and the other grasping the lever of a motor-car—a picture which was reproduced in the *Motor-Car Journal* at the time—he was apparently anticipating the divided attentions of the Frenchman who appeared in the Brentford Police Court the other day, as fully set forth in our columns this week. A witness testified to the zig zag route taken by the defendant's motor car along a main road. There was nothing wrong with the car, but the driver was doubly engaged, for with his left arm he attempted to steer the car, and with his right he gently inclined a lady, who was by his side, towards him with the view of impressing osculatory affections upon her. But this was not the worst, for the motor-car was driven into a youth who was walking, and the collision was so violent as to project the young lady forward. She lost the guidance of her companion's arm and fell upon the lad in the roadway. The whole incident shows how inadvisable it is to enjoy two pleasures simultaneously. There is a time for everything, and the work of the arms should not be distributed over two objects at once.

Education at Grays.

PASSING through the quiet little town of Grays a contributor to the *Motor-Car Journal* has discovered a rather novel development in the training of horses, which was originated in the Royal stables at Windsor. Mr. Taylor Davies is the manager of the Grays Motor Company, which has its headquarters at the King's Arms Yard, and is just now carrying on a great educational work among the horses of the locality. His plan is to ask horse owners to take their animals for a good drive and then bring them to his yard, where they are given a feed of corn close to a motor-car which is kept in action all the while they are feeding. Every Monday morning, from 8.30 till noon, the motor-car is kept going, and owners can thus get their horses accustomed to the noise of the car.

Drawbacks of the Horse.

IN the course of a recent paper on "The Scope of the Motor-Car Movement," Prof. R. H. Thurston, a well-known American engineer, pointed out that sanitarily, the automobile is a most desirable accession, not simply as removing the horse and his effluvia and excreta from the highway, and thus

providing the assurance of comparatively pure air for the lungs and sweet air for the nostrils, but also as removing the danger—a danger of no small importance—of distribution of noxious elements and malign bacteria through their introduction into foods transported by the present system through our streets and along our highways. Many a mysterious case of illness and many a death have, considers the professor, unquestionably occurred through the importation into the human system of poisonous germs and injurious effluvia, taken in with the food which has traversed the streets exposed to absorption of dust and all impurities, or by the inhalation of the clouds of dust, germ-laden, as they are certain to be, to a greater or less extent, which arise on the highway. In the formation of dust, also, the horse contributes a very large share through the continual trituration of the earth or pavement by his iron-faced hoofs, incorporating with the powder every form of unsanitary matter, organic or inorganic, existing in the road, or flowing or flying over it from neighbouring sources. This consideration is probably of enormously greater importance than is usually supposed or realised.

An Incident of the Big Race.

A MOTOR-CAR is regarded in some quarters as a means of evading wrath to come. In the tourist section of the Paris-Berlin race, however, in one case at least, a gallant *chauffeur* hastened all unconscious to justice. The *chauffeur* in question owed a long-standing account to a German merchant, which the latter had up to the date of the race failed to collect. Like all good Germans the merchant took a keen interest in the contest, the more so when he discovered that his debtor was amongst the starters. Day by day the worthy German followed the course of his long-winded client till he crossed the frontier of the Fatherland. Then did the merchant pounce upon the debtor, armed with power to distraint upon him there and then failing a full discharge of the long-standing account. The account was paid, and the race continued; but at least one competitor learnt the penalty of fame.

Wear and Tear of Roads.

In a paper read by Mr. W. Worby Beaumont, M.I.C.E., at the recent meeting of the Incorporated Association of Municipal and County Engineers at Leicester, the destruction worked upon roads by the iron-shod hoofs of horses rather than by the wheels of the carts which they draw was the theme. It seems that the trotting horse attached to a load of one or two tons is the principal sinner. Sixty per cent. of wear is due to his hoofs, 20 per cent. to the wheels of the vehicle which he draws, and 20 per cent. to atmospheric causes. The more general adoption of motor-cars capable of carrying a load of one to two tons at a speed of eight to twelve miles an hour would, in Mr. Worby Beaumont's opinion, reduce the present wear by something like 30 per cent.—a reduction by which the ratepayer would benefit in a less degree only than the owners of vehicles of all sorts, who would derive a further benefit in the saving afforded to these by well-made and well-kept roads. Dust would, with the general use of the rubber-tired motor-car and better roads, cease to exist, whilst the scavenger would be numbered with the memories of a barbarous past. It is a pleasant vision, nor need one have the gift of prophecy to foresee it, but we fear that few of us of this day will live to see the time when iron-shod horses and steel tires will be the exception, and not the rule of the road.

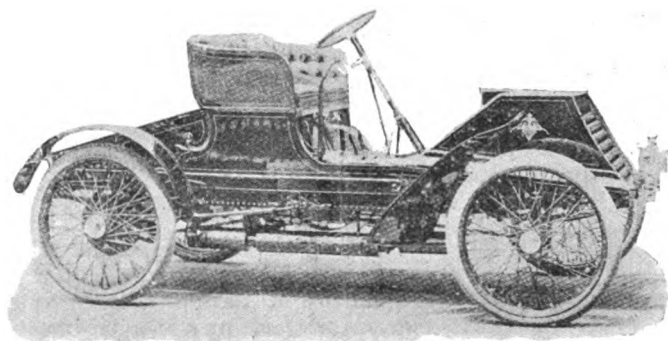
The Reading Motor-Car Service.

THE Sub-Committee appointed by the Reading Town Council with reference to the licensing of motor-cars has reported that, after much consideration, they recommend that four of the (instead of ten as applied for) of the Reading and District Motor-Car Company and one car of Messrs. Pugh and Strode be licensed, one car of Mr. Pugh having been already licensed. The Sub-Committee added that they deemed it undesirable to license any greater number of cars, having regard more especially to the increased danger which in their opinion would be caused if this means of locomotion should to

any large extent be added to the existing traffic in the streets, and having regard also to the nature of the replies received by the town clerk on the subject from other cities and towns. Mr. Brinn asked what power the Council had to refuse to license motor-cars which were passed as satisfactory for public hire. The Mayor stated that the Watch Committee had absolute power to refuse to license any vehicle they chose; but the reason the Committee came to this decision was because they thought they would try a small number of cars first to see if they were detrimental to public safety. He anticipated that the matter would come up again shortly. Mr. Parfitt characterised the Committee's decision with regard to the motor-cars as being somewhat arbitrary; he was glad to hear that the Watch Committee would have the matter before them again, and thought that possibly they would change their views.

The Lincolnshire Automobile Club.

A MEETING of the Council of the Lincolnshire Automobile Club was held last week, Sir H. B. Bacon, president of the Club, in the chair. Several new members were elected, including Lord Willoughby de Eresby, M.P., Mr. W. E. Foster, and Mr. F. H. Dennis. It was decided to hold Club runs to Grantham, on Bank Holiday; Blankney Show, July 31st; Boston Show, July 24th or 25th; and to accept the invitation of Capt. Laycock, J.P., to Wiseton Hall, for to-day (Saturday). Mr. E. Cragg, M.D., has arranged to give a lecture at Billingborough, on motors of various types, illustrated by lantern slides and specimens of cars. It was decided that the lecture should be under the auspices of the Club, and the hope was expressed that it might be repeated at Lincoln.



THE NEW WINTON 40 H.P. RACING CAR. (See page 366).

Cab v. Car.

A WILD chase took place the other morning on the Thames Embankment, and although we were not eye-witnesses, the circumstantial accounts received give the performance an air of actuality. Mr. Leo Stern, the husband of Madame Suzanne Adams, has a motor-car, and was taking his wife for a drive along Victoria Street when they were espied by Mr. Neil Forsyth, the well-known opera manager. Now it so happened that that gentleman was in a cab intending to see Madame Adams about taking part in an opera owing to the sudden illness of one of the principals. Mr. Forsyth saw the prima donna in the motor-car, but it had passed before he could open up conversation. Instantly he had the cab turned round and gave chase. As luck would have it there was a block in the traffic at Westminster Bridge and the motor-car was overtaken in consequence. When a London cabby overtakes a motor-car, which of the two should be prosecuted for furious driving?

Delays Unnecessary.

DOCTORS have not exhausted their interest in the motor-car, and our medical contemporaries can rely upon several columns of readable matter upon the subject every week. Dr. Edward Phillips, of Coventry, is the latest contributor on the subject, and he confesses he is "thoroughly tired

of the stable and the trouble of horse keeping." Dealing with the suggestion often made that intending automobilists should wait until perfection is attained, he says:—"These remarks seem very sensible; but, whilst waiting for perfection in the cars, are we not wasting our best days, and permitting others to take part in the most fascinating sport and recreation? Should we not take the car of to-day, with all its imperfections, become masters of its faults and vagaries, and have at our disposal a willing 'horse,' capable of making long or short journeys, provided it be kept in proper repair?" This is certainly the attitude that will give greatest satisfaction to the average man and do more than mere dilatoriness to bring nearer the day of perfection. As experiences are accumulated and knowledge grows, manufacturers will be able to produce a car that embodies all the many good qualities that are regarded as essential.

Motorists and the Rates.

SUBJECT to the taxes of the land, and having to pay licence fees, as well as occasionally contribute to the revenue of the legal branch of the Civil Service, motorists ought to think themselves good contributors to the Exchequer. But now comes the suggestion that, because railways bear local burdens so far as their lines run through the areas of county and district authorities, motor-cars should pay something to the rates of the local authorities upon whose highways they run. The idea is a capital one for further harassing the new industry and for increasing the expenditure of local bodies in securing the addition of a few pounds to the rates. Probably the next notion will be that the driver of a motor-car shall pay one shilling to the parish council through whose area he passes. In this way two or three pounds a day could be extracted from the touring motorist, in addition to the sums that the ingenuity of hotel proprietors can persuade from his pocket. The extension of the scope of present annoyances can be made to illimitable lengths—and even then the prejudiced person will not be satisfied. When not quarrelling with motor-cars he will grumble about bath-chairs, perambulators, and less speedy conveyances.

A Pinnacle of Fame.

THE alleged excessive speed of motor-cars, thirty to forty miles an hour round the corners of Piccadilly, is proving a pinnacle of fame up which previous unheard-of M.P.'s vie with one another in the struggle to plant their banner topmost. Quite unconsciously one of these not too well informed gentlemen actually put in a plea for the motorist by asking if the legal speed limit of 14 miles an hour could not be enforced by the police. Mr. Ritchie, who is not given to rash statements, replied that the police made every effort to deal with the matter.

What is Accommodation?

A CASE of considerable interest to inn-keepers, and travellers, too, has recently occupied the attention of the Redhill County Court. The plaintiff had the misfortune to find himself belated with a broken-down motor-car at 1.30 on a wet morning. Accommodation was asked for at an inn at Horley, but refused, on the ground of the inn being full. Plaintiff proposed to pass the rest of the night in the coffee-room, to which mine host would not consent, the result being that the motorist wandered about for several hours in the rain before finding accommodation, and was laid up with rheumatism. Hence the action for £25 damages. Having heard the evidence on both sides, his Honour, Judge Martineau, deferred judgment. Presuming the inn to have been full as far as sleeping accommodation was concerned, the legality of refusing a traveller, well conducted and willing to pay, the right to remain in a public room is doubtful. Whatever the judicial decision may be, we cannot think that mine host has earned for his inn that reputation for hospitality which has for generations been the unchallenged boast of the English hostelry, no matter how lowly.

LONDON TO CANTERBURY.

A BRIEF account of a short run on a York *tonneau* car with 6½ h.p. Aster motor may perhaps be interesting to others who, like myself, attach real value to performances under normal conditions and none to racing or record attempts for advertising purposes only.

With the trusted *mécanicien*, Pugh, at the wheel, and Mr. Smith and myself, with considerable luggage on board, we started at 4 p.m. The traffic at this time (Saturday) was heavy, and some small trouble was experienced with busmen and cab drivers. One of the former, down Camberwell way, blocked us for half a mile, then suddenly pulled up, with us a yard in the rear, without warning. But our alert driver knows the busmen's ways, and a smart appeal to the emergency brakes averted the danger.

Carefully through Lewisham, with always a warning hoot as we approached many restive horses and with a due appreciation of three children in a pony trap, we made our way with never a thought to the engine. This made its presence heard with somewhat unnecessary assertiveness, but this was easy to forgive on account of the splendid way it did its work, and also because when on the second or third speed no vibration was noticeable. All hills, till Gravesend was reached, were taken without effort, the change of speeds being made perfectly, but just how much was due to the excellence of the car and how much to the driver is impossible to say. Probably it was a case of a good car properly managed. Rochester's narrow and tortuous ways were run through as if they were country roads, although crowds of people made them the footways.

Then came the long pull up Chatham hill. Will she take it? "Like a bird!" said Pugh. And so she did. Time, 6.5 p.m. We felt pleased—albeit thirsty—the worst part of the journey without a stop. Then we made the first stop to adjust a valve, but were off again in a few moments. We sped along towards Rainham, making an adjustment of the brake rod whilst travelling, as we were anxious to reach our destination.

Then a glorious run through the hop-fields, keeping to the legal limit except when we couldn't resist the temptation or no policeman appeared in sight. We failed not to give distant warning on approaching the many unattended vehicles we met, but were invariably scowled at and sworn at for our pains. Sittingbourne was well in sight, and the car running so fast that we had to keep well muffled up, when "puncture" shouted a kindly-disposed pedestrian. Yes! sure enough, a back tire was as flat as a pancake! Mr. Smith and I had visions of a night out, but our *mécanicien* was immediately on his mettle. Jacking the car up on a box, the tire was off almost before we had found the repairing kit. Luckily it was a Clipper Michelin. "Not quite a puncture?" said a bystander. Oh, no! only half a ploughman's boot-heel tip actually imbedded in the inner tube. Do not hurry over a repair of this kind. Let it be thoroughly and permanently done, or trouble is bound to ensue. So, taking a full allowance of time, the tire was made equal to new, and running into Sittingbourne we completed the job with Mr. Cleaver's long pump. Time, 8.30. The petrol tank was not empty, but we filled up here to avoid having to do so in the dark. We found we had run forty-six miles on just under two gallons.

Thence a splendid run was made in the gloaming to Canterbury, which was reached at 9.25 p.m. Our net running time was 4 hr. 10 min., and, considering the road, we all felt we had done well. The luggage carried weighed fully 1 cwt., the passengers averaging 10½ stone each. Not a single dismount occurred on any hill, and the nearest approach we had to hurting anything was a bird caught on the radiators. Much unnecessary noise appears to be made by the bonnet. This applies, I believe, to all cars. Probably a seating and lining of felt might be advantageous. C. JENNER.

THE 1901 American Automobile Show is to be held in Madison Square Garden, New York, from November 2 to 8 next. The Show will be held under the auspices of the Automobile Club of America, which, following the example set in this country, has decided to abandon the demonstrating track.

The Paris - Berlin Automobile Race.

BY AUTOMAN.



(Concluded from page 346.)

LAST week I gave the readers of the *Journal* a detailed account of the first day's run and incidents, and a short resume of the completion of the race. I propose to take up my story again at Hanover, at dawn, on Friday, the 28th ult., but before quite bidding adieu to the first lap, reference may be



THE DUKE OF RATIBOR AT BERLIN, WITH THE WREATH FOR THE WINNER.

made to the unpleasant experience which occurred to Schmit, who was acting as *mecanicien* to Mr. Jarrott on his Panhard. Schmit, by the way, is one of the fitters employed by Mr. Jarrott's firm, in London, and is no doubt known to many automobilists. The incident happened when coming round a sharp curve whilst the car was going for all it was worth. Schmidt, unused to the high speeds, flew off the car at right angles to it, landing in the ditch. Fortunately, he fell easily, and, apart from a few slight bruises, came off uninjured. His experience will, however, make him cling on tight in future when rounding corners.

Hanover is quite another style of city to Aix-la-Chapelle. It lies flat, and has large public buildings and broad squares and avenues, and looks solid and wealthy. I did not, however, feel much inclined to study its beauties at six a.m., and I walked over from the station to Kasten's Hotel with M. Falconnet, of Compound tire fame, who had joined the cavalcade by the Nord Express from Paris. I got the last vacant room in the hotel, and went to bed for a couple of hours. The control was fixed about six miles out of the town, so after leaving my card on Herr Tischbein, of the Continental Caoutchouc Company, I hired a carriage and set off with another Press correspondent. After driving for miles and miles, I managed to induce my companion, whose German was more fluent than mine, to cross-question Jehu as to the way he was taking us, and we found, to our surprise and disgust, that the main road had been closed for traffic since the early hours of the morning, and we were going about three miles round. The extraordinary precautions, however, did not end here, for we came to a dead halt in front of a stout policeman, and neither argument, threat, nor the display of official badges could alter his "Nein, nein," and we had to trudge about a mile through the dust and in the hot sun to get to the control.

Thousands of people were already assembled by noon around a triumphal arch consisting of two poles and a piece of calico with the word "Controle" printed on it. There was also a hand stand, a rickety tent on a staging with a table and three chairs for the Press, and two tents for refreshments. This little "camp" was situated at the top of a rise in the middle of a cornfield, with the road from Paris leading up to it and that to Hanover down on the other side.

Round the control was gathered the same party as at Aix-la-Chapelle with the addition of many German automobilists, including the Duke de Ratibor, president of the German Automobile Club, Herr Tischbein, the Mayor of Hanover, and some other notabilities. There was, however, no attempt at any accommodation for the illustrious spectators and we were all huddled in the dust and only protected by our badges from the repeated violent onslaughts of the police commanded by a very irascible officer, who every now and then literally seized an advancing spectator in his arms and flung him into the ditch, till I wondered which was the more dangerous, an automobile at sixty miles an hour or an interview with this zealous official.

But now the telegrams began to roll in. First of all from Cologne at seven a.m. came the news of the arrival of Fournier, followed by Girardot, M. Farman, Voigt, Charron, Pinson, Leys, Lemaitre, Rolls, Degrais. I vainly searched the list for Jarrott and Harry Farman, and at 7.16 the latter was signalled from Cologne and at 7.47 the former. Düsseldorf telegraphed at 7.30 that Girardot held the lead followed by Fournier, one minute after, and then Voigt, Maurice Farman, Pinson, Axt, Lemaitre, Knyff, Harry Farman. Rolls had fallen back at Cologne, one of the supports of his water tank having given way and the tank leaking. Jarrott was busy mending punctures and he had lost an inner tube out of the box at the back of his car and had to do some patching until he could borrow another. Girardot on his light Panhard was improving his position and Antony on the Mors car, which Levegh should have driven, was coming up splendidly. Fournier passed Münster at 10.20 and had regained the lead by 25 minutes. Girardot followed and then came



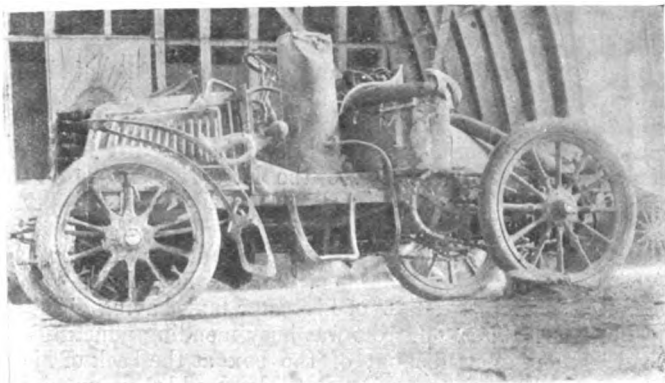
AFTER THE RACE—AT BERLIN.

(The group includes Prince Frederic Charles of Hohenlohe, Prince Henri of Pless, Captain Laycock, Fournier, and Charron.)

Maurice Farman, Voigt, Knyff, and Antony gaining steadily. Fournier passed Bielefeld at 12.10 leading, and then the telegrams lost their interest and every eye was turned down the road. A few false alarms and then a bugler gave a warning call repeated along the road,

the police rushed about yelling "Zuruck" ("Keep back"), a puff of dust appeared, the crowd separated and in rushed Fournier at 2.13, looking fresh and smiling. The band played a welcome, hands were stretched out to greet him, and I took a snap shot in company with a dozen other amateur and professional photographers. M. Mors looked delighted and there was general enthusiasm all round. Then there was more than a half hour's pause until René de Knyff came dashing up to the control hatless as usual, and with hair and beard simply caked with dust. Two minutes later up came Antony, who certainly made the most remarkable run of the day. Girardot came in two minutes later and then Maurice Farman, Giraud, Chauchard, and Heath. Harry Farman arrived eleventh, and Jarrott, absolutely as black as a coal miner, twentieth. Rolls arrived at 7.5. Louis Renault made a splendid run on his single-cylinder car, reaching Hanover seven minutes before Jarrott.

Whilst I was preparing a telegram in my room in the hotel Jarrott turned up and told me what a bad day he had. At 9.30 we joined the banquet offered to the *chauffeurs* and followers of the race by the Continental Caoutchouc Company, where we met Dr. Lehweß just arrived from London. The banquet was interminable, a speech with every new dish, and it was only attended by a comparatively few *chauffeurs*; the greater part were too fatigued or did not care to come in their working clothes. After the banquet I sat with Mors, Voigt, Maybach, and several others, and turned in at 2 a.m., giving orders to be called at 4.



HOWESTE (PANHARD) REACHED BERLIN.—A NEW POSITION FOR WATER TANKS.

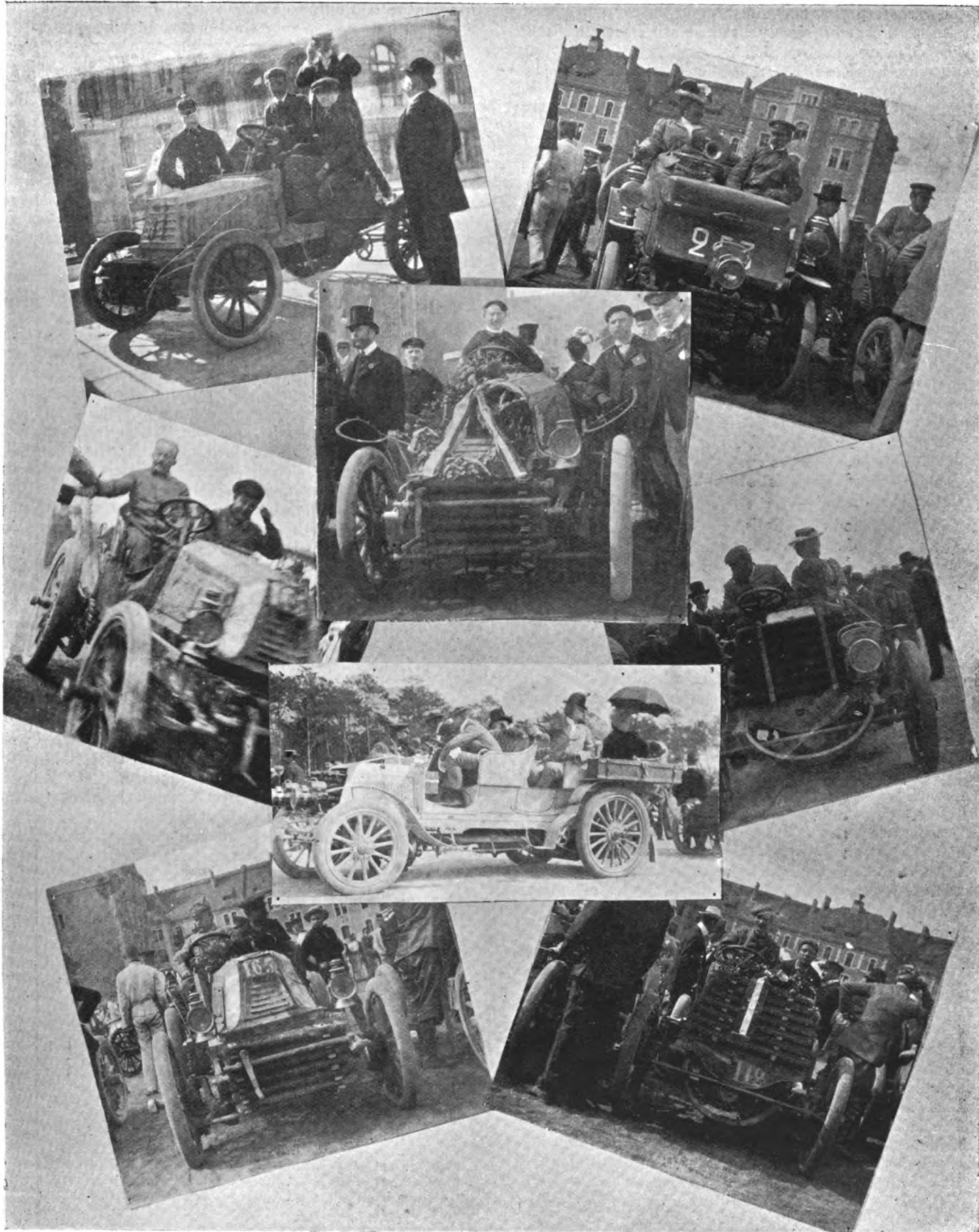
Meantime the tourist section, which I deserted at Reims, on Sunday, June 23rd, had been jogging comfortably along a different route to Berlin without any particularly exciting incidents, receiving wherever they arrived on German soil quite extraordinary receptions. Their cars were filled with flowers; cherries, strawberries, sandwiches, champagne, and even sausages were offered to them every time they stopped anywhere, and in the evenings there were entertainments organised for them, at which the native *Gretchen*s vied with each other for the honour of dancing with a French *chauffeur*. The running of the cars was as regular as in our 1,000-mile Trial, and with a few exceptions the caravan arrived at Potsdam on Friday night, and on Saturday morning drove on to the Berlin West-end Racecourse, there to await the arrival of the racers.

Saturday morning dawned grey and uninviting, and it required a large dose of the sense of duty to get me out of bed to see the start of the last lap, in which 58 cars, "all that were left of the gallant 110," were to make their final struggle for fame. Dr. Lehweß had promised to share a carriage with me to drive out to the start, but I had to use violent means to get him out from between the sheets; however, we arrived at the "park," or tent-like enclosure, where the cars had been stored just at five o'clock, and found outside a crowd of *chauffeurs*, *mécaniciens*, and fitters clamouring for admittance in order to attend to their machines. My official badge enabled me to pass in, where I found the Comte de Chasseloup-Laubat, Baron Molitor, and the indefatigable M. Tampier, the timekeeper of the

A.C.F., who, seeing at Aix-la-Chapelle the weakness and inexperience of the Germans in the matter of chronometers, had followed the race to lend his help, without which there would have been a complete muddle in the matter of records. The poor fellow spent five nights without going to bed. Soon it was time for Fournier and his satellites to come in and get the car ready. Then followed a scene of indescribable excitement. For some reason or other there had been a mistake; his time was up for starting and he was not ready. Fournier danced round his car like a madman, begging his *mécanicien* to start up. Whilst the *mécanicien* was turning the starting handle, a fitter was adjusting the lubricators, another jamming spare tubes into a box at the back, and a third was screwing down the bonnet. With a leap worthy of the "barrel jumper," Fournier sprang into his seat—vrrruun, vrrruun went his engine and he backed out into the main alley, put in his forward gear, and disappeared down the road to Berlin. René de Knyff next attracted attention. A fireman, who was acting as a kind of ticket collector wanted to keep him from entering the "Park," but he did not try it twice. I saw Antony start, and judging from his performance between Aix and Hanover, I thought he might be the winner. Then my time was up and I jumped into a carriage and set off to catch the special train which the Continental Caoutchouc Company had placed at the disposition of the followers of the race, and for which Herr Tischbein had kindly given me a ticket. The special train left at six o'clock, but, as it went by a more direct route than the cars, it was timed to arrive in plenty of time to allow the passengers to see the first of these arrive, and so it turned out, for we reached the racecourse (the Trabrennbahn, Westend) more than an hour before the first car. The course was already crowded with fashionable people, and M. Ernest Cuenod, the President of the Swiss Automobile Club, pointed out to me successively the Duke of Mecklenburg, Prince and Princess Henri of Pless, Prince Frederic Charles of Hohenlohe, the Duke of Ujest, the Duke of Ratibor, the Prince of Thurn and Taxis, Count von Talleyrand-Périgord, Madame Fritz Friedlander, Count and Countess de Moye, Baron Zuylen, and a host of other well-known people. I also saw Messrs. Mors, Darracq, Michelin, Lemoine, Tischbein, Panhard, and a great many other Frenchmen interested in the manufacture of motors and their accessories. The familiar voice of Mr. T. B. Browne also greeted me, and I went off to pay my respects to his charming wife and sister-in-law. I searched vainly for their inevitable Panhard, but learned that they had torn themselves away from it and came by train to Berlin to see the finish of the great race.

The course was kept by a company of soldiers of the Imperial Guard, who joined hands to keep the people back on either side, and it was laughable to watch the strategy employed by the photographers, amateur and otherwise, to dodge the soldiers and, most particularly, the watchful and fussy Count von Talleyrand-Périgord, who was very busy trying to clear the course. Two military bands played at intervals, but gradually, as the telegrams began to arrive, the bands were forgotten, and the excitement began to be intense as Fournier was signalled, first at Brunswick, with Knyff, Girardot, Maurice Farman, and Brasier close after him; next at Magdeburg, with Maurice Farman, Girardot, Knyff, and Brasier following; then at Brandebourg in the same order, except that Maurice Farman has fallen back to the fifth place, till at last came a wire from Potsdam to say that Fournier had passed at 11.5. The excitement then knew no bounds, and we were all on tenter-hooks to see whether Fournier's luck would hold out or a treacherous puncture, or any one of the hundred and one accidents to which all machines are liable, would nip his success in the bud. There were one or two false alarms and then at last, amidst cries of "Achtung, Zuruck," and volleys of cheering in the distance, we saw a little black object turning round the curve of the racecourse. I could only see the front wheels, the radiator, and the curved front axle against a puff of dust. It grew larger and larger, and in a minute had passed the winning post and pulled up dead at 11.46, whilst the band bursts out with the Marseillaise. It was No. 4, Fournier. Then the crowd swayed and surged, and the car seemed swallowed up by a sea of humanity. The

THE PARIS-BERLIN RACE.



COLLIN ON SIRENE CAR AT BERLIN.

MADAME GOBRON ON GOBRON-BRILLIÉ AT BERLIN
(Tourist Section).

FOURNIER—THE WINNER AT BERLIN.

BRASIER (MORS), ARRIVING AT BERLIN.

CHAUCHARD (PANHARD), ARRIVING AT BERLIN.

THE BARON DE ZUYLEN'S 20 H.P. PANHARD TOURING CAR.

BRASIER (MORS) AT BERLIN.

HARRY FARMAN (PANHARD) AT BERLIN.

excitement turned to delirium, a hundred hands were stretched forth to find Fournier's, and an enthusiastic Paris tailor, who had followed the race from Paris, climbed up on the car and kissed his dusty face. Fournier simply beamed with pleasure and looked as fresh as possible, as, loaded with wreaths, he was lifted shoulder high by the crowd, and carried in triumph to the controllers' stand, where he "signed on" for the last time. It was a thrilling moment and one that the spectators are not likely to forget.

After a half hour's pause Girardot arrived and received an ovation. He kept up his reputation as "the eternal second." Twenty-seven minutes later Brasier came in and we had only a minute and a half to greet him, for René de Knyff was close on his heels at 12.34. Then followed Charron at 12.43, with Maurice Farman on board. He had picked him up six miles from the finish, where Farman's car collided with a tourist's which backed across the road in front of him. He was uninjured, but was obliged to abandon the race although so near the end. Harry Farman arrived at 12.47, five minutes after Charron, bringing his brother's *mecanicien*, who was bruised and shaken by the collision. Then came Axt, Houillier, Chauchard, and, at 1.19, Jarrott, who made splendid time from Hanover. Louis Renault arrived less than a minute later, winning the voiturette class, and Osmont, on his tricycle, headed his class, five minutes later, at 1.25. After Heath came Giraud, the winner of the light car class, followed by Werner on the first German car, a Mercedes. He received a special ovation, the band playing the German National Anthem.

There being no news of Rolls, I took a stroll behind the grand stand in search of some lunch, and met Pinson, who told me of his accident at Meiderich on Friday. He had passed Cologne and Dusseldorf fifth, and was traversing a little village on his third speed, when on easily rounding a corner he found himself immediately confronted by an electric tram in the middle of a narrow street and a compact crowd of spectators filling the road on either side of it. He saw at once that he could not pull up in time and must take a header either into the tram or into the crowd, so he jammed both brakes on and steered for the tram, smashing into it and damaging both it and his own car, but getting off with a sprained wrist and injuring no one. A little further on I found Fournier, Charron, and Laycock (the owner of Fournier's winning car), sitting, refreshing themselves, with two or three others. I thought the party would be interesting to the readers of the *Journal*, so, whilst chatting to Fournier, I took a snapshot at them. One of the party whom I did not know came round to my table and I asked him for his name and that of his friend. He wrote in my pocket-book Prince Frederic Charles of Hohenlohe and told me his neighbour was Prince Henri of Pless.

At three o'clock the hooting of the horns from many cars announced that the procession was being made up, and Jarrott kindly invited me to an improvised seat on his car. We started off through the lovely Thiergarten to the Brandenburg Gate, where by special permission from the Kaiser the middle gate was opened to us, and down the famous Unter den Linden, along Friedrichstrasse, and to the Alexander Barracks. All along the way the streets were lined, the balconies and windows crowded, hats and handkerchiefs were waved, and cheers resounded as, after more than thirty years of coldness, the peaceful French invasion of Berlin became an actual fact. A strange incident occurred between Fournier and Girardot. The former broke his chain between the racecourse and Berlin, and it was the luck of the latter, "the eternal second," to lead the racers into Berlin.

The Deutsche Automobil Club had arranged a very complete programme for the entertainment of the visitors, and a little book was handed to each of us with tickets for a dinner on Saturday at the Kaiserhof, a stall at the opera on Sunday, a lunch at the Club on Monday, a steamer trip on the Wannsee, a concert, and a supper. At the dinner four hundred people were assembled, and the healths of the Kaiser, the President of the French Republic, the King of the Belgians, and the other prize-givers were given.

I will conclude my story with a few incidents of the race. Antony started from Hanover classed first for the second day's run, and second only to Fournier in the classification of the two first days, and with a very good chance of winning. Just outside Hanover he got his change-speed lever jammed between two speeds and in his excitement disabled his car and had to abandon the race. Degrais, on his Mercedes, came to grief about twelve miles from Hanover. He was coming to a sharp curve just after Gilles Hourgières and, blinded by the dust, he did not see the turning, but thought he distinguished an avenue between the trees right ahead, and plunged at a terrific speed over the ditch and into a field, where his left wheel caught a tree. Degrais was thrown and only bruised, but his *mecanicien*, who turned out to be his friend and the son of the Austrian Baron Schwetter, was thrown violently against the tree and severely injured. Fortunately the next car to come along was a Brillé in which Dr. Saintau was a passenger, and he attended to the injured man and conveyed him to the hospital in Hanover.

Teste, who was second in the light cars, had two accidents, from which no one but an old tricycle rider ready for any emergency could have recovered. Shortly after starting from Paris he broke his back springs, repaired them again, and came along. This was, however, not the worst; the support of his water tank broke and let one end of the tank down on the ground, where a hole was knocked into it. Nothing daunted, Teste uncoupled the tank, stood it up on the floor of the car, hole upwards, and coupled it up again, and thus he came into Berlin with his *mecanicien* holding the reservoir on and keeping the water from jolting out with his handkerchief. I managed to get a snapshot of the car with the reservoir in its novel position.

Rolls's troubles began at Cologne, and were somewhat similar to Teste's. One support of his tank broke, and then the others gradually gave way. He and young Crompton tied it up with wire, but it bumped on the axle, which knocked holes into it until he only dare go half speed, and then, to add to his miseries, the pin came out of the half-speed gear wheel, and, as he said to me at the dinner at the Kaiserhof, "he felt like doing the next automobile race to Germany in the train." He reached Berlin on Saturday afternoon at 4.47. Rivière, on a Werner bicycle, stuck to it bravely, though he was far behind. He arrived in Berlin in the early hours of Sunday morning, and, finding no control, rode boldly into the barracks of some regiment and got them to take his time. Madame du Gast, the only lady competitor, got through in grand style and was classified.

Forty-seven out of 110 competitors arrived in Berlin. In the heavy-car class there were forty-two starters, twenty-two arrived; in the light-car class there were forty-eight starters, fifteen arrived; in the voiturette class there were eleven starters, six arrived; in the motor-cycle class there were nine starters, four arrived.

Below I give the final classification of the three days' race:—

CLASS A.—HEAVY CARS.

		Total time. h. m.			Total time. h. m.
1.	Fournier	16 5	12.	Voigt	20 39
2.	Girardot	17 7	13.	Lays	21 28
3.	R. de Knyff	17 11	14.	Werner	22 1
4.	Brasier	17 42	15.	Van der Heyden	22 7
5.	H. Farman	18 21	16.	Clément	22 21
6.	Charron	18 51	17.	Lemaitre	23 20
7.	Axt	18 58	18.	Rolls	24 1
8.	C. Jarrott	19 34	19.	Mme. du Gast	26 1
9.	P. Chauchard	19 36	20.	Brillé	29 20
10.	Gilles Hourgières ..	19 38	21.	J. de Crauhez	29 33
11.	E. Heath	19 43	22.	de Turkheim	39 41

CLASS B.—LIGHT CARS.

1.	Giraud	19 51	9.	Mercy	25 49
2.	Teste	22 34	10.	Dernier	27 46
3.	Berteaux	22 35	11.	Haban	31 7
4.	Sincholle	22 46	12.	Collin	33 38
5.	Edmond	23 32	13.	Rigolly	35 58
6.	Kraeutler	25 6	14.	Peschard	37 59
7.	Roland	25 12	15.	Turgan	38 49
8.	J. Gondoin	25 46			

CLASS C.—VOITURETTES.

	Total time.		Total time.
	h. m.		h. m.
1. Louis Renault	19 31	4. Merville	34 31
2. Grüs	22 58	5. Lamy	35 40
3. L. Morin.....	29 7	6. Delisle	37 29

CLASS D.—MOTOR-CYCLES.

1. Osmont	19 15	3. Cormier.....	22 23
2. Bardeau	21 4	4. Bardin	22 38

Fournier wins the Kaiser's Cup, the prizes of the Grand Duke of Luxembourg and of the City of Hanover. Maurice Farman wins King Leopold's Cup for the best time to the Belgian frontier. Giraud wins the prize of the Grand Duke of Mecklenburg. Werner wins the Sèvres Vase of President Loubet for the first German car. L. Renault wins the prize offered by M. Pierre Baudin.

The best times for the whole race irrespective of class are as follows:—

			Hrs.	Mns.	Miles per hour.
Fournier ...	Mors ..	...	16	5	44.12
Girardot...	Panhard	...	17	7	43.40
R. de Knyff	do.	...	17	11	43.24
Brasier ...	Mors ...	...	17	42	41.97
H. Farman ...	Panhard	...	18	21	40.49
Charron ...	do.	...	18	51	39.41
Axt ...	do.	...	18	58	39.08
Osmont ...	De Dion tricycle	...	19	15	38.59
L. Renault	Renault	...	19	31	38.07
Jarrott ...	Panhard	...	19	34	37.97
Chauchard	do.	...	19	36	37.90
Hourgières	Mors ...	...	19	38	37.86
Heath ...	Panhard	...	19	43	37.68
Giraud ...	Light Panhard	...	19	51	37.43

On Sunday next the Yorkshire Automobile Club will hold a run from Bradford to York.

MOTOR-CAR and brake services from Lowestoft into the surrounding districts have again commenced.

THE first of the three large motor-cars built for the Scarborough service is expected at the end of the month or the beginning of August. The other two cars will be ready shortly afterwards.

THE engineering professors and students at the University College, Liverpool, are experimenting with a motor-car on behalf of the Road Traction Committee of the British Association.

A MOTOR-BICYCLE enthusiast writes:—"There is no question of the future of the motor-bicycle. It is a glorious invention, and, once thoroughly understood, there is nothing in the form of a bicycle half so delightful."

C. and A. MUSKER (1901), LIMITED, has been registered, with a capital of £100,000, to acquire the business of C. and A. Musker, Limited (incorporated in 1897), Liverpool, to carry on the business of manufacturers of mechanical, hydraulic, electrical, and other machinery, manufacturers of rolling stock, etc.

WHILST motoring with his wife and another lady, Mr. Summerson, of Darlington, was rounding a dangerous corner near Burdon, on the Saltburn road, when he saw a cyclist coming in the opposite direction on the wrong side of the road. Mr. Summerson steered to the other side to avoid a collision, and the cyclist did the same, the consequence being that both ran into the bank. The motor-car was upset, and its occupants pitched into the road. Fortunately, beyond a severe shaking and a few bruises, they were little the worse.

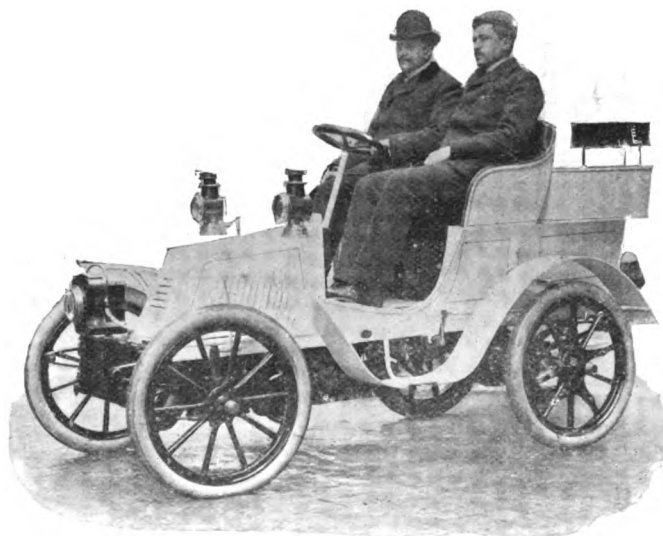
IN issuing their catalogue and price list, Weston Motors have some strong points to urge in favour of their light steam-cars. Foremost amongst these are noiseless running, absence of vibration and smell, elegance of design, and ease of manipulation. Trouble in starting is reduced to a minimum, a match only being necessary to set the fire going. This done, the car is ready for the road in five minutes, and the fire once set going is regulated from the driver's seat, as is also the supply of fuel and water. Attached to each of the four illustrations of cars contained in the catalogue is a useful specification, giving the length and breadth thereof, as well as height and weight and some interesting particulars of various other important parts.

THE "CHAINLESS" PETROL CAR.



WE are able this week to give an illustration of the new petroleum-spirit motor-car which is being introduced into this country by the Motor Trading Company, of 7, College Chambers, High Holborn, London, W.C. The vehicle is of French construction and is known as the "Chainless." The motive power is supplied by a Buchet double-cylindrical vertical motor of 12 h.p., set under a bonnet in the fore part of the frame. The ignition is electrical, while the cylinders are water jacketed, the circulation being maintained by means of a pump and radiators. Three speeds forward, ranging up to 34 miles per hour, and a reverse motion are fitted, the Panhard system of transmission being adopted. The gear is enclosed in an aluminium case, and there is but one side lever for the various speeds.

From the gear box a universally-jointed shaft conveys the power by means of bevel gearing direct to the rear axle. Ample brake power is provided, the hand-operated brake acting whether the car be running forwards or backwards. The road wheels are of the artillery type, shod with pneumatic tires, and the usual inclined wheel steering is fitted. The car, which is solidly built throughout, weighs complete 12 cwt., and its exceptionally long wheel base—6 ft. 6 in.—ensures stability on the road. Several forms of bodies can be fitted to the car, from the favourite *tonneau*, as illustrated, to the useful delivery van.



A similar car to the above as regards transmission gear, but fitted with an 8 h.p. Abeille governed motor, is also about to be put on the market by the Motor Trading Company.

WE learn that the 200 h.p. "Clarkson" liquid fuel burner, to which reference was recently made in these columns, has successfully passed its official trials, and been accepted by the London County Council.

THE Manchester Wheelers will hold a race meeting on the track at Fallowfield, Manchester, to-day (Saturday). Included in the programme is a motor-cycle competition, in which Mr. S. F. Edge and Mr. C. Jarrott will, it is stated, take part.

ON Thursday last week we formed part of the small audience present at a job-master's in Lamb's Conduit Street, London, W.C., on the occasion of the sale by auction of the 36 h.p. Pennington war motor and some accessories, in connection with the bankruptcy of Messrs. Pennington and Baines. The curious-looking vehicle, of which such great things were expected, failed to attract a large number of bidders, and although it was said to have cost £2,000 was knocked down for £100 to Mr. Shacklock, of Wolverhampton, late manager of the Humber cycle factory—now closed—in that town.

AN ELECTRICAL VEHICLE'S LONG DISTANCE RUNS.



THE British and Foreign Electrical Vehicle Company lately arranged a series of trial runs to demonstrate the practicability of electric cars. It is evident that the experience of the Chislehurst trials has been put to some use during the time that has elapsed since that competition, and the company's new car is certainly a great advance upon the "Powerful," both in respect to design and capabilities. The design of the body has been radically altered and instead of the two tiers of accumulators, with a driver perched on top of them with a single companion, we now see a graceful, boat-like body, with the accumulators arranged on one level and dispersed in two boxes, to give the least appearance of bulkiness. The number of the cells has been reduced from sixty to fifty, and a seat for two more passengers has been arranged behind the driver's seat and raised so that its occupants have a full view of the road over the driver's head.

The new car opened its career by demonstrating to the County Councillors the advantages of automobilism, and it was much admired at Sheen House, not only by the County Councillors, but what is perhaps of more importance to the company, the automobilists who were present on that occasion. On the 11th ult. the car made its first trial trip for a long



journey, and, as already reported, successfully covered 94½ miles, running throughout at an average speed of twelve miles an hour. This, we believe, constitutes a record distance for an electric car upon one charge of its batteries, since it beats the distance accomplished by M. Krieger, who recently covered eighty-nine miles. Since this date a number of runs have been made with a view to testing the running of the car over general average roads in the home counties. Perhaps the most trying run was made about ten days ago. The following is an account given us by one of the passengers on that occasion:—"At half-past ten we started from Northumberland Avenue with the intention of lunching at the 'Compleat Angler' at Great Marlow, if nothing happened by way of accident to prevent us. It was a pity that we did not know of the chaotic state of the Uxbridge Road. For some miles the permanent way for the new electric trams is in course of construction, and the road was a succession of pits and mountains, which tried the car most severely. However, the dead weight of the accumulators and the great length of the car kept her wonderfully steady. About twelve miles from the Marble Arch matters improved, and higher speeds could be used without constantly cutting the current and applying the brakes.

"After passing Gerrard's Cross and Beaconsfield, we took a sharp turn to the left, and before we had any warning we were sliding down a steep hill of about 1 in 10 with an atrocious

surface of loose flints and an ugly-looking ditch at one side. Not twenty yards of that hill went in the same direction, and here the guidance of a two-ton weight on wheels became a work of art. The value of the recuperation became evident, not so much on account of its putting back energy into the cells, but rather for its perfect braking action. The view across the Thames Valley was superb, but as the hill increased in steepness and the road narrowed to nearly the width of the car, and twisted and turned like a snake, one lost interest in the view, and began to wonder what would happen if the car drove through the hedge, and the other side happened to be hard ground. Just then a friendly cyclist pushing his machine up the hill, cried out to us as we slid past him that there was a dog-cart across the road lower down. The switch was thrown back quickly to the electric brake. The motors were short-circuited, and with the application of the foot-brake we came to a stop within a distance equal to the length of the car. With two wheels in the ditch we crawled by the dog-cart which monopolised the roadway, and most of us were not sorry when the valley below was reached.

"At the Compleat Angler, at Great Marlow, the white electric car created great interest. No one would believe it had come from town. 'Electric cars are only good for wood-paving and asphalt, and twenty miles on one charge.' 'How did you get here?' were the general remarks. 'How are you going to get up the Bisham hill?' was however the more interesting question to us, and after the best served lunch to be had in the Thames Valley we started to consider the matter experimentally. It is a long pull up the Bisham hill and calculated to try most motors and batteries. Sixty amperes to climb it at eight miles an hour on the fourth speed proved most economical. On only one short stretch of the hill where the gradient touched 1 in 8 did the ammeter read over sixty, and then the motors gave a dull note and braced themselves to the work, and our two tons steadily and deliberately forged upwards. Then, as the crown was reached, they gave a sigh of relief as their speed increased, and the ammeter reading fell back to the normal thirty. A more satisfactory test could hardly have been applied. The back of the journey had been broken and still the batteries gave close on two volts per cell on load, and we knew that the thirty odd miles home was an easy task to perform. The only incident on the return journey was the picking up of a 3in. nail by one of the back tires, which necessitated a visit to a coachbuilder's yard to repair the puncture, and at seven o'clock we were again in Northumberland Avenue, having completed about seventy-five miles of average road."

We understand that several runs varying from seventy to ninety miles have since been made under all sorts of conditions, and the only trial remaining to finally demonstrate the value of the electric car for general purposes is a thousand mile run through England, taking towns with charging stations every seventy-five or eighty miles. The British and Foreign Electrical Vehicle Company have, we hear, such a test under consideration and the result will be watched with considerable interest. The cost of the charge for each run of, say, ninety miles, is, we are informed, 6s. 3d., which works out at about ¾d. per car mile, a reasonable rate when the comfort and ease of the travelling is taken into consideration.



THE Motor-car service which has been established between Bromley and Biggin Hill, Cudham, Kent, by the owner of the Aperfield Court building estate, Mr. F. H. Dougal, is proving very popular, and considerable numbers are daily availing themselves of the opportunity which is thus provided of "motoring" out to what is undoubtedly one of the most delightful and most salubrious parts of the district. The vehicle is a large one, and invariably carries its full complement of nine passengers. The "going" is exceedingly pleasant and comfortable. The object of the vehicle is, of course, to bring still more prominently before the notice of the public the claims of the Aperfield Court estate as a desirable investment, and already the owner has found this object is being achieved.

THE AUTOMOBILE CLUB'S HILL-CLIMBING TRIAL.

DASHWOOD HILL, on the Oxford Road, was again the scene, on Saturday, of a hill-climbing trial promoted by the Automobile Club. Whereas, however, the previous trial on May 2nd was confined to members, the present event

Thick dust was the chief accompaniment of the outward journey, and the rear occupants of low cars with *tonneau* bodies had had enough to invest them with an appearance of premature age by the time they reached High Wycombe and halted at the Red Lion, or proceeded straight to the foot of the hill, four miles beyond. Some inconvenience was also caused by the presence on the road between Hanwell and Uxbridge of a number of new



SNAPSHOTS AT DASHWOOD HILL.

was open to all comers; it was also a hill climb pure and simple, there being no tests of petrol consumption, and no non-stop runs. Though it was expected to be a somewhat quiet event, there was a fair number of entries and a goodly muster of non-competing cars, whose occupants had come to enjoy the luxury of seeing the competitors struggling up the hill.

electric trams, indulging in preliminary canthers, minus passengers, in view of the opening of the line four days later.

The competitions were timed to start at 5 o'clock, but Mr. C. Johnson, the Club Secretary, drove down earlier in the day in order to make the necessary measurements and post the flags. With him in his Darracq were Mr. W. Worby Beaumont,

THE GENERAL AUTOMOBILE AGENCY, D. Farman, Man., Garage open day and night, all cars in stock, 100-104, Long Acre, W.C.

Mr. R. B. B. Bruce, and Mr. C. L. Freeston. Among other cars which were in the yard of the Red Lion in the early afternoon were the splendid new 16 h.p. Daimler, driven by Mr. J. S. Critchley, with Messrs. Cordingley and Stanley Spooner as passengers, Mr. C. Cordingley's 6 h.p. M.M.C. Panhard, with Mrs. Cordingley and Miss Purchasehouse, Mr. R. E. Phillips's new 12 h.p. chainless, and Mr. Mark Mayhew's 7 h.p. Panhard. Until it was known that the big Daimler was a 16 h.p., and not a 12 h.p., it appeared likely that the light Chainless would make the fastest time up Dashwood, as it has almost a voiturette body, and none would suspect that so powerful a motor was fixed beneath its bonnet. Later on, however, the presence of the 50 h.p. Napier made itself felt, or rather heard, in the neighbourhood, and there was no longer room for speculation as to who would mount the hill in speediest fashion.

Clustered at the foot of the hill, or driving to and fro, the following cars were to be noted, irrespective of those in the list of competitors hereafter enumerated:—Mr. Noel B. Kencaly's 10 h.p. Delahaye, Dr. R. Horner Wyeth's 6 h.p. Boyer, Mr. Montague Napier's 3½ h.p. Renault, Mr. T. B. Browne's 6 h.p. Panhard, Mr. J. Allen's 6 h.p. Daimler, driven by Mrs. Allen, who is now an accomplished *chauffeuse*, Mr. F. Howard Mercer's 5 h.p. Peugeot, Mr. W. H. Astell's 7 h.p. New Orleans with *tonneau* body, Mr. Billing's 4½ h.p. Clement Panhard, Mr. C. W. Brown's Pieper, Mr. Lyons Sampson's Benz, Mr. Illingworth's "Torpedo," an Orient Express, Mr. E. de Wilton's Ariel tricycle, Mr. E. Baynes's 6 h.p. Mors, Mr. Walter Munn's De Dion voiturette, Mr. Cecil Edge's De Dion voiturette, Mr. Cheel's Ariel tricycle and trailer, and Mr. A. Heard's Century tandem. The latter was entered for trial but arrived too late, owing to tire trouble on the way down.

As for the competing cars, they were as follows, the selling prices and other details being also appended:—

1. Mr. C. Friswell's 7 h.p. Peugeot (two cylinders); driven by the owner. Price £400. Two passengers.
2. Mr. Owen O'Connor's 7 h.p. Peugeot (two cylinders). £400. Two passengers.
3. Mr. A. E. Cohen's Weston Motor (steam, two cylinders), 5.7 h.p.; driven by the owner. Price £180. Two passengers.
4. Roadway Autocar Company's 4½ h.p. Renault (one cylinder); driven by A. Bushell. Price £250. Three passengers.
5. Mr. Roger H. Fuller's 4½ h.p. De Dion (one cylinder); driven by the owner. Price £250. Two passengers.
6. Mr. R. E. Phillips's 12 h.p. Chainless (two cylinders); driven by Mr. W. H. Kitto. Price £272. Two passengers.
7. Mr. Mark Mayhew's 7 h.p. Panhard and Levassor (two cylinders); driven by the owner. Price £436. Four passengers.
8. Mr. S. F. Edge's 50 h.p. Napier (four cylinders); driven by the owner. Price £1,500. Two passengers.
9. Daimler Motor Company's 16 h.p. car (four cylinders); driven by Mr. J. S. Critchley. Price £1,150. Four passengers.
10. Locomobile Company of America's steam car (two cylinders), 5½ h.p.; driven by A. Ginder. Price £190. Two passengers.
11. 8 h.p. Panhard and Levassor (four cylinders); driven by Mr. J. Lawson. Price £710. Four passengers.

Commendable punctuality was observed, Mr. Johnson, who was assisted by Mr. Lyons Sampson and Mr. R. E. Phillips, getting the first car away at five o'clock, the others being despatched at brief intervals. Mr. Phillips "clocked" at the starting point, and Mr. Worby Beaumont and Mr. C. L. Freeston at the finishing line, which was indicated by two flags set 120 yards to the north-east of the bench mark on the gate-post. The total rise which the cars had to make was one of 219 feet in 3,350 feet, the average gradient being 1 in 15.3, out of which, however, 1,110 feet had an average of 1 in 10.37. It may be said that the hill looked particularly tough to tackle on Saturday, its white surface being thrown up into strong relief under the blazing sun, and seeming to intensify the steepness of the ascent. Ploughed, moreover, into ruts and rubble by the skids of descending carts and coaches, its condition was vile in the extreme, and it was deplorable to see a main road so mauled and mangled.

Nevertheless, the cars made excellent ascents, and even the

least powerful of the eleven displayed its conspicuous superiority over the horse. Each car had to make three separate ascents, and the figures given below represent the mean time in each case. As no speeds in excess of the legal twelve were officially recognised, the actual capabilities of those exceeding that figure cannot be indicated:—

No. 8. Napier ...	12 miles per hour.
No. 10. Locomobile ...	12 "
No. 9. Daimler ...	12 "
No. 6. Chainless ...	12 "
No. 3. Weston ...	12 "
No. 1. Peugeot ...	10.5 "
No. 11 8 h.p. Panhard ...	10.1 "
No. 7 7 h.p. Panhard ...	10 "
No. 5 De Dion ...	8.9 "
No. 4. Renault ...	6.3 "

The average of No. 2 car is not given, as on the third ascent it had to stop to adjust an exhaust spring. It should be added that only standing starts were allowed, but the steam cars were permitted to get up full steam.

MR. H. W. WHIPPLE, of the Automobile Club of America, has ordered a 25 horse-power Napier car.

MR. KEARTLAND MOLE, of St. George's Crescent, Liverpool, is using a motor-car for the collection of strawberries and conveying the same to market.

THE Postmaster of Worcester, Mass., has petitioned the United States Post Office Department for motor vehicles to be used by the mounted letter carriers.

MESSRS. CHARRON, GIRARDOT, and VOIGT, of Paris, have now opened an American branch at 133, West 38th Street, New York, for the sale of Panhard and Mors cars.

THE Automobile Club of America is reported to be contemplating an alliance of all Automobile Clubs in the United States, with a view to placing the New York organisation on a better footing to guard the rights of automobilists throughout America.

AN experimental run of a motor-car manufactured in Brisbane, Australia, took place recently. The design is that of a four-wheel dogcart, with capacity for four passengers. The propelling power is derived from petrol ignited electrically. The engines develop 5 h.p., and are capable of propelling the vehicle on an average road at from ten to fifteen miles per hour. The car has been constructed by Messrs. Trackson Brothers, Limited, electrical engineers, of Brisbane.

THE Winton Motor Carriage Company, of Cleveland, Ohio, are now building some heavy racing carriages. The engine, which is said to develop 40 horse-power, has two horizontal opposed cylinders, with connecting rods working on cranks set at 180°. It is located under the seat and footboard on the left side of the body. The crank pit is enclosed, and the splash method of lubrication is used. The transmission gear is also enclosed in a tight metal casing, and runs in oil. It is of their usual type, giving two speeds forward and a reverse, and controlled by the usual two levers at the side of the driver. When running on the high gear, a sliding handle on the steering head allows of throwing out all the gears and driving direct from the engine shaft to the rear axle. The regular system of speed control of the engine is employed, but another handle at the front of the seat permits of the adjustment of the speed at any point, while the engine is running "on the governor." The low, plough-shaped front of the body, which is entirely open at the front, contains the copper radiating coils with flanges, and the water tank. The water circulation is maintained by a centrifugal pump. The car has a frame of channel iron, and 36-inch wheels, with 4-inch pneumatic tires. The body is a six passenger tonneau, but the rear part, which carries the tonneau seats, can be removed. The car weighs about 22 cwt. The engine can be run from 150 to 1,100 revolutions a minute, and at the latter speed the car is said to be geared to attain a speed of 83 miles an hour.

CORRESPONDENCE.

THE SPRAG DIFFICULTY AGAIN.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Under the above heading I read in your issue of June 22nd a letter from Mr. Thatcher on this important subject. In your issue of June 29th, Mr. Nixon very kindly suggests a remedy, which although perhaps effective on some cars would be quite useless in the case of a heavy car of the Daimler wagonette type. As every motorist is aware, these cars are fitted with a very powerful hand-brake, gripping the drum on the counter-shaft, but should the running back on a hill be caused through a chain breaking or coming off—which was my own experience—the road wheels are quite free of this brake or the gears, and with the exception of the tire brake, which, on a steep gradient, would seldom hold the car, nothing can prevent running back and its sometimes awful consequences. Acquiring this knowledge by personal experience, I cast about for a reliable remedy, and have just perfected an appliance which will hold a car weighing 25 cwt. with eight up, on a gradient of 1 in 9, without the assistance of the ordinary brakes with which the car is fitted. It is applied instantaneously from the driver's seat, can be made in sizes to fit any car, and weighs only a few pounds. It is my intention to patent it and place it on the market, when I am sure it will be in immediate demand. Unfortunately I am at present hindered by want of capital, and should be obliged if, through the medium of your columns, any of your readers could assist me.—Yours faithfully,

CHAUFFEUR.

MOTOR-CAR MISHAP.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—My attention has been drawn to the current report of a so-called motor-car accident at Newport, Mon. I think it only right that the real facts of the case should be known. It is stated that my car collapsed. Nothing of the kind happened, and the entire fault was on the part of a haulier with a load of pipes, who acted in a very stupid manner. He was going down Commercial Street, Newport, on the tram-line, and when my car caught him up my driver turned it into the side of the road, so as to pass his cart, when he, instead of either keeping straight on or turning to his left, turned his horse to his right (his wrong side), thus bringing it across the front of the motor-car. Had it not been for the quickness and presence of mind of my driver, a most experienced man, who reversed very sharply, and turned the motor-car up into Palmyra Place, there would have been a collision. All that occurred was that the sudden reversing stripped the teeth off a small pinion that drives on to the hind wheel; therefore, the car could not go on.

If I had been driving a horse and carriage instead of the motor-car, and the haulier had acted as he did in this instance, there would inevitably have been a very serious accident, as it would have been impossible to pull up the horse so suddenly as the motor-car, and it would have been entirely the result of the haulier's carelessness and stupidity in drawing right across on his wrong side as he did.—Yours truly,

CHARLES D. PHILLIPS.

THE PARIS-BERLIN RACE.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—As a great deal of interest has been taken in the English car which I drove in the Paris-Berlin Race, I would ask you to allow me to state the circumstances which caused my retirement. The car throughout went absolutely perfectly, and prior to my first puncture I drew up from twenty-fifth position, at which I started, to ninth in the first seventy-eight kilometres. After this, however, my Continental tires punctured no less than seven times, but my final accident, which put me out of the race, was caused when passing another competitor. Being unable to see for the enormous cloud of dust, I struck the arched curve of the road over a small bridge while travelling at about seventy miles an hour, the result being that the car leaped into the air,

and struck the ground again with such violence as to break my back carriage spring. Until a new one was made, which took two days, it was impossible to continue.

It will thus be perceived that my want of success was in no way attributable to any fault in the power or construction of the car. All other competing manufacturers had many cars entered, and every manufacturer had cars broken down, but as I only had one string to my bow, my chance at any time under such circumstances was doubtful.—Yours truly,

S. F. EDGE.

THE 70 H.P. NAPIER CAR.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—In your last issue Mr. Edge surpasses himself in forgetting what he writes. If, however, he will refer to your esteemed contemporary, he will find that on April 27th I asked his permission to advertise a challenge in *Le Velo*, pointing out to him that the wonderful challenges that he was issuing to Mr. Hutton were of very little use to uphold his claims as to the superiority of the Napier car over any other. On May 4th and later Mr. Edge told me that I could make any challenges I liked on his behalf. Before such evidence, which is still in print, naturally, Mr. Edge should at once admit that his letter to you is a mistake. Besides, what does it matter? Mr. Edge has made some wonderful challenges. I have helped him, and have been successful enough for Mr. Maurice Farman to take up the challenge, and now, seemingly, Mr. Edge wishes to climb down. If he does, and does not agree to race Mr. Maurice Farman, your readers will know how to judge his challenges in the future.

I might mention before concluding that Mr. Edge, in reply to my letter in *Le Velo*, has stated that I am attempting to make out that I am connected in business with him, so as to be able to sell cars in this country. I appeal to your readers, as to whether they have ever heard anything so ridiculous or so unjust. In his remarks Mr. Edge is, I consider, sailing very close to the wind, and had he dared to have put it into print in an English paper he would certainly have had to answer for it. I regret that Mr. Edge has so far forgotten himself as to have written in such a strain in a French paper.—Yours faithfully,

D. M. WEIGEL.

Mr. Jarrott writes:—"I notice in last week's issue that your correspondent, "Flaneur," is inclined to poke fun at the *Daily Express* and other journals for referring to the fact that the garments worn by the competitors in the Paris-Berlin race were oilskin. He further points out that the garments in question were made of leather. In justice to the correspondents of the papers in question, however, I would point out that nine out of every ten of the competitors wore oilskins and not leather. I myself wore oilskins, and nearly all the other competitors did likewise. Leather is useless in regard to rain, and the possibilities of a wet journey sufficiently induced most of us to don oilskins in preference to leather garments."

"MOTORIST" writes:—"Flaneur" is mistaken as to an "exhausted" valve never having been heard of before. About two years ago Mr. John Stirling, of Hamilton, discovered one on the well-known Pennington car, but he omitted to say whether the poor thing was revived by a "drop of Scotch."

Two of the leading motorists in Italy have started a movement in favour of the establishment of a motor-racing track, three miles round, in the town of Padua.

MESSRS. FRANK WELLINGTON, Limited, of 39, St. George's Square, Regent's Park Road, inform us that they undertake to repair sparking plugs provided by them free of cost if broken within a month of delivery through faulty manufacture.

MR. PERCY RUSSELL, of Trent Road, Brixton Hill, is a poet—and liberally avails himself of poetic license. A four-line verse by him in the *Daily News* says that the modern motorist "murders children—just to win a race." Probably, if "suburban poets" were substituted for "children" the sympathy of the whole world would go out to motorists as deliverers.

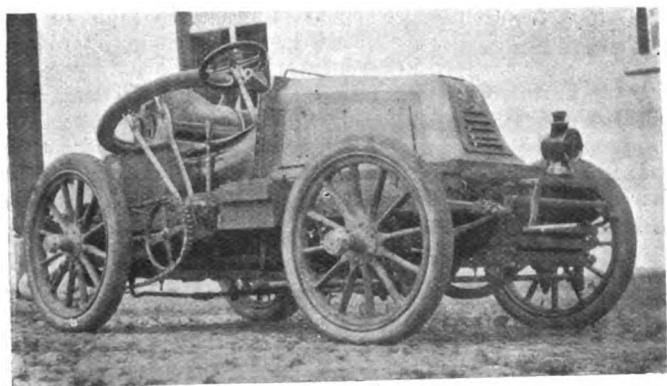
THE GENERAL AUTOMOBILE AGENCY, D. Farman, Man., Garage open day and night, all cars in stock, 100-104, Long Acre, W.C.

THE PARIS-BERLIN RACE.

THE HON. C. S. ROLLS'S EXPERIENCES.

FROM the particulars with which the Hon. C. S. Rolls has furnished us, it would appear that but for one source of trouble, which was unfortunately a constant factor, his chances in the race would have been exceedingly good, as he had no punctures on the first day, only one on the second, and three on the third, and few minor annoyances.

The Mors car which Mr. Rolls drove was only properly finished at 11 p.m. the night before the start, which barely gave him and his *fidus Achates*, Mr. Claud Crompton, who accompanied him as amateur mechanic, time to get up to Champigny and find their place at the point of departure. Owing to the enormous number of motor vehicles of every sort rushing along in one direction to take up positions in the road and watch the passing of the racers, so continuous was the stream of motor traffic that, when they overshot the mark, they were unable for a considerable time to turn round until they got a number of men with lanterns to stand in the middle of the road and stop the oncoming cars. No accidents occurred, however, at this juncture owing to the excellent police arrangements. Fires were lit along the sides of the road, and Mr. Rolls bears testimony to the wonderful picturesqueness of the sight as countless types of cars and cycles with Japanese lanterns sped along through the night, many with their exhaust boxes detached to gain an extra foot an hour. He and Mr. Crompton could scarcely tear themselves



THE HON. C. S. ROLLS' LATEST MORS RACER.

away to get an hour's sleep in a hay loft. Duly awakened at 3.15, they clambered down the ladder, mounted their car, moved into line, and awaited the start.

Soon after leaving the first control they struck some ideal strips of road and passed some five or six cars in the first few miles. Before very long, however, they heard a cylinder missing. Without slowing down Mr. Crompton changed the coils, but to no effect. He then took out and replaced the *inflammateur* on the cylinder, a difficult feat *en plein vitesse*, and giving him, as he said, "seven hundred shocks a minute to stimulate him." Being still unable, however, to get the fourth cylinder to work they decided to continue on three to the next control. Two or three cars had meanwhile passed them, and when they reached Montmirail another thirty-five minutes was lost in the control while the Mors men took out the induction valve, sparking maker, carburettor, etc., only to find that an exhaust spring had jumped out. This was most annoying, as it was one of the first things Mr. Rolls had looked for, but the hook of the spring had become displaced in such a manner that the latter appeared to be perfectly in its place, and the valve seemed to be working up and down all right. This was rectified in one minute, and they proceeded on their way.

From that time onwards, however, the car ran in a most wonderful way, and caught up many others. No punctures occurred, though a number of times it was necessary to stop to to extract nails felt in the tires whilst travelling. The exhaust spring also jumped out again twice. The car

arrived at Aix-la-Chapelle in excellent time, and had done so well that it looked like securing a good position. On the following day, however, exceeding ill-fortune awaited them. They encountered many miles of atrocious *pave*, and over this, being determined to save his car, Mr. Rolls drove very quietly, and allowed several slower ones to pass.

In spite of this precaution, however, a grave state of things was discovered on entering Cologne. One of the iron brackets supporting the water tank, having a flaw at the bolt hole, broke off, and allowed the tank to drop on to the back axle, the effect being to batter a number of holes in the tank and loosen the seams. This, as Mr. Rolls says, was a heartrending situation, as they had apparently got up to somewhere about seventh place according to classification. He felt like giving up the race, as the tank seemed irreparable, but Crompton, resembling his father, Col. Crompton, R.E., in knowing no difficulty, determined to make a shot at repairing. First of all they took off the back of the car, opened up the manhole of the tank, and, with great difficulty, stopped up the holes with grease and canvas from the inside, by means of which they succeeded in getting the lower part of the tank to hold water with only a slight leaking.

They then procured some strong iron wire and bound the tank up to bits of wood projecting from the frame and attached it as best they could, and after this made up their minds to crawl into Dusseldorf, the next control, where a Mors *dépôt* was established. The men there, however, practically refused to help with the tank, saying that it was impossible to proceed, and recommending Messrs. Rolls and Crompton to relinquish the race and wait for a new tank from Paris. Rather than do this they plugged steadily along, frequently repairing the interior of the tank, and patching it up—an unpleasant job, for now and then it would suddenly begin to lose its water from the canvas and grease shifting inside. Crompton nobly plunged his hand each time into the nearly boiling water to fill up the holes with more grease, in the hope of saving enough water in the bottom of the tank to run them to the next control.

When they had good surfaces they could go at full speed, but as practically the whole length of the route comprises a villainous road with frequent *caniveaux* and level crossings, they did not dare to go beyond the third speed, and generally were on the second. They got to Hanover, of course, very late, and were much congratulated by their French friends who had seen their apparently hopeless breakdown at Cologne, and were much surprised at the arrival of the car. Having only one and a quarter hour allowed for repairs at Hanover, nothing could be done but remake the wire-attachment to the tank, which had now broken the second bracket, leaving all the strain on the wire. They took an extra hour out of their running time, and made a better job of the attachment than on the previous day, although the Mors men again discouraged them from attempting to run to Berlin with a large water-tank which leaked everywhere, and was only suspended by a few bits of wire attached to thin pieces of wood.

On the final stage of the journey, besides starting very late, they had three punctures, and what with the ceaseless trouble caused by the water-tank and the dread of losing it over the rough surface, they were very thankful when Berlin was reached five hours after the first arrival. So tired were they that during the three following days they fell asleep at all times, whether at meals, in a cab, or at the opera, while Mr. Rolls developed a new-found propensity of talking in his sleep. When the car was in the Exhibition, the repairs due to the ingenuity of Mr. Crompton were the cause of no little curiosity, and the members of the Mors firm expressed their hearty thanks for the trouble and determination the two young Englishmen had displayed.

Mr. Rolls considers that a race of this sort is almost entirely a matter of luck, given equal cars, Fournier having better luck in both his races than anybody else. He had a great advantage, moreover, in being an early starter, and so avoiding the blinding clouds of dust which other competitors in the rear had to face. Having got up from thirty-third to about seventh during the first half of the journey, Mr. Rolls was told that he must have been one of the first three but for the tank, as two or three competitors who were in front when

the accident happened never got through at all. It was with no little surprise, however, that after having spent four hours stationary on the road, and run the 420 miles from Cologne to Berlin at half speed, Mr. Rolls learned that after all he was classed eighteenth out of 110 starters.

The reception given to the competitors in Belgium and Germany was wonderfully good. At every control bouquets of flowers by the dozen were thrown to them, many of these with cards attached, and glasses of champagne were often offered, together with other drinkables and eatables. At many of the controls there was a band, which struck up on the arrival of each car, and miles of road were lined by cavalry and infantry. Every dangerous or awkward place, whether *cavireau*, level crossing, or corner, was marked by a man with a flag standing some distance beforehand. The organisation throughout, says Mr. Rolls, was, in fact, excellent.

The times given in the *Auto-Velo* indicate that over certain stretches of the road he maintained an average of about sixty-three miles an hour, and occasionally did the third fastest time between controls. Single kilometres, however, were clocked in thirty-two seconds, which is the test speed the Mors cars have to attain on the level before being passed by the makers.

THE KELLY GENERATOR AND BURNER FOR LIGHT STEAM CARS.

NOW that light steam cars are becoming popular it is only natural that inventors should be giving attention to improved details. This is particularly the case with regard to burners, or "the fire," as it is termed, quite a number of improved forms of which have lately been brought out. One of these is the Kelly, made by a Cleveland firm, and which is being introduced into this country by the New York Tire Company, of Thavies' Inn, London, E.C. Figs. 1 and 2 show the generator, which is independent of, but generates gas for the main burner quickly. Fig. 2 shows the device with the outside casing removed. In attaching to the boiler burner the orifice D must centre with the mixing tube of the burner. The union joint A is screwed on to the supply pipe, which must be of the right length to allow the outside generator casing to fit close to the burner casing. B is the deflector plate which carries the sub-flame, and C is sub-flame tube. After the generator has been thoroughly heated it carries and keeps the flame over the main burner, which it lights, when the main valve G is opened. A drip-cup I is first filled and does the first lighting. M is the overflow and lighting point after the drip-cup fills. E is the check and is intended only to prevent the possible turning of the sub-flame valve F, when in motion. The

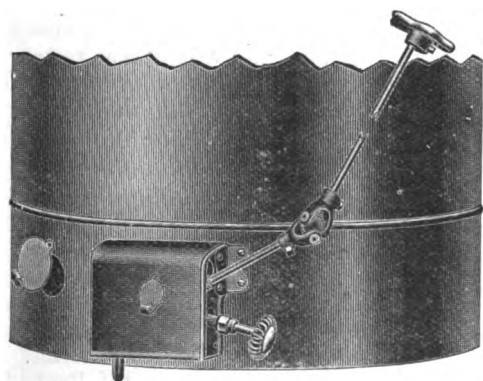


FIG. 1.

sub-flame valve F is, first, for turning on of the fluid in the cup, and afterwards for regulating the sub-flame. G is the main valve stem, by means of which the fire can be controlled from the driver's seat. H is the opening in which the diaphragm, which is drilled and seated for same, is to be screwed. The generator replaces the torch usually employed and from the time the match is applied to the generator, the main valve at the seat

can be turned on in four minutes with a full fire under the boiler from the main burner.

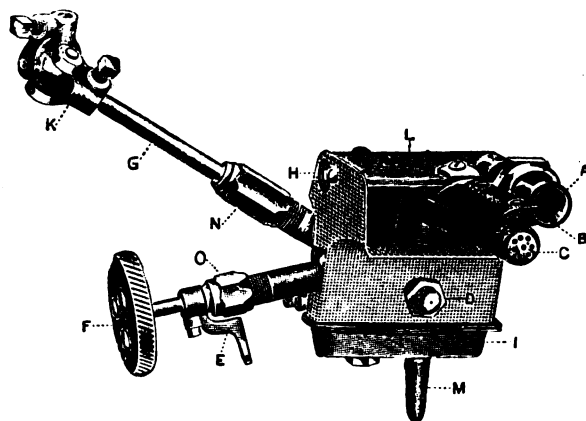


FIG. 2.

Fig. 3 shows the new one-piece cast-iron burner for steam boilers. One of the drawbacks of the steel shell burner with the tubes swedged through is the warping of the plates and

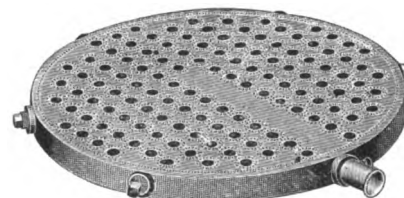


FIG. 3.

leakage around the air holes, owing to the heat. With the new burner it is claimed that there is no possibility of warpage or giving around the air vents.

MESSRS. A. B. WARDMAN AND SON, of 17, Regent's Parade, High Harrogate, stock Carless Capel's petrol and Pratt's motor spirit; motor-cars can also be stored and repaired at their works at that address.

THE Scott Motor Cultivator, Ltd., has been registered with a capital of £50,000, to adopt an agreement with J. Scott, and to carry on the business of mechanical engineers, motor manufacturers, makers of agricultural implements, etc.

THE Lincoln Motor 'Bus and Parcels Delivery Company, Lincoln, ceased to carry on business on Saturday last. This decision was come to at an extraordinary meeting of the shareholders of the company, held at the Saracen's Head Hotel, Lincoln, last week.

THE Bucks, Herts, Berks, and Oxfordshire Traction Company, Ltd., is the title of a new company recently formed to run motor-cars for the conveyance of goods, passengers, and tourists through some of the most delightful parts of those counties.

A HAMPSTEAD doctor, writing to the local press, complains of the speed at which motor-cars pass his house, and states that he has a supply of bandages ready for accidents. This is very thoughtful, but as the medico does not give his address he is not likely to obtain much practice from motorists.

MR. G. BRAULIK, of 217 and 218, Upper Thames Street, E.C., is placing on the market new "Beez" pocket volt and ampere meters, which are particularly adaptable for use in connection with the accumulators and batteries of motor-cars. The chief novelty claimed is in the means of connection employed. One pin connector is attached to the instrument by a flexible cord, the second being loose. One end may be screwed into the meter when in use or pushed into the other connector when carrying in the pocket, thus securing a perfect connection between both points.

HERE AND THERE.



THE London works of the Locomobile Company of America will be closed to-day (Saturday) for the annual outing.

MR. S. W. FULLER, of the Dorking Cycle Works, South Street, Dorking, stores both Pratt's motor-spirit and Carless Capel's petrol, as well as oils and greases for motorists.

THE Automobile Club will hold a run to Hertford to-day (Saturday) starting at 2.30 p.m. The route followed will be *via* Child's Hill, Finchley, Barnet, and Hatfield.

OWING to the increased production arranged for some months ago, the Hozier Engineering Company, Ltd., are now able to deliver "Argyll" voiturettes in about one week from date of order.

MR. BALFOUR drove from the House of Commons on Wednesday in his motor-car to Chiswick to be present at the formal inauguration of the electric tramways running from Shepherd's-bush to Southall.

WE regret to learn of the death of Mr. George Bates, of Coventry. Mr. Bates, who was well known in the district, was a member of the firm of Payne and Bates, makers of the Godiva motor-car.

MESSRS. FRISWELL, LTD., are issuing from 48, Holborn Viaduct, an illustrated catalogue of Peugeot cars, for which they are the sole agents in England. Eight different types of cars are depicted in a clear and attractive manner.

IT is worthy of note that Rivierre, mounted on his Werner motor bicycle, went through the Paris-Berlin ride of 754 miles in 32 hours. Considering that a number of the big cars broke down *en route*, it speaks much for the little machine that it got through the run so well.

IN connection with the annual meeting of the British Association which is to be held in Cheltenham from the 29th inst. to August 2nd next, it is proposed to organise an exhibition of motor-cars suitable for medical men. Arrangements are also being made so that intending purchasers can be taken for trial runs in the grounds surrounding the Cheltenham Winter Gardens.

ONCE more the importer of a foreign-made automobile has found himself in a contest with the United States Customs authorities. The importer of the Mors vehicle, Mr. J. C. Smith, has carried the case to the Board of General Appraisers, who have sustained the consular invoice, which certified that Mr. Smith had paid for the car at second hand £200, and overruled the examiner who had fixed the valuation at £500. The full Board of General Appraisers will now review the testimony, Collector of the Port Bidwell having appealed. For two months the car has been in the possession of the appraiser.

THE Reading Automobile Club held a hill-climbing competition up Peppards Hill a few days ago. The hill to the common measures 267 yards in length, and includes gradients of one in six, one in six and a half, one in seven, and so on. After a keen competition the following were declared the winners. Class A.—Fastest car: Dr. Major's $2\frac{1}{4}$ h.p. Baby Renault. Time, 54secs. Fastest tricycle: Mr. Littleton's $2\frac{1}{4}$ h.p. De Dion. Time, 39secs. Class B.—Mr. A. J. Dew's 5 h.p. Renault car. The cup is therefore jointly held by Dr. Major and Mr. Littleton, and a certificate under Class B. has been granted to Mr. A. J. Dew.

ALL English motorists who contemplate touring in France should procure a copy of the handy pocket guide issued gratuitously by the Michelin tire people, at Clermont Ferrand (Puy-de-Dôme). In the 1901 edition, which has just been issued, about fifty pages are devoted to the Michelin tires, hints as to their repair, etc., the remaining 500 pages giving in alphabetical order all the leading towns and villages in the country, with the names of the hotels, depôts where *essence* is stored, repairing establishments, etc. The little book is invaluable, and were the firm to charge 5s. for it, instead of offering it gratuitously, it would be well worth the price.

THE Queen of Italy is one of the latest to join the ranks of Royal motorists.

MR. HARRY FURNESS utilised the motor-car in his cartoon in the *People* last week.

THE Automobile Club de Belgique will hold a hill-climbing competition on the Sauvenière Road, near Spa, on the 21st inst.

THE Locomobile Company of America have this week shipped from their London dépôt four cars to Russia and also one to Egypt.

THE Swiss Automobile Club held a race from Geneva to Soleure the other day. The winner was M. Perrot, who, on a 24 h.p. Panhard covered the 176 kilometree in 4 hours 50 minutes.

THE Chief Constable of the County of Cornwall has received instructions to keep an eye on motor-cars, the drivers of which exceed the legal speed.

AS a consequence of the anticipated suppression of road racing, it is proposed to lay out an "autodrome," near Quatre-Bras, in Belgium, where the speed of motor-cars and the skill of their drivers can be tested. The track is to be from two to three miles in length; a grand stand will be erected, and ample accommodation for repairing and storing provided.

THE streets of Sèvres, a pretty suburb of Paris, were, one day last week, so crowded with motor-cars and cycles that many innocent people inquired if another big race was about to start. Nothing of the sort was, however, under contemplation. The owners of the cars and cycles were simply waiting their turn outside the Police-court, wherein over two hundred of them were fined for furious driving and other offences, which all declared had not been committed.

THE Automobile Club of America is erecting at its own expense signposts on the roads from New York to Bridgeport, and from New York to Albany. The posts are ten feet in height, made of Bessemer steel, and painted black, with aluminium letters on the four arms, and arrows indicating the way. They are to be placed at all important crossings and branch roads. There will be twenty of these guides between Bridgeport and New York. Between Albany and New York there will be thirty, and forty will be erected in various portions of Long Island.

AN improvement has just been made in the service between London and Switzerland, *via* Dover and Ostend, which will be much appreciated by tourists. Beginning on July 1st and continuing until September 30th, a new "Train de Luxe," of greatly accelerated speed, is running daily between Ostend, Bale, and Lucerne, and *vice versa*, in correspondence with the train leaving London at 10.0 a.m. As the number of places in the new train are necessarily limited, passengers are recommended to book beforehand. First-class express tickets alone are available, and a supplementary ticket must be obtained from the Sleeping Car Company. The new train, known as the "Swiss Express," consists exclusively of sleeping-cars and saloon restaurant-cars, and runs from Ostend, without change of carriage, to Lucerne, and *vice versa*. Full particulars regarding the new service can be obtained from the Belgian State Railway and Mail Packet Offices, 53, Gracechurch Street, E.C.

THE A.C.F. has taken the sensible decision to limit in future the weight of racing motor-cars in its competitions to 1,000 kilos. It is, perhaps, a pity this has not been done sooner. It might have saved a great deal of trouble, and great losses to some firms. There is nothing sportsmanlike in building huge machines just for the purpose of getting more speed. Where the sport comes in, is, in our mind, to beat another maker on equal terms. What a splendid breed of motor-cars will be produced if Panhard, Mors, Daimler, Napier, and so forth, compete to make the quickest car of a given weight. The Panhard light car shows this up, and Giraud's performances on it in the recent races are a lesson on the subject. Several makers have begun to construct cars on these lines, and two Belgians, Deschamps and La Metallurgique, had 12 h.p. cars entered for the Paris-Berlin race. When they came to be weighed, however, they were over the allowance, and they had to race in the heavy car category.

THE AUTOMOBILE MANUFACTURING Co., Ltd., 48/49, Long Acre, and North St., Manchester Sq., all cars in stock, Garage, Repairs.

A NEW depot has been just been opened at 15, Newman Street, Oxford Street, W., by the Thames Valley Motor-Car Company, Ltd., for the sale and exchange of motor-cars.

ACCORDING to a telegraphic despatch from New York, Mr. Albert C. Bostwick has broken the world's mile automobile record at Long Branch, his time being 1 minute 16 $\frac{3}{4}$ seconds.

At the last meeting of the Penmaenmawr Urban Council Mr. J. Bowen called attention to what he described as the "terrible speed" at which motor-cars drove through Penmaenmawr. No action was, however, taken.

DURING the stay of the racing cars in Berlin, they were put on exhibition. A large number of motor engineers used the occasion to study the different constructions, and the pupils of engineering schools visited the show under guidance of their professors, who lectured on the cars.

MR. J. CALCOTT, jun., of Coventry, met with an accident whilst riding a motor-cycle in that town one day last week. In trying to avoid a cyclist who was rounding a corner on the wrong side, Mr. Calcott ran against the kerb and was thrown, sustaining some severe bruises and cuts.

THE North Dublin Rural District Council has adopted a resolution that the County Council be requested to frame bye-laws regulating the speed of motor-cars in county Dublin. The Chairman considers that motor-cars are a great nuisance, although they are patronised by the King.

THE Thornycroft Steam Wagon Company of America, have delivered a steam wagon of 8,000 pounds capacity to the Otis Elevator Company, Yonkers, N.Y., who are testing it at their works prior to putting it in service between their factory and New York.

A FIREPROOF cement, specially intended for repairing damaged sparking plugs, has been put on the market by Mr. Stephen F. Wiles, of the Iverna Cycle Company, 30, King's Road, Reading. The cement, which has been named Iverna, should meet a long-felt want. It is put up in tubes, of which a sample has been sent us for trial.

THE chief of the Fire Brigade at Washington, U.S.A., has decided to use motor-vehicles to carry himself and his assistants to fires. A report has been made to the District Commissioners on the subject, and it looks as if the change would lead to the proposal to substitute motors for horses in every branch of the fire department in that city.

THE racing rules of the Automobile Club of America, of New York, have been published in pamphlet form. They are mainly rules of order, and are non-committal on most points of general interest. They refer apparently to speed races only, while leaving the door open for further rules in respect of other contests later if such action should be found desirable.

MR. G. P. COOKSON, of 511, Chester Road, Old Trafford, Manchester, is prepared to render prompt assistance to any motorist requiring repairs in his locality, for which purpose he has a car in constant readiness. Petrol and lubricating oils are stocked at the above address, where are also machinery and plant for repairing motor-cars promptly and efficiently.

THE Winton Motor-Carriage Company, of Cleveland, U.S.A., have issued a small illustrated pamphlet entitled "Automobling in the West," giving an account of Mr. Winton's recent attempt to cross the Continent of America on one of his machines, and showing by pictures taken on the spot the terrible condition of the mountain and desert trails which the adventurous inventor encountered.

THE issue is announced by the Board of Agriculture of two more sheets of the reduced Ordnance Survey map on a scale of 4in. to the mile. The present issues are of Hampshire and Wiltshire, and Surrey and Sussex, and, as they cover ground which is largely resorted to by motorists, and the touring season is now commencing, they have made a very opportune appearance. The maps are of admirable clearness and accuracy, as the roads are divided into three classes according to their character. The maps fold into a small compass for carrying in the pocket.

FURIOUS DRIVING CASES.

At West London, Frederick Hunter, of Cavendish Square, was summoned for driving a motor-car on the afternoon of June 15th along the Chiswick High Road at a greater speed than twelve miles an hour. Constable Alker said the indicator of the bicycle which he rode in pursuit registered a speed at one portion of the road of twenty miles an hour. The defendant, who admitted going eight miles in 38 minutes, inquired if it was evidence to put in the indicator. Mr. Lane: Yes, it has been tested and found correct. The defendant was fined £3, with 2s. costs.

At West London, Arthur Cohum, of Duke Street, was summoned for driving a motor-car on Sunday, June 16th, along the high road, Chiswick, at a greater speed than twelve miles an hour. The evidence in support of the case was given by Constable Alker, who followed in plain clothes on a cycle, and found that the speed indicator attached to his machine registered the rate at one portion of the distance at twenty-two miles an hour. Defendant disputed the rate, and said the time exceeded two hours in driving from Duke Street to Maidenhead, a distance of twenty-seven miles. The constable said it was the fastest car he ever followed, and he could scarcely articulate when he stopped. Mr. Lane, K.C., said it was clear defendant had exceeded the regulation speed. He fined him £3, with 2s. costs.

At Steyning, Robert Crawshaw was summoned for driving a motor-car at an improper speed at Southwick on June 9th. He did not appear, and Mr. Staples Firth, who represented him, handed in a medical certificate stating he was suffering from nervous collapse. P.C. T. Bristow stated that on Sunday, June 9th, he was in Albion Street, Southwick, accompanied by P.C. McNally. Shortly before half-past six in the evening he saw a motor-car coming along very fast from the direction of Shoreham. Witness timed it with a stop watch for a furlong, and found that the rate of speed was 18 $\frac{3}{4}$ miles an hour. P.C. Bristow handed a plan of the locality which he had drawn up to Mr. Firth, who said it did him very great credit, and asked to look at his stop watch. Examining it, Mr. Firth objected to it, as it was started by a slide at the side instead of by pressing the top. Mr. Firth: When you were sent there, you didn't want to come back empty-handed? Witness: It makes no difference to me. Mr. Firth contended that the witness could not tell when the motor-car passed the particular point at the commencement of the furlong, and questioned him as to whether anyone was actually incommoded or in danger, but the clerk (Mr. G. A. Flowers) and Mr. West said it was not necessary to prove under the section of the Act governing the summons that the life of any particular person was in danger. P.C. McNally, who was with P.C. Bristow, stated that there were many people about when the motor-car came along, and they scattered to the sides of the road. Questioned by defendant's solicitor, witness suggested that defendant was unwilling to stop. For the defence, Mr. Firth urged that his client, owing to the state of his health, could not have travelled at that rate, and also intimated that the police would naturally be biased. He contended that the stop watch was old-fashioned, and also that it was impossible to properly locate the point where the furlong commenced. The Bench convicted, and ordered defendant to pay £1 fine and 18s. costs.

LOVE ON A MOTOR-CAR.

At Brentford, George Hageman, a French subject and an engineer, was charged with driving a motor-car to the public danger, and, further, with doing serious bodily harm to Joseph Cobbler. Charles Weedon, of Isleworth, stated that he saw prisoner's motor-car coming along the road, not at a very quick pace, but so carelessly steered and driven that it went in zigzag fashion. The reason for this was to be found in the fact that prisoner had his arm around a young lady, who was sitting beside him, and was kissing her. (Laughter.) Accordingly he had only one arm to steer and drive with—his left. Witness saw the car dash into the back of the youth Cobbler, who had been walking slowly behind a baker's cart. Cobbler was knocked under the cart, and the young lady was pitched out on top of him. As she fell she called out to prisoner, "Oh, Georgie, go along! Don't stop!" Prisoner, through an interpreter, declared that the baker's cart, behind which he had been slowly driving, came to a sudden stop, so that he could not avoid driving into Cobbler. The reason he made off without stopping when the accident occurred was that he meant to try and find a policeman! Mr. J. Allen Brown commented upon the absence of the young lady, who should have been an important witness, and fined prisoner £2 and costs, plus £2 compensation to the injured youth—£5 17s. 6d. in all.

AUTO-MOTOR EXPRESS COMPANY, Ltd., v. HOLLICK.

At Ramsgate County Court, Mr. Frederick J. Clements stated that he was chairman of the Auto-Motor Express Company, Limited, which was registered on August 20th, 1896. Defendant was a member of the Board of Directors, and possessed twenty £1 shares. On March 1st, 1901, a final call of 10s. being made, defendant resigned his directorship. £17 10s. was due from him in respect to this and previous calls. Defendant's contention was that when the company was formed and he applied for shares

THE GENERAL AUTOMOBILE AGENCY, D. Farman, Man., Garage open day and night, all cars in stock, 100-104, Long Acre, W.C.

it was on the distinct understanding that it was not to be a manufacturing company. The company was formed to purchase cars to carry goods and passengers, and Mr. Clements and he (defendant) were appointed a committee to inspect the various kinds of cars with a view to finding the ones most suitable for the purpose. They were about three years looking for suitable cars, and up till the time he resigned from the directorate none had been found. Afterwards, apparently, plaintiff went to work with Mr. Softley to produce a motor-car, but this he (defendant) alleged was distinctly against the terms of the prospectus. To indulge in the manufacture of cars or motor machinery was, he submitted, not a legitimate object of the company. His Honour was of opinion that the memorandum of the company gave them power to manufacture, and gave judgment for plaintiff.

NO LIGHTS.

At Richmond (Surrey), Arthur Withers, of Kensington, was summoned for driving a motor-car on the evening of June 22nd and failing to have attached thereto a red light behind. P.C. Sexton proved the case. The defendant said he was not aware a red light behind was required. A fine of 5s. and costs was imposed.

At Richmond, Oliver L. Atkins, of Streatham Hill, who, through his solicitor, admitted that he had not the necessary red light on the back of his motor-car, was fined £2 and costs, the explanation being that defendant was detained three hours owing to the machinery going wrong.

At Coventry, Herbert Duret, of Coundon, was summoned for riding a motor-cycle at Coundon on June 29th after dark without having a lighted lamp attached. He did not appear, but sent a letter, in which he stated that he had ridden without a light for a short distance, and would have been home earlier, but had been delayed and had to walk several miles by reason of a badly burst tire. A fine of 2s. 6d. and costs was imposed—12s. in all.

"THE POLICE ONCE MORE ON THE FRONT."

The following, as well as above title, are from the pen of a modest and anonymous contributor, and have not been edited:—

"I am very sorry to say that an Motor Driver was somment for driving 14 miles on houre he drove an Car which was speedet to 14, and the Police how aparet with 5 witnesses gained the day, there was Bobby how said the Car was driving 20 miles an houre and he also round on very sharp corner, then No. I. an coachman how said the man drove to farset to be able to tell the speed, but he made sure of 20 miles the houre, he also said that his horse tooke no notice, of the Motor but if I had not kept my horse on the right side of the road, the Motor my have roun in to me, now No II. that was the blacksmi how was not able to get out of his shop to see the Motor passing, but was sure that the Car was driving over 20 on houre, of course the horses were shoet befor starting out and the driver had there for no buissnes to stop outside the Shop. No III is on Boot-maker, which was standing on his Shop window waiting for some work to come in to get on day's leaving, but got his money with out work but for 2 he said he was able to write on Bicile 18 miles on houre but not able to keep up with this motor (14 on houre) As it hapent No IV. Save the Motor broking down and on little while after it passt him again, there are the Daimer Motor gaining the Race, not like the Daly Mail said on the 29 June as they were afraid to go in for on Race, Daimler is as good as many more good old English thing's, however, this poorer horse braker did not like to see the Motor pwover Driver loost the day after on 1 hounr I, by seit having on much exelent Lower he was found for 40 S. and 32/6 for this 5 workman which Bobby engaget."

OBSTRUCTION.

At Bow Street Police Court, D. M. Weigel, motor-car agent, of 97, Long Acre, was charged with having caused an obstruction by means of a motor-car. Mr. Albert Osborn appeared for the defendant. Chief Inspector French stated that at 2.25 on the afternoon of the 21st ult. he was in Long Acre, and saw smoke issuing from the defendant's premises. There was a motor-car outside, and it was causing an obstruction. As the witness was in plain clothes at the time, he instructed Police-constable 199 E to direct the responsible person to remove it. The constable spoke to the defendant, who at once came to the witness and said, "That car is mine. I have had it there twenty minutes, and it shall stay there as long as I like." The car remained outside from 2.25 until three o'clock. Two constables gave evidence in support of the chief inspector's story. The defendant was called, and stated that on the afternoon of the day in question a probable customer, who was not now present, called upon him to inspect a motor-car. The witness took him for a ride, and did not return to Long Acre until ten minutes to three o'clock. The motor was the smallest car known, 6 ft. long by 4 ft. 6 in. wide. The obstruction was caused by the crowd—not by the motor. He did not tell the chief inspector that he had been there twenty minutes, and intended to remain there as long as he liked. He had only returned about five minutes when the inspector spoke to him. Frederick Strudwick, a man employed at

the defendant's premises, said he was sure that the car was not brought back until a quarter to three o'clock. Other witnesses gave evidence to much the same effect. Mr. Marsham said he must believe the evidence of the police officers, who used their watches, and ordered the defendant to pay 5s. fine, and 2s. costs.

THE CHISWICK FATALITY.

At the West London Police-court, Charles John Scarisbrick, manager of the Crouch-end Opera House, surrendered to his bail before Mr. Lane, K.C., to answer the charge of causing the death of Elizabeth Pearce, while driving a motor-car in Goldhawk Road, on the evening of June 26. Mr. Paul Methuen, barrister, appeared for the accused. At the inquest on the body of the unfortunate woman the jury returned a verdict of accidental death and Mr. Lane, K.C., stopped the hearing of the defence, and acquitted the accused of furious driving. He said there had been a mistake, but it was not one of negligence or carelessness. He ordered the accused to be discharged, holding that the verdict of the coroner's jury was correct.

A NON-STOPPING CASE.

At Kingsclere, H. T. Francis was charged with not stopping his motor-car on being signalled by the Rev. A. T. Finch, vicar of Kingsclere, to do so. Defendant pleaded not guilty. Mr. C. Lucas appeared for the defence. The Rev. A. T. Finch stated that he was driving just above Park House on Saturday afternoon, the 22nd ult., and when going up Cottoynton's Hill he saw a motor-car approaching. He immediately alighted from his dog-cart and tried to pacify his horse, which became very restive and excited and tried to get up the hill. He clung hold of the animal and pulled him off the road, but he dragged witness on to the grass. After a time he pacified it and led it down the hill, and went straight to the inspector. Witness signalled twice in the usual way for the occupants to stop, but they took no heed and went straight on. Mr. Lucas, for the defence, said the first thing the occupants of the motor-car saw was someone standing at the horse's head. They never saw any hand held up, and they thought the owner had drawn out of the way for them to pass. Nothing was said, and no assistance was asked for. It was a misunderstanding, and the driver had authority always to observe the rules of the road. H. T. Francis, the engineer, said he had seven years' experience. The first time he saw Mr. Finch he was holding his horse's head. He saw no signal, and was going at the slowest speed possible, viz., four miles an hour. The Chairman said the Bench considered the case proved, as the Act required a person to stop on the hand being held up, and the defendant was ordered to pay £3, including costs.

AN automobile club has just been formed at Toronto, Canada.

THE *Koelnische Zeitung*, in a leading article on the advantages of the employment of automobiles in military service, states that tests to be made at the forthcoming German manoeuvres will complete the experiments which were commenced two years ago, and which have hitherto given the best results. For this year's experiments the Reichstag has voted nearly £9,000. Special attention will be paid to the methods for transporting the necessary provision of petrol, with the least danger of explosion, and the consideration of the possibility of making the motor-cars keep up with the troops in districts where there are no good roads.

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THE Motor-Car Journal.

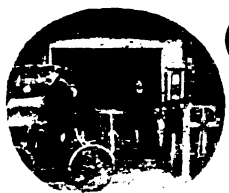
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COMMENTS.



ON Saturday last the members of the Lincolnshire Automobile Club had a most enjoyable run to Wiseton Hall, the residence of Captain J. F. Laycock, J.P., Vice-President of the Club. The cars went *via* Gainsborough, a reduction of 5d. per car having been secured by the Secretary for the day on the tolls at the Trent bridge. The weather was perfect, and, with the exception of one or two minor accidents, all arrived safely. The roads proved very good, and the long rise from Beckingham to Gringley was taken well by all. The district around Wiseton is very picturesque, and the view from Gringley Hill, which includes an area of forty miles in any direction and Lincoln Cathedral, was greatly admired. Captain Laycock and his sister, Miss Mitchelins, received the members and conducted them over the beautiful orchid houses, the rosary and garden, and the stables and motor-stables. The visitors were somewhat disappointed at not being able to see the famous Mors car and its more famous driver, M. Fournier, but probably another opportunity will be offered. Tea was provided in the cricket pavilion, the day's run being greatly enjoyed by everyone.

Club Run to Hertford.

THE short notice was probably the cause of the poor attendance at the Automobile Club run to Hertford on Saturday last. Those who took part in the journey had a very pleasant time. Mr. R. E. Phillips was present on his new 12 h.p. car; Mr. Johnson and Mr. Bruce on their Darracq; Mr. and Mrs. Cordingley and Miss Pursehouse on the M.M.C. Panhard; Captain Langrish on his 8 h.p. Soncin tricycle; Captain Lloyd on a bicycle; Mr. Winton on a 3 h.p. tricycle, and Mr. Sampson on his 6 h.p. Benz. After dinner many returned to town, but several stayed the night and had a very pleasant cross-country run the next day.

Aberdeen to London.

THE Hon. L. Canning, J.P., D.L., has just accomplished a highly satisfactory run from Aberdeen to London, in company with Mr. Ean Cecil on his cars. The latter was obliged to change cars on the way, like relays of horses, no less than three times in order to keep up with Mr. Canning's Century. Mr. Cecil had an accident with one car, and bad luck with his selection of others, which were very unsatisfactory. Progress was slow till Northallerton was reached, where Mr. Cecil was fortunate enough to find a new Panhard voiturette, which he bought from Mr. Ernest Hutton. This little car is a beauty, and very fast, but the Century was able to just beat it, and remain "cock of the walk" to the end. The run was over the Grampians, past the famous Devil's Elbow, where Mr. Cecil lost one car, which was capsized; then through Edinburgh, Hawick, over the Cheviots to Newcastle, Durham, Darlington, Northallerton and York to London.

County Councillors and Motor-Cars.

AT the last meeting of the West Riding County Council the Chairman alluded to the question of roads in relation to motor-cars and traction engines which he had introduced at the meeting of the County Councils' Association on May 15th, and stated that he had come to the conclusion that some sort of means of identification of the machines would be ultimately required. The reckless drivers were the exception, but he thought it would be advisable as far as possible to preserve the interests of the public. Mr. F. Bacon Frank was of opinion that the maximum penalty of £10 for offending drivers needed enlargement. If the penalty was raised to £50 some good might be done.

Petroleum Licences.

IN April last Messrs. D. Napier and Sons were summoned by the London County Council, under the Petroleum Act of 1871, for storing petroleum spirit without a licence. Counsel for the London County Council contended that the regulations issued by the Secretary of State in pursuance of the Light Locomotives Act of 1896 did not apply to trade premises, but applied only to private individuals who possessed motor-cars. The summons was dismissed, with £10 10s. costs. The London County Council are appealing against this decision. The Emergency Committee of the Motor Union under the auspices of the A.C.G.B.I. have decided to contest the appeal, for the following reason. They have every confidence that, if the London County Council were to win the appeal, they would place no unnecessary restrictions on the storage of petroleum spirit; but the effect of winning the appeal would be to give power to the local authorities throughout the country to refuse licences and otherwise to hamper the multiplication of motor-spirit merchants which is so eminently desirable and necessary to the growth of automobilism. If the appeal is successful, then manufacturers or persons who wish to sell motor-spirit will be required to obtain a licence from the local authorities, to submit drawings of their proposed storehouses, etc., etc., and their applications may be refused. If the appeal be defeated, the storage of petroleum spirit will continue to be regulated by the revised regulations of the Secretary of State of May 15th, 1900.

The Dangers of Horses and Motor-Cars.

VERY sensible is the attitude of the *Spectator* when explaining that "there is often far greater danger from the vehicle drawn by horses than from the horseless vehicle. And for a very simple reason. It is far easier to stop a motor-car at a moment's notice than a horse." This is a fact which automobilists have long tried to emphasise upon the public, and it is gratifying to see the general press taking up the idea. "What is wanted," continues our contemporary, "is to produce a strong sense of responsibility in the drivers, and not to tie them up with paper regulations." That is the whole gist of the matter. With drivers recognising their responsibility, and a public that realises the danger that lurks in rushing across roadways heedless of what is coming along, there would be few accidents due to motor-cars.

The Surrey Police Again.

THERE seems to be a very exciting contest going on in Surrey between automobilists and the police, and, so far as we can learn, the latter are acting in a very objectionable manner. According to trustworthy informants, plain clothes officers are being stationed at various points on the Ripley road to look out for unwary motorists, and they are apparently anxious to take victims before the magistrates. Such energy is not wholly pleasing, and we could wish the police were better employed. One thing is certain—motorists will have to be very careful when travelling along Surrey roads.

A New Scotch-Built Petrol Car.

THURSDAY last week saw the trial of the first motor-car, produced by the Kingsburgh Motor Construction Company, Limited, of Granton, N.B. The opportunity was taken advantage of by the Eastern section of the Scottish Automobile Club to have a run to Cramond Brig, six cars turning up at the rendezvous. The afternoon was extremely pleasant, and the run was a thoroughly enjoyable one, though the dust was a little troublesome to those following the leading vehicle. The "Kingsburgh" car, which is intended for public service, was the subject of favourable comment throughout the journey. It is seated for fourteen, is fitted with 12 h.p. two-cylinder engines, and has three speeds, five, eight, and twelve miles an hour. The total weight of the car is 27½ cwt.

Automobilism in Guadeloupe.

THE automobile has penetrated into Guadeloupe, in the West Indies, M. Hubert Ancelin having recently imported a 10 h.p. Delahaye. One of his first runs was from Pointe à Pitre to Basse-Terre, a distance of seventy kilomètres, which was accomplished in a little over two hours. As might



ON A COUNTRY ROAD IN GUADELOUPE.
Clic' de [La France Automobile.]

be expected, the advent of the horseless vehicle caused much excitement among the natives. We hear that M. Ancelin contemplates starting a service of motor-cars in Guadeloupe, and that his scheme is receiving the support of the local authorities.

Racing Cars in England.

AT the meeting of the Executive Committee of the Motor Union recently held, the following resolution was unanimously passed:—In view of the very high speeds which may be attained by modern racing cars, the Executive Committee of the Motor Union view with concern the possibility of such vehicles

being used for the present in this country. Such cars must always present to their drivers a temptation to employ speeds the use of which, in this country, might be regarded as open defiance of the law. High speeds are likely to bring about injurious restrictive legislation, and are a menace to the progress of the movement and industry in this Kingdom. Further, the possibility of the removal, which may be hoped for if only moderate speeds are employed on the road, of a legal limit of speed, and of motor-vehicles being placed under the condition which controls other road traffic, viz., that vehicles shall not be driven to the common danger, will be endangered, if not sacrificed, by the driving of cars at high speeds in this Kingdom. The Committee of the Motor Union have, therefore, decided not to defend members in cases in which they may have been driving vehicles at excessive speed, and they recommend the Club Committee of the Automobile Club of Great Britain and Ireland, and the Committees of its affiliated Clubs, to refuse to allow such racing cars to take part in competitions on the road, trials on the road, or Club tours held under the auspices of the respective Clubs.

The Earl of Carnarvon and His Motor-Cars.

AS recorded in another column, the Earl of Carnarvon was summoned in respect of two of his motor-cars, one driven by himself and the other by his *mecanicien*. The case was heard at the Petty Sessional Division of Epping, on Friday, 12th inst. Evidence was given by a police officer, who swore that he saw a motor-car coming at a terrific speed dashing down a hill outside Epping and up another one, at the top of which he was stationed, and that there was a large number of holiday people about. He described the speed as being at least twenty-five miles an hour. Moreover, he stated that although he put up his hand as a signal to his Lordship to stop and shouted to him, his Lordship continued on his journey. The policeman also stated that the two cars were not very far from each other, and although he had endeavoured to stop both of them, they refused to pull up. Several witnesses were called to corroborate this, amongst others a loquacious gentleman, who described the speed of the cars as terrific and at least thirty miles an hour. He then stated he felt it his duty as one of the public to endeavour to put a stop to the manner in which automobilists were using the roads in and about the vicinity and driving at a grossly reckless pace. Mr. Staplee Firth conducted the case on behalf of Lord Carnarvon, and very quickly disposed of this self-appointed administrator for the public weal, and, after the magistrates had heard the evidence and the arguments raised by Mr. Firth, the Bench, after considerable deliberation, unanimously dismissed both charges.

Burglars Chased by a Motor-Car.

MR. WM. GLASS, of Sydenham, had a novel experience recently whilst taking a Motor Manufacturing Company's car from London to Coventry. Whilst renewing the water on the North Road at Willoughby he was approached by the Chief Constable and a police inspector on bicycles, who informed him that three young men had broken into a house near Daventry early that morning. They asked the motorist to carry them in pursuit, as the burglars had four hours' start. He agreed to do so, but there was a difficulty in getting the two men with bicycles on board. Next they asked him if he would carry information to the police constable at Dunchurch, so that he might look out for the burglars. On arriving at Dunchurch the police authorities there asked him to convey the information to the police constable at the next village. He resumed the journey to Coventry, keeping his eyes open for the burglars, and, spotting three men answering the description, hurried on to give information. Arrived at the address given, he found the police constable in bed. By the time he was up and had reached his gate the men were just entering the village. The aid of another man was obtained, and as the three burglars stopped to look at the car they were "collared" and marched off to an outhouse in the police constable's garden.

What eventually happened we know not, but had it not been for the motorist and his speedy car they would perhaps have never been captured.

James and Browne's New Car.

MESSRS. JAMES AND BROWNE, of 78A, Queen Street, Hammersmith, are about to bring out a new car of which great things are expected. We are not at liberty at the moment to publish an illustration of the vehicle or to describe it at length, but we may mention that the engine has both induction and exhaust valves mechanically operated. Both valves and valve sleeves are interchangeable, so that a spare part for one is a spare part for all. The valve springs are all set outside, and so removed from heat influence. The engine, which is nearly completed, has two cylinders, and will be set horizontally. It is of eight normal horse-power, the cylinders being 4in. bore and 6in. stroke. All the bearings of the gearshafts are formed with oil baths, and fitted with ring lubrication, so that oiling with a car in constant work will be necessary only about once a week, or even less frequently. The gear, which is all parallel, will afford four forward speeds and one reverse, all controlled by one lever. The steering axle is straight, and the springs are set on the French *glissade* principle. A small car on the same system has already been run with most satisfactory results.

Motor-Bicycles.

DURING the past week one of ours, who has been somewhat sceptical as to the future of the motor-bicycle, has been riding an "Excelsior," manufactured by Bayliss, Thomas and Co., Ltd., Coventry, and has come to the conclusion that there is a great amount of pleasure and fascination to be derived from motor-bicycling. At first sight it seemed a difficult matter to steer and manage a cycle weighing something like 75lbs. with a motor "coughing" at one's feet, but in actual practice, after the first forty yards had been traversed, all fear had vanished, and it was, if anything, easier to steer, as the additional weight gave greater steadiness and stability. Regarding the motor, as every part is so accessible and, with a few lessons in mechanics, easily understood, this trouble would soon be got over by an ordinary cyclist. Then again, by removing the band—which is only the work of a moment—the machine can be ridden home as an ordinary cycle should the motor go wrong. Our representative says that his week's experience has fully convinced him that there will be a great future for motor-bicycles, and that it is only a question of an opportunity to try these instruments of speed for hundreds of cyclists to invest in this new form of locomotion. The vibration is very little, and on a good road a speed of eighteen miles an hour can be comfortably maintained; of course, for those who desire a fair amount of exercise, there is plenty of scope, as, with only a 1½ h.p. motor, the machine can be assisted up ordinary hills. An experienced motor-bicyclist has stated that he can now steer his way through crowded thoroughfares with as much safety and confidence as on an ordinary bicycle. It is merely a matter of practice and experience.

A Hint to Lowestoft.

SURELY some of the proverbial wisdom of the East must have forsaken the promoters of the Lowestoft Corporation Bill now before the House of Commons with the object of empowering the Corporation to raise £185,000 for tramways. Lowestoft has a population of 29,000, largely seafaring, and the proposed loan would increase the rates to something like 11s. in the pound. The Corporation would do well to investigate the tramway problem as presented by many a borough that numbers its inhabitants by six figures, mostly operatives, yet cannot make the service pay. Now if Lowestoft really requires transport, and we may venture on a word of advice, we would suggest a motor-car service, municipal or otherwise. Such a service is infinitely less costly to establish, requiring no permanent way,

and is just as economical in up-keep; more so, in fact, if horse traction is contemplated. One-fifth of the proposed expenditure should, in our opinion, provide Lowestoft with such transport as it requires.

A Notorious Policeman.

THE policeman who was the cause of Sir Edgar Vincent's recent appearance in the police court seems to be achieving distinction as a "motor catcher." Mr. F. Leigh Martineau, of Eyot Gardens, Hammersmith, was a victim of his ingenuity last summer. It will interest other motorists to know that this particular upholder of the law weighs about twelve stone, and rides a bicycle geared to 81 with no brake. He is apparently on duty to catch motorists, and now that his testimony is regarded with such acceptance it would be well for drivers to be careful when passing along his "beat."



A MOTOR CAR IN GUADELOUPE—INTERESTED NATIVES.

Motor-Cars in the Manœuvres.

SIR EVELYN WOOD has written to the Automobile Club stating that the Secretary of State for War has had under consideration the subject of proposed manœuvres by members of the Automobile Club with a view to testing the use of automobile vehicles for military purposes, and that he is prepared to agree tentatively for this year to the following plan:—(1) The duties to be confined to keeping up lines of communication, carrying officers and despatches, and work of a similar character. (2) Owners of cars to make their own arrangements for supply of petrol and other necessities for running the cars, the military authorities to afford facilities for safe storage and defray cost of transport by rail. The cost of fuel also to be refunded at termination of manœuvres. (3) Personal expenses for owners to be allowed on basis of military regulations—viz., a nightly allowance of 20s. up to seven nights, including night of arrival at a station, and 15s. after seven nights. Mechanic, 5s. for first seven nights, 3s. afterwards. Allowance for messing, in lieu of all of the rates proposed above, will be given, but it is probable that gentlemen taking part in such manœuvres would be made honorary members of one of the military messes at the station. The period of manœuvres for this year will probably be from August 3rd to 10th. As for 1901 the nature of the operations will be experimental, it is believed that not more than four cars will be required, each capable of carrying from three to four persons including the driver. Members of the Club who have cars which will hold three and the driver, and who are willing to drive

them as automobile volunteers from August 3rd to 10th, are asked to communicate immediately with the Club secretary.

American Motor-phobia.

SOME Americans suffer from motor-phobia even more severely than their English cousins. Morristown, N.I., whence the following lament, seems to be the centre of the afflicted area:—
 "Is the increasing use of country roads by automobilists going to become a serious matter, or will that usually docile animal and old-time friend of man and family become reconciled to its modern substitute and grow willingly to a quiet sharing of the highway and byway? Some declare there is no hope for it, and that the average horse grows more fearsome every time it meets the strange, queer-sounding vehicle gliding towards it. It is asserted that many country people are afraid to come to town because of the fear of meeting them, women being the most affected, of course. Horses bought for pleasure driving are said to be standing idle in the stables."

French Customs Duties on English Motor-Cars.

ON March 11th last a letter was sent by the Automobile Club to the Foreign Office pointing out that an arrangement had been come to between the Automobile Club de France and the Belgian Government, whereby members of the A.C.F. could introduce their motor-vehicles into Belgium without paying at the Belgian Customs House the ordinary customs due, and expressing the desire that some such system might be established between this country and France for members of the Automobile Club of Great Britain and Ireland, who may be visiting France with their motor-vehicles. A reply has been received from the Foreign Office to the effect that a despatch has been received from His Majesty's Ambassador in Paris, reporting that he is informed by the French Minister for Foreign Affairs that the Director-General of Customs had been requested to make arrangements on the subject direct with the Automobile Club de France. M. Delcassé has promised to communicate with Sir E. Monson as soon as a decision is arrived at.

"A Rival in the Field."

THE Automobile Club is no longer the only "recognised authority to hold trials of motor-vehicles and to give certificates in connection therewith." The Southampton Borough Police have gone into the business and are cutting the price. A quarter mile track has been opened in the Avenue, Southampton, where a P.C. takes your time at starting, and another takes it at the finish. So far as we know only three certificates have been granted, one to a lady who covered the quarter in thirty seconds. No entrance fees are charged, but a small contribution to the local rates is expected. All desiring certificates should enter at once as it is highly probable that the cost, 4s., will be increased with pressure of business.

A Wayside Story.

A WELL-KNOWN innkeeper, whose hostelry is on the confines of Wycombe, has a little tale to tell about a motor-car. It arrived at his place one evening the other week, and was safely housed by a gentleman, who intended resuming his journey along the Oxford road on the following day. Early the next morning a youthful member of the household conceived the idea of taking a motor-car trip "on his own," and as soon as it was daybreak he got the car out of its place of shelter and was soon careering with it along the road at a fast rate. In his endeavour to slacken speed the boy pulled the wrong lever, and the result was that the vehicle was brought to a sudden standstill in consequence of an unintended attempt to clear the hedge. The boy was, of course, turned out, but was not hurt. Meanwhile, mine host had been aroused by the noise in the yard, and finding the motor-car had disappeared he promptly sent for the police. The search which ensued led to the finding of the car and the boy on the roadside. What happened to the boy need not be told here.

A RIDE ON THE PRINCE'S MOTOR-CAR.

THERE were three of us, the Prince, the Descriptive Vocalist, and the Author. We set off from the Gaiety Theatre, Nottingham, at 11.30 one fine Spring morning and journeyed to Derby, via Midland Railway. Our object was to bring back the Prince's motor-car, which he had left at the Rising Sun Hotel, Friar Gate, the previous day. I might here mention that mine host of the above hotel is an exceedingly obliging man, having turned his own trap out of its coach-house in order to accommodate the Prince's car, for stabling which he made the modest charge of 1s. We were not stopping in the house either. Motorists need not be afraid of their dirty appearance giving offence at the Rising Sun, as the hotel is the headquarters of the Chimney Sweeps' Association, and probably they are used to untidy visitors.

Having cleaned and lubricated the car and laid in a supply of petrol, we found it was time for lunch, after discussing which meal we started about half-past two for our adventurous journey to Nottingham, sixteen miles away. The Descriptive Vocalist was anxious to know if we should be in time for the evening show, which commenced at seven: "I follow the performing fleas," he said, "and it takes me half-an-hour to make up." The Prince, proud of his new purchase and with the confidence arising from an extensive motoring career of nine days, assured him he would have ample time, not only to perform the transmogrifying operation known as "making up," but also to view the interesting entertainment provided by the educated insects whose turn preceded his. Through the traffic of Derby we sped, followed by the curses of cabmen whose varnish we had scraped—the Prince always cuts it fine to show what a good steersman he is and to give you confidence in his driving. Through Spondon and Risley we ran at a "steady twenty" (a week). The motor seemed to be working half-heartedly, and, although none of us were exactly "experts," we guessed that only one cylinder was firing. Soon after this the car stopped; we all got down, and after sundry turns of the starting handle and tugs at the fly-wheel, "off she went again."

Running down the hill into Sandiacre we passed a horse and cart which (the horse) took offence at our appearance, and tried to back into us; with wonderful presence of mind the Prince swerved up on to the path, scraped the wall, and came back again on to the road, just missing a lamp post, which had been carelessly left standing by the curb. After this we had rather more faith in the Prince's driving. Beyond Sandiacre the car stopped again. Evidently our batteries were running out; more twirling of the flywheel, and then a steady run until within about three miles of Nottingham, where, on a considerable incline, she halted definitely—batteries run out! The Prince rummaged in the interior of the motor! The Descriptive Vocalist swore!! The Author smoked!!! It was nearly six o'clock when we made up our minds to push the inanimate 14 cwt. to the top of the hill, and let it run down on the other side to a public-house which we knew was situated at the bottom. Oh, how we pushed! We progressed three hundred yards in half an hour; when a kindly driver of a cart was persuaded to tow us to the top. Once over the summit, we ran down grandly, running as silently as an electric car. The impetus just took us into the yard of the public-house, where we left the car, and chartered a ginger-beer cart to take us up the hill, through Lenton, into town.

Suffice to say that, dusty, oil-begrimed, and weary, we reached the theatre just in time to snatch a mouthful of food before "going on." The Descriptive Vocalist was rather less descriptive than usual that night; and Sloper, the ventriloquist's leading figure, was heard to make some cutting remarks about "moty-cars," which, although not intelligible to the front of the house, were much appreciated by those "in the know."

"The Prince of Wales" did you say? Oh, dear no, the car was owned and driven by Prince Bendon, the well-known ventriloquist and latest professional convert to automobilism.

S. BARTLEET.

THE PARIS-BERLIN RACE.

MR. C. JARROTT'S EXPERIENCES.

MR. C. JARROTT has sent an account of his experiences in the Paris-Berlin race to *Automobile Club Notes*, from which we take the following:—I got my car four days before the race, and tried it about 200 miles before the actual start. It is a 40 h.p. Panhard, belonging to Mr. Harvey du Cros. I had a fair idea of what a motor-car would stand upon ordinary bad roads, but I had no conception that it would be able to stand such a terrific ordeal, terrible roads and difficult corners, as the route from Paris to Berlin. The innumerable occasions upon which one either struck level crossings, *caniveaux*, etc., when the car practically left the ground and came down with a terrific crash, gave one the impression on every occasion that it would be impossible for the car to last very long under such rough treatment.

I started No. 13, and at the commencement of the race had some little trouble through my governors hanging up owing to the car being new, and also to the breaking of the spring pulling back the commutator. At first I thought the latter trouble was through the wire breaking, and as this wire was carried through a small copper tube, I did not see how I could repair it, as I could not get at it. I subsequently found it was the spring which had gone, and soon remedied this. These delays cost me altogether about half an hour. Between Epernay and Reims I began to

vented one seeing more than fifty yards. This mist, together with the dust made by the competitors in front, made passing impossible, and I could not catch anyone before getting to Cologne.

At Cologne my misfortunes, on the second day, began. I punctured, put in a new tube, which, after endeavouring to pump up, I found was nipped. I took this tube out, put another one in, but again, after an attempt to pump it up, took it out, and on testing it I found it was not screwed down tight at the valve seating. After this we made another attempt, and I found then that my pump had broken at the gauge. Altogether the delay in Cologne took me over an hour and a half, and a large number of cars had passed me before I got going again. Later on in the day I had further tire troubles, and it was only in the last hundred miles that I managed to regain in a small measure the position I had lost. I eventually arrived in Hanover 25th. On the third day we started out with some sort of arrangement whereby the times occupied in the two days were taken into consideration, and we were supposed to have been started in the actual order in which we had arrived over the complete course on time calculation. I eventually got away at 6.46. The road was of a most tortuous description, and I am surprised there were not a number of accidents in the first portion of the journey. I steadily overhauled the leaders, and at Magdeburg got into the first ten.



THE RACING CARS IN BERLIN. FOURNIER ON HIS MORS IS SEEN AT THE LEFT.

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[Allgemeine Automobil-Zeitung.

make up a little of the way I had previously lost owing to my stoppages.

Previous to this, at Viels-Maisons, after descending a very steep hill, and coming to a very sharp corner, owing to my *mecanicien* not hanging on tightly, he was thrown out, but no damage was done, and we proceeded on our way after a very slight delay. I probably took the corner somewhat faster than I should have done, owing to the fact that I was being pressed at the moment by Mr. Edge on the 50 h.p. Napier, who was close up behind.

The road through Belgium and that part of Germany leading to Aix-la-Chapelle was of the most "cornery" description, and there were innumerable danger flags put up for the benefit of the competitors. The very handsome manner in which we were looked after at every control in regard to champagne, food, cigars, cigarettes, etc., was not the least pleasant feature of the race. A magnificent reception awaited us at Aix-la-Chapelle, thousands of people coming out beyond the control to see the cars finish, and it was certainly strange to have to drive at top speed into what seemed to be a packed mass of people occupying the road, and which only parted and allowed enough room for the car to pass just as one seemed to be on top of them. I arrived thirteenth at Aix-la-Chapelle and consequently the next day started out from there for Hanover 26 minutes after Fournier. It was bitterly cold, and a mist hung over the road which pre-

Five miles this side of Magdeburg I burst the right-hand front cover, and drove into Magdeburg on the rim, where I obtained new cover and tube, and fitted same without losing much time. Soon after this I had another puncture to my left-hand back tire, which took some little time to put right, and during this operation I was again passed by three or four cars. Two of these I managed to pass before reaching Berlin. I eventually managed to arrive tenth on the course, doing seventh fastest time for the day, and gaining eighth position in the whole race.

Tire troubles seem to have been universal, but I think I had rather more than my fair share, and, of course, had some of the time I lost—even a small portion of it—been saved, I should probably have occupied a still better position. I may say that I finished each day absolutely fresh, and although the physical and mental strain was at times somewhat severe, nevertheless I did not remark it particularly. The most exciting part of the racing was passing the cars in front, when one had to drive at least half a mile in the dust, through which absolutely nothing could be seen, and which was filled with stones and sticks flung up by the car in front, cutting the face, and imperilling one's driving glasses.

The reception of the competitors in Berlin by the German Automobile Club was worthy in every respect of the race. Fêtes, banquets, etc., were arranged on every conceivable occasion for the benefit of the visitors, and I personally look back upon the

race as one of the most pleasant experiences I have ever had. I calculated to have done one stretch of 33 kilometres in 21 minutes. On the last day I did 6 seconds slower than Fournier over the course, and finished 1 hour and 20 minutes after him.

CORRESPONDENCE.

THE WATER GAUGE IN STEAM CARS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I have noticed that among users of steam cars of the Locomobile type very few pay attention to whether the column of water in the water glass moves up and down when the car is in motion. One often hears of boilers being burned when the water glass showed water, but in such cases undoubtedly the column of water in the glass was "dead," and was being held up by some obstruction, or a check valve which was seated. It is highly important that notice should be taken of the mobility of the column in the glass, and not alone of the presence of water, as only under those circumstances does the water glass reveal the true level of water in the boiler.—Yours truly,

J. REYNOLDS.

PREVENTION OF SIDE-SLIP, FORE-DRIVING, ETC.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—With regard to the comments to which my article, "A Run Across France on a Racer," has given rise and the "blue haze" in which the whole subject seems involved, I have been waiting to see if anything more terrible than the "maze of driving chains, swivels, universal joints, levers, and bad language" was likely to be the outcome. This, I am pleased to find, has not been the case, but instead practical work in the direction I have foreshadowed is shown to be in progress, as evidenced by the letter from your correspondent Mr. George Freestone.

I am delighted to hear from Mr. Sidney Russell that the mode of construction I referred to would secure the advantages I claimed for it. Would it be troubling him too much to give me the names and addresses of manufacturers of the "blue haze," which it appears will have to be fixed beneath the cars built upon this principle. Doubtless it is due to my impracticable temperament that I fail to grasp the advantage of also fixing the "lever" underneath the carriage, because it seems to me it would be so very inconvenient to have to crawl in under one's carriage every time one wanted to start, stop, or change the gear.

With regard to the bad language, I always manage to pick up the requisite quantity on the road whilst in company with other drivers of petroleum carriages, even those which are not "all-wheel-steered and fore-carriage propelled." In reply to your correspondent's remark re cost, I am willing to pay a good price for the "blue haze" but not for the other complications which in my opinion are quite unnecessary adjuncts.—Yours faithfully,

A. R. SENNETT.

FROM LONDON TO BARNSTAPLE ON A WERNER MOTOR-BICYCLE.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I feel sure there are many people who still doubt whether motor-bicycles are practical machines or only unsatisfactory toys. Possibly the following facts may help them to decide. On Thursday, July 11th last, I left London at a very early hour, 5.15 a.m., so as to avoid the traffic. I was on my Werner bicycle, *en route* for a place five miles from Barnstaple in North Devon. The distance is 210 miles, and I arrived at 6.45 p.m., having stopped 2½ hours on the way for luncheon and rest. I went *via* Reading, Marlboro', Trowbridge, Frome, Bridgwater, Glastonbury, Taunton, Wiveliscombe, and Barnstaple. Thus the 210 miles were covered in eleven hours, an average of just over nineteen miles an hour. Considering that about fifty villages and towns were traversed at a speed of eight or nine miles an hour, I think the average was good, for it was never any question of racing with me, and I only used the full power of

the motor to climb the hills, some of them, notably in Frome itself, and in the neighbourhood of Wiveliscombe, being terribly stiff. However, the sturdy little machine carried me triumphantly up all of them, and I never had occasion to walk once during the day. I could have easily kept up an average of twenty-five miles an hour had I chosen to do so.

Finally, there was absolutely no breakdown; the machine needed oil only about every hour or so, the trembler was adjusted twice, and a gallon of petrol was purchased at Shepton Mallet. Eleven pints of petrol carried me the whole distance, at a cost of 1s. 10d., with petrol at 1s. 4d. per gallon. The above figures amply demonstrate the fact that this, the most economical and lightest of automobiles, is indeed a very wonderful and practical machine. I have now had two years' constant experience with this type of motor-bicycle, and have as constantly declared my very favourable opinions concerning it—too enthusiastically, some people may have thought—but I can now point to the marvellous rides of Bucquet and Rivière in the Paris-Bordeaux and Berlin races, and ask whether I was mistaken. As a matter of fact, Bucquet's ride to Bordeaux was still more marvellous than the public guessed, for had he not met with a severe gash to his inner tube, necessitating a long delay before obtaining a new one, he would have done the whole distance in twelve hours, twenty-four minutes less than the superb record of Rivière. I had the pleasure of conversing with these two riders a few days ago in Paris, and hence these facts. In conclusion I would say, let any one learn in an hour or so the theory and details of a petrol motor, and then, in two days after possessing a Werner, all the fair land of England lies within easy reach of this admirably designed and rapid little marvel.—Yours truly,

A. L. BENETT.

A DANGER ON THE ROAD.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I think it would be well to draw the attention of County Councils, District Councils, and perhaps more especially the Parish Councils to the existing and dangerous way drivers of horse vehicles have in hilly districts of blocking heavy cart-wheels and vans and wagons with large pieces of rough wood, flints, or part or whole bricks. I am quite in sympathy with giving the animals a rest, but it is the way their drivers leave the blocks on the road, to the discomfort and danger to life of cyclists, motorists, and drivers of other horse-drawn vehicles, which should be prevented. Why not compel each heavy vehicle to have a back roller, as is adopted in some parts of the country? Even a piece of wood with handle might be carried and a place made under carts or wagons to receive it, so that the drivers would always have it with them. Trusting something may be done very soon.—Yours truly,

ROADSTER.

RELIABILITY.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I am surprised to see most of your correspondents, in relating their experiences of runs, having something to say of valves needing adjusting, brakes going wrong, and many other defects besides tire troubles. Six months ago I bought a Glasgow built car, and since the first week I have gone out and come in without any trouble whatever on the road, and have run close on 3,000 miles—often over 100 miles a day. Last week I went from Barrhead to Musselburgh, through Glasgow, Coatbridge, and Edinburgh, fifty-four miles, making the return journey without a single stop.—Yours truly,

WALTER CREBER.

A USEFUL HINT.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—The following little incident might interest some of your readers. Whilst out on my car the other day I chanced to

get a puncture; my brother and I removed the tire, and were about to mend it, but found we had no solution. Being about five miles from the nearest village, we were in despair; when suddenly I remembered that petrol was a rubber solvent. Finding a piece of electrical binding rubber, we put it in a tin box, poured some petrol on it, which readily dissolved it. This making some very fair solution, we mended the tire, which is still holding up well.—Yours truly,
A. C. S.

A HINT FROM MARGATE.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I should like to draw the attention of your readers and any motorist visiting Margate to the disgraceful way in which the cab and wagonette drivers drive. They usually drive on the wrong side of the road, and in other ways endeavour to cause accidents with motor-cars. Now that the electric trams carry passengers who would otherwise pay their iniquitous charges, they try their best to put down any other modern methods of locomotion. I would suggest that any motorist or cyclist having trouble with the cab or wagonette driver should take his number and report him to the police.—Yours truly,

C. P. C.

"M. M. C. S.," writing from Christiania, Norway, states:—"I should be very glad to hear the experience of users of petroleum oil motors and locomobiles. I have used an oil motor in my auxiliary boat for four years and am perfectly satisfied with it, but should like to know how it works on the road."

MR. HENRY LEITNER, of Accumulator Industries, Ltd., writes:—"In your interesting description of an electric vehicle's long distance run, you omit what I think most people would consider the main feature. It is no doubt interesting that the vehicle in question now looks graceful and that the present batteries only occupy a reasonably small space. It is also gratifying that instead of a "driver with a companion being perched on the two tiers of batteries" there is now proper seating accommodation. But how about the small and powerful accumulator that rendered all this possible and accomplished the phenomenal run of 94½ miles? By omitting its name—an old "Leitner" C.U. 6 battery of 50 cells, the main point of importance is left out, the battery having been constructed about 18 months ago.

A RUSSIAN motorist is about to travel round Russia in his car, visiting St. Petersburg, Pskow, Riga, Warsaw, Moscow, and the more important towns of the Empire.

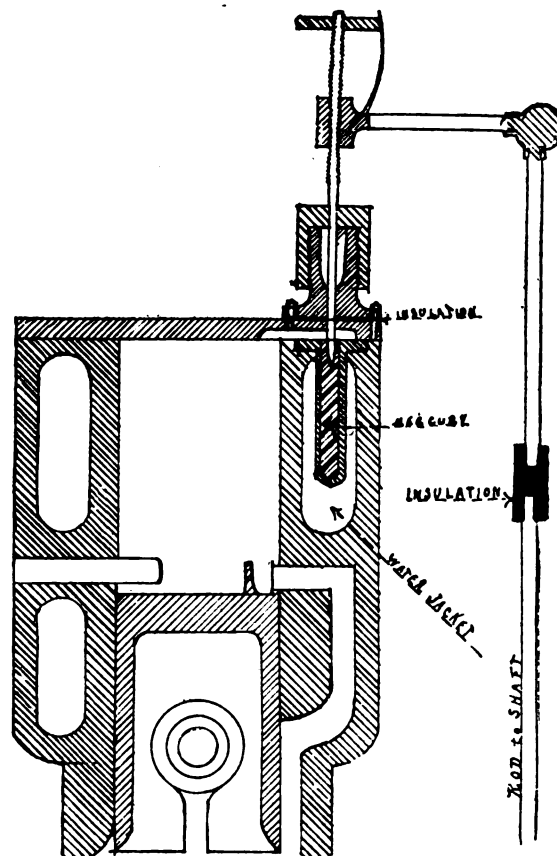
Mr. A. R. SHATTUCK and Mr. J. Dunbar Wright, president and vice-president, respectively, of the Automobile Club of America, have just completed an automobile tour from Paris to Geneva, Berne, Basle, Strasburg, and back to the French capital.

THE concluding Saturday run of the 1901 summer season of the Automobile Club will take place to-day (Saturday). Mr. Roger W. Wallace, K.C., Chairman of the Club, has invited the members and friends accompanying them on their vehicles to take afternoon tea with him at the "White Hart" Hotel, Windsor. The start will take place at 2.30 p.m. and the route followed will be via Richmond Park, Kingston Bridge, Sunbury, Shepperton, Chertsey, Laleham, Staines, and Old Windsor.

DURING the Royal Agricultural Show at Cardiff so much interest was taken in Mann's patent steam lorry, that it was arranged that it should be tried in actual work. The trial was a thorough success. The lorry steamed out of the show ground to Spillers and Bakers' mills, where it was loaded with five tons of flour in bags. It then left with its load and proceeded to Cowbridge, via Bute Road, St. Mary Street, and over Canton Bridge. It went well, and without a single hitch, doing Tumble-down-Dick Hill with the utmost ease, travelling at the rate of five miles an hour. Down hill it was absolutely under control, as shown by the way it ran into Cowbridge. The lorry was put up in the market yard, where the tanks were filled with water ready for the return journey. Leaving Cowbridge at 4.45 the vehicle kept up a good speed of five miles an hour, arriving in Cardiff about seven o'clock.

A NOVEL SPARKING DEVICE.

A NEW mechanical igniting device for petrol motors which has been introduced by Mr. J. V. Rice, jun., of Edgewater Park, New Jersey, is just now attracting considerable attention in motoring circles in America. It consists of a small steel cup, the bottom of which is filled with mercury. A cap is fastened on the top, and through it a small plunger is moved up and down by means of a rod attached to the crank shaft. At each stroke the point of the plunger dips into the mercury; on



withdrawal it makes a vigorous spark, or, in other words, a spark in which there is a maximum amount of current. Looking at the break through a sight hole it appears more as a small dense flame than a spark. One charge of mercury will, it is stated, last for some time, the oxide of mercury being carried off by the engine as it gradually forms. The plunger is threaded nearly its entire length, which enables a close adjustment to be made for the mercury at any depth. The device has been tested on a De Dion motor under all speeds up to 2,340 revolutions per minute with, it is stated, very satisfactory results.

MR. W. H. BUXTON, of Southport, has now opened a depot in Liverpool, at 57B, Bold Street, where Locomobile steam cars will be kept in stock.

OVER fifty automobiles participated in the Massachusetts, Automobile Club's run from Boston to Massapoag Lake, Sharon, Mass., recently. Other cars came from Providence, R.I., bringing the members of the Rhode Island Club. In all, ninety vehicles and 210 passengers reached Sharon.

MR. CROKER, Chief of the New York Fire Department, has expressed himself strongly on the imaginary dangers of gasoline, or petroleum spirit. "Parlour matches," the Chief declares, "cause more fires than gasoline, and some deaths every year, yet no one thinks of prohibiting their use. Gasoline is no more dangerous in use than many other substances of like kind when handled properly. As to the use of gasoline in automobiles, I consider it almost absolutely safe. I have been using it myself for a year and a half, and have never had an accident with it."

MOTOR-CARS AT BRIGHTON.

THOSE who visit Brighton are able to become well acquainted with the reliability and the other advantages of the motor-car. The town is admirably situated for the use of the automobile, and the numerous places of interest a few miles away give the opportunity for the institution of public services that are certain to be popular. Rumour is busy with talk of additions to the existing motor-car services in the town, and in a year or two Brighton will be enjoying further prosperity from the advent of the motor-car. A few notes on what is already being done may be of interest.

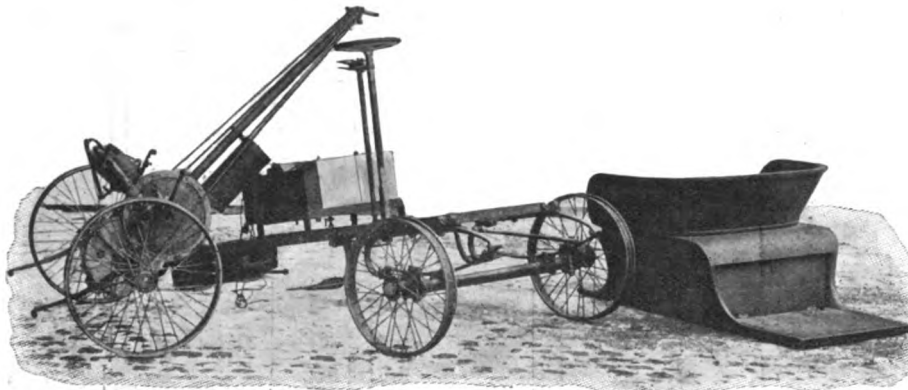


FIG. 1.—THE KOPPEL CAR WITH BODY REMOVED AND DOUBLE FRAME SEPARATED.

The Sussex Automobile Company is the name of one of the leading concerns, and Messrs. Duck and Harris are responsible for its operations. As a whilom manager of the Brighton branch of Humbers, and also as one who introduced the automobile to Cambridge, Mr. Duck is well known; while Mr. Harris was a sufficiently famous champion cyclist of the county to be still remembered in that capacity. They have established workshops in the Western Road with business premises immediately opposite, and their selection of cars include a Daimler 'bus, two and four seated Locomobiles, De Dion voituresses, Pieper cars, Progress motor-tricycles and cars, Ariel trikes, and several French vehicles. Running the concern on somewhat similar lines to those of the Shaftesbury Avenue depots, Messrs. Duck and Harris are doing much for automobilism in Sussex.

Mr. Lonsdale (originally Messrs. Monk and Lonsdale) has removed to Waterloo Street, Hove, thus carrying the business into a fashionable suburb. He has a large connection in repair work, and a Burns' car was among the vehicles shown there a few days ago.

Dealing only with the trade, the Motor Fittings Company, represented by Mr. Easton, has an agency at 28, North Road, and is thus a factor in familiarising visitors with the motor-car.

Fine show rooms on the King's Road front are being opened by the Brighton and South Coast Motor Company, and the position of the concern will contribute to its success.

Char-à-banc services with Daimler cars are organised by the Madeira Motor-Car Company, whose store rooms are in the Madeira Road. Mention should also be made of the engineering works opened by Mr. Werotte, one of the partners in the Times Motor Company, who spent much time in introducing a steam car of their own construction. A private trade in oil launches is done by Messrs. Tucker and Stonham, who own three such boats themselves, one or other of which is often to be seen around either of the piers. A few miles away, at Worthing, a Daimler car at Warne's Hotel has been fitted with a Creese self-starter, which appears to work admirably.

Automobilists will find it advisable to secure petrol and advice from any of these firms when visiting the southern seaside resort, as skilled *mecaniciens* and experts in automobile matters will give the benefit of a wider experience than could be offered by the tradesmen in other lines who are now showing a tendency to store petrol.

THE KOPPEL PETROL CAR.

ONE of the latest Belgian cycle firms to take up the construction of automobiles is the Compagnie Belge de Velocipedes, of Liege, who are now constructing vehicles on what is known as the Koppel system. A novel feature of the car is that the frame is built up of two distinct parts (Fig. 1)—one carrying the motor and transmission gear, and the other the steering mechanism. One of the advantages claimed for the arrangement is that in case of any repairs being necessary, either part can be detached without interfering in any way with the parts of the other. The engines are of the vertical type with water-jacketed cylinders and fitted with electric ignition. A governor is also provided, the speed ranging from 600 to 1,600 revolutions per minute, the normal rate, however, being from 900 to 1,200 revolutions. The carburettor employed is of the constant-level spraying type. A feature of the device is that no hot air is used, resulting, it is claimed, in a greater impulse being given to the piston at each explosion. The water-tank has a capacity of sixteen litres; the circulation is maintained by a pump and radiator, the latter being located in the rear of the frame. The engine is geared direct to the rear axle, the crank-shaft, change-speed gear wheels and differential gear running in an enclosed oil bath. The makers claim that 80 per cent. of the power developed by the motor is given off at the rims of the road-wheel. Another feature of the car is the method of attaching the body, any type of which can be fitted to the frame.

It is connected by bolts at the rear and by hinges at the front, and can be raised up at the back, to enable any small repairs to be carried out. Steering is controlled by a horizontal hand-wheel, on the standard of which are two sectors, one carrying the handles controlling the ignition and the governor, and the other the lever actuating the change-speed gear. The engine is started from the driver's seat by means of a lever, at the right of the steering column. Ample brake power is provided, while

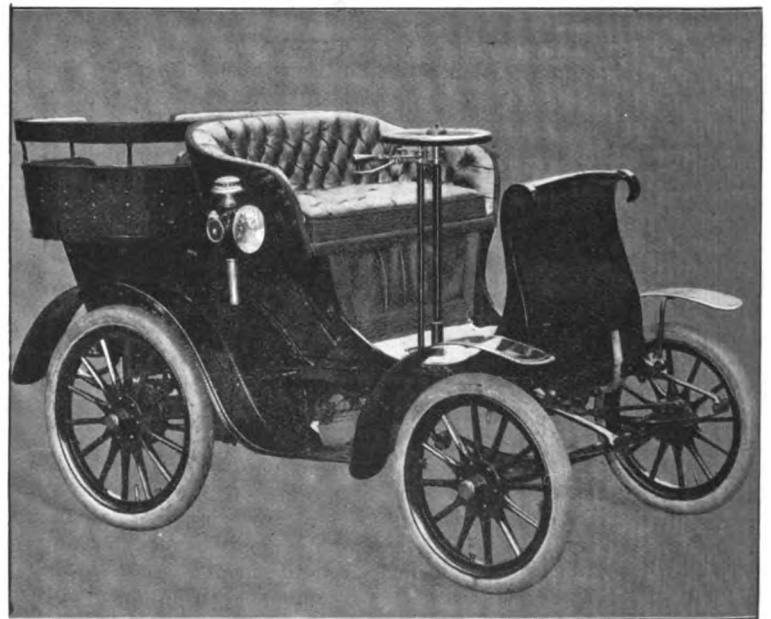


FIG. 2—GENERAL VIEW OF KOPPEL CAR.

the wheels, which are 80 c.m. diameter at the rear and 60 c.m. at the front, are shod with pneumatic tires. In the particulars sent us by the company no mention is made of the horse-power of the engine adopted.

CONTINENTAL NOTES.

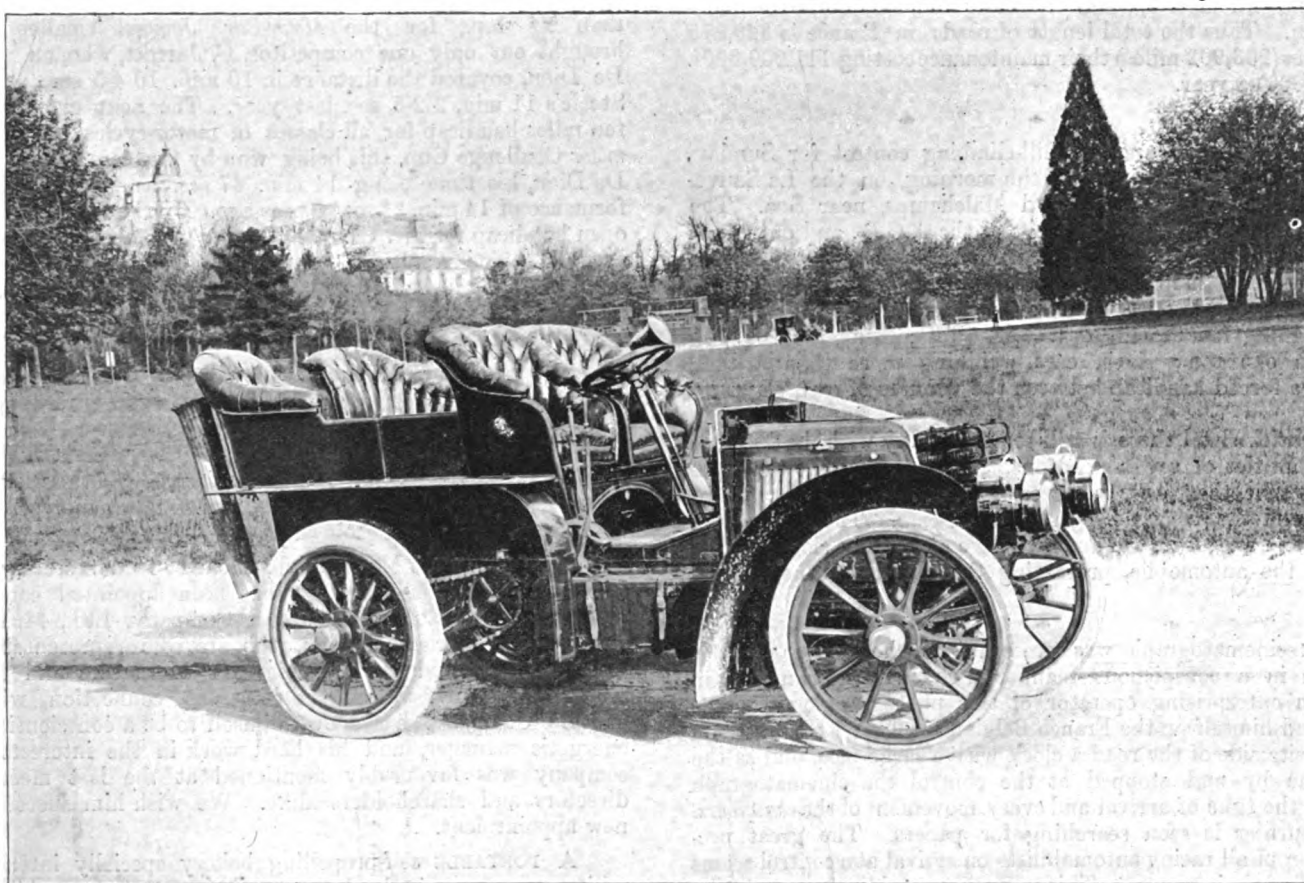
BY "AUTOMAN."

AUTODROMES are the order of the day. In Belgium there is already a project of creating one on the site of the battle of Quatre Bras, near Waterloo. It is proposed to have a course five kilos. long, of which two kilos. will be flat and straight, and the remaining three hilly; there will be a hill with a gradient of 1 in ten. The autodrome will not only be used for races, but also for private trials. In Italy, the Chevalier Tonietti and the Marquis Bourbon del Monte, of the Italian Automobile Club, propose to found an autodrome at Padua. I learn that there is also a project under consideration in Paris to make a very large race-course for automobiles, with good roads and bad roads and even paving-stones. The land will be fenced in, and a charge for admission will be made.

accident, the three Mercedes cars that started would have finished, which is saying a good deal.

THE Dutch tour seems to have been a great success, and created great enthusiasm amongst the peasants, who had most of them never seen a motor-car before. There were no accidents to mar the pleasantness of the tour, and medals and prizes of different kinds were won by Werner bicycles, and Peugeot, Darracq, Daimler, De Dion Bouton, Mors, Benz, and Delahaye cars. Somehow or other Panhards seem to have been conspicuous by their absence.

ON Sunday, the 7th inst., the Alcohol Competition from Paris to Braisne, eighty-five miles, took place. The winners were as follows:—Heavy cars, Gillet-Forest, on a Gillet-Forest car; light cars, Marcellin, on a Gobron-Brillié; voiturettes, Wimille, on a Darracq; and motor-cycles, Cormier, on a De Dion-



THE KING OF THE BELGIANS' 20 H.P. PANHARD CAR.

*Cliche de**[La France Automobile.]*

It is astonishing the number of Belgians who have become famous in the automobile world. The Baron von Zuylen and the Chevalier de Knyff are both Belgians, as also M. Sarazin, Panhard and Levassor's late manager. The Marquis De Dion, too, comes from a Belgian family. M. Houry, one of the active members of the Committee of the A.C.F., is also a Belgian, as are Pinson, Levegh and the brothers Mors. Three engineers of De Dietrich's are also Belgians.

If one looks carefully into the running of the Mercedes car in the Paris-Berlin race, it will be remarked that when this car has its steering gear altered, and more power in its motor, it will be very hard to beat. It must not be forgotten that the motor develops only 35 h.p., and was competing against much more powerful motors made by the French houses of Mors and Panhard and Levassor. Three Mercedes cars competed in the race, and two arrived in Berlin. The third had an accident the third day of the race, which was in no way the fault of the car; therefore it is only sportsmanlike to admit that, but for this

Bouton. A kilometre competition was also held near Braisne, when Gobron-Brillié won the first place for the heavy cars. Darracqs won in the light cars and the voiturette sections, and Cormier in the motor-cycle class.

IN connection with the Paris-Berlin race there were all sorts of complaints, unfounded, in my opinion, with regard to tampering with the cars in the nights, between their arrival and departure at and from Aix and Hanover. I heard Fournier say that his brakes had been loosened, that he had verified them on the Friday night, and on the Saturday morning found the nuts quite loose. I should think it is more likely a little oversight, and that the vibration of the road on Friday's journey had loosened them. M. Paul Meyan suggests, in *La France Automobile*, that in future races each car should be, on its arrival, completely covered with a tarpaulin, which should be fixed to the ground and sealed in such a manner that any tampering with it would be immediately detected. The following morning the tarpaulin should be taken off and the car given over to its conductor, all cleaning,

repairing and filling of water and petrol to be taken out of the running time.

TALKING of Paul Meyan, he mentions in the *Figaro* that in a conversation Fournier told him that he had won 25,000f. in money, and that Mors had given him a car exactly like the one on which he drove in Paris-Berlin, and which he values at another 50,000f.; he, therefore, gets out of the race about £3,000 in money and several cups. He is taking a month's rest at Trouville and afterwards is going over to America with Charroa.

SOME interesting figures are published in the *Annales des Ponts et Chaussées* with regard to the roads. There are 38,000 kilomètres of national roads in France, and 2,375 kilomètres in Algeria. The departmental roads are 47,000 kilomètres in length and cost 21,000,000f. a year to keep up. The length of the grand roads is 241,500 kilomètres, and it costs 80,000,000f. to maintain them. Thus the total length of roads in France is 328,875 kilomètres (203,902 miles) their maintenance costing 111,000,000f. (£4,440,000) a year.

THE A.C.B. announces a hill-climbing contest for Sunday, the 21st inst., at ten o'clock in the morning, on the La Sauvenière road, between Pouhon and Malchamps, near Spa. The contest will be held under the rules of the A.C.B., and only open to members of the Affiliated Clubs. There will be seven classes, namely:—First, motor-bicycles; second, motor-cycles; third, voiturettes, weighing less than 7 cwt. 3 qrs. 14lbs.; fourth, light cars, weighing less than 12 cwt. 3 qrs. 5 lbs.; fifth, cars weighing less than one ton; sixth, cars weighing more than a ton; seventh, a forced handicap between the winners of each class.

IN Switzerland there is still some difficulty with the different local authorities of several cantons. It seems strange that this little Republic, that lives, to a great extent, on the tourist, should be so behind the times as regards motor-cars. The Cantons of Graubünden and of Tessin and Uri have absolutely closed all the roads to the automobile, pretexting the danger to the general traffic.

THE cinematograph was pressed into the service of automobilism in a conspicuous manner in the Paris-Berlin race, in which an enterprising operator of this photographic apparatus established himself on the Franco-Belgian frontier. He fixed on the opposite side of the road a clock with a large face, and as the cars came by and stopped at the control the cinematograph recorded the time of arrival and every movement of the *chauffeurs*. Thus, Fournier is seen searching for papers. The great pre-occupation of all racing automobilists on arrival at a control seems to be to find their papers. This was very notably the case in the English 1,000-mile trial.

REFERRING to the decision of the A.C.F. to limit in future the weight of racing cars to one ton, the readers of the *Journal* will remember that I have strongly advocated this course in these columns. In my opinion, however, the restriction as to weight should also carry with it a clause with regard to the passenger-carrying capacity. A motor-car with a very powerful engine and carrying only two passengers is not of any practical use, and, as a matter of fact, except for racing purposes, hardly any such cars exist. Nearly all powerful cars sold outside racing circles are constructed to carry at least four passengers, and as the only use of racing is to develop the capabilities of the machine for the use of the public, it seems to me that the conditions in the racing car should, as near as possible, approach those of the car which is sold to the public.

IN reply to a question asked in the House of Commons the other night, Mr. Chamberlain stated that the Postmaster-General had not yet come to a conclusion as to whether motor-cars could be used with advantage for the mail service.

MOTOR-CYCLE RACING AT THE CRYSTAL PALACE.

THE annual motor-cycle race meeting of the Automobile Club was held on the track at the Crystal Palace on Wednesday. Several large cars were in the enclosure, including Mr. S. F. Edge's 50 h.p. Napier car. There was a fair attendance of spectators when C. Jarrott started, unopposed, on an 8 h.p. De Dion tricycle for the hour scratch race for motor-cycles for the *Autocar* Challenge Cup. Jarrott covered the miles as follows: One mile, 1 min. 35 1-5 sec.; ten miles, 15 min. 4 1-5 sec.; twenty miles, 31 min. 48 2-5 sec.; thirty miles, 47 min. 49 1-5 sec.; thirty-six miles, 59 min. 11 2-5 sec. In the half-hour he covered 18 miles 1,465 yards, and 36 miles 798 yards in the hour. Last year Machin, on a 7 h.p. Aster tricycle, covered 39 miles 234 yards in the hour. The five-mile handicap for touring motor-cycles, with engines of not more than 2½ h.p., for the *Motor-Car Journal* Challenge Cup, brought out only one competitor, C. Jarrott, who, on a 2½ h.p. De Dion, covered the distance in 10 min. 10 4-5 sec., as against Steele's 11 min. 2 2-5 sec. last year. The next event was the ten miles handicap for all classes of motor-cycles for the *Automotor* Challenge Cup, this being won by C. Jarrott on an 8 h.p. De Dion, his time being 14 min. 47 sec. as against Buck's performance of 14 min. 2½ sec. a year ago. In the mile motor-bicycle open handicap for Mr. Campbell-Muir's Cup, there were only two starters. The result of this race was:—J. Leonard, 1½ h.p. Werner, scratch, 1; J. Lamb, 1½ h.p. Werner, scratch, 2. Won by half a lap. Time, 1 min. 53½ sec.

THE London and Counties Distributing Company, Ltd., who are running a daily service between London and Tunbridge Wells, have just obtained another 4-ton steam motor-wagon, from Messrs. Julius Harvey and Company, Queen Victoria Street, E.C. The cars are doing the journey in excellent style, and the Distributing Company, who have throughout shown so much enterprise, are to be congratulated upon their success.

WE learn that Mr. Goodall, manager and secretary of the Lincoln Motor Bus Company, has been appointed commercial manager to the Roadway Autocar Company, Ltd., 44, Berners-street, Oxford street, London, who are sole representatives in Great Britain and the Colonies for Mors cars and Renault voiturettes. Mr. Goodall, during his connection with the Lincoln Company, has shown himself to be a conscientious and energetic manager, and his hard work in the interests of the company was favourably mentioned at the last meeting by directors and shareholders alike. We wish him success in his new appointment.

A PORTABLE self-propelling bakery specially intended for military purposes is the latest novelty in the automobile world. The idea is due to M. Schweitzer, of the Société Française de Meunerie et de Panification (Schweitzer) of Paris. The bakery consists of a motor-lorry carrying mixing, kneading and other machines, and a four-wheeled trailing car on which is carried the baking oven. The bread-making machinery is driven by the same engine which propels the car, it being disconnected from the latter when the desired place has been reached and connected up to the machines. Two hundred and twenty pounds of bread per hour can, it is claimed, be produced by this portable plant.

SEVERAL motor-cycle races were held at the Manchester Wheelers' sports at Fallowfield on Saturday last. It was expected that Messrs. C. Jarrott, S. F. Edge, and G. Hunt would be among the competitors, but the two first named gentlemen did not put in an appearance, Mr. Cecil Edge competing in the two matches that had been arranged for them. In a two miles motor cycle (5 h.p.) race, Edge beat Hunt by 200 yds. in 3 min. 45 1-5 sec. Edge was also successful in a mile motor cycle match (5 h.p.), beating Hunt by half a lap in 1 min. 59 sec. A two miles motor cycle handicap race (limited to 5 h.p.) resulted as follows: W. Andrews, Stretford, 1; W. Turner, Hulme, 2; F. Rothwell, Oldham, 3. Time, 4 min. 15 1-5 sec.

A RUN ON A GARDNER-SERPOLLET.

(BY A CONTRIBUTOR.)

IT was with much interest that I was awaiting a long-promised run on a friend's Gardner-Serpellet, and when, on a recent Sunday, its approach was heralded by the sound of a horn at my door (nothing else being audible till the smart-looking little 5 h.p. car pulled up, and one could just hear the blast of the six Swedish burners that formed its furnace) I was prepared to criticise its performance with all the severity of a petromaniac, previous experience of "steamers," at any rate of the smaller class, not having by any means perverted me from the internal combustion principle.

As we were not to start for a couple of hours the owner turned off the oil and water, remarking that it was not easy to keep up steam, or rather heat, when stopping, owing to the pressure in the oil tank running down if no one was in charge, a point which might, one would think, be remedied by an air vessel, with reducing valve, being connected with it. About two hours later, by which time the boiler was nearly, but not quite, cold, we prepared to start, filling up with a couple of gallons more water, which enabled us to see the amount of oily scum in the tank due to inefficient separation—not a large amount, and the ownersaid it was much less since he diminished the lubrication feed, which had been adjusted too freely when he got the car last winter. Having poured a dose of methylated spirit into the furnace, in less than five minutes he pronounced it ready for turning on the oil, when, with a stroke or two of the air pump, the burners promptly began to roar. In two or three minutes a few strokes of the hand pump sent up the steam gauge, and taking besides ourselves a lady and two children as passengers, we started, the car going at a good speed with its rather heavy load.

After dropping our three passengers I was invited to take the wheel, or rather handle bar, and demonstrate the ease with which the car could be driven. So with valves set at cut-off position, and endeavouring to remember (not quite successfully, as appeared later) that the right pedal opened the throttle instead of being a clutch or brake, we started again, and had opportunity of testing the brake-power on some 1 in 10 descents. By the time level ground was reached, the steering—which, by the way, is to my mind somewhat too quick—was sufficiently understood to justify a little more speed; so advancing the engine-pump lever the pressure soon rose to its limit, and the ingenious by-pass that acts as a safety valve gave signs of coming into action by a little puff of steam.

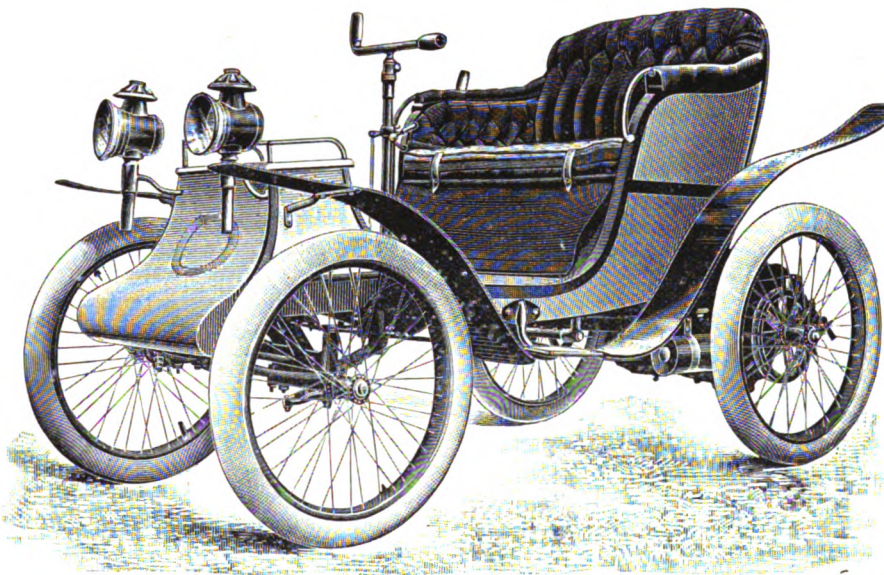
Depressing the throttle pedal, we were soon running at five or six and twenty, beyond which, being new to the car, I did not care to go, though as valves were at cut-off and pumps near their minimum throw, it would not apparently have been difficult to much exceed this. The longer pump strokes were only required when the engine was running slowly or on a hill, and it was evident that skilful management of them would obviate the necessity for much use of the hand-pump.

A little further on the inevitable dog appeared, and, misled probably by our silent approach, refused to clear the road. A hurried attempt to apply the brakes resulted in opening the throttle and a leap forward, corrected only just in time, but, thanks

to the efficient "frein Lemoine," the animal escaped with an inch to spare. We were now at the principal object of our journey—a hill with a gradient rising from 1 in 30 to 1 in 90—and taking the first part at a good pace with valves full open, began to slow down ominously as we approached the steeper portion. "Pump lever too far back," explained my companion; so, advancing it, the pressure ran up, but too late to dispense with a little hand pumping. This soon accelerated our pace, and no further manual assistance was necessary while we rushed up the steepest part at a speed that showed the capabilities of this nominal 5 h.p. car. At the summit I resigned my seat at the helm with a conviction that the troubles of steamer driving were much exaggerated, and that the future of this method of propulsion was by no means, as some would have us believe, "all behind it."

Inquiry elicited that the consumption of paraffin was about a gallon for nine or ten miles (and this in a somewhat hilly neighbourhood) which works out at little over half the cost of a petrol steamer, while the water tank will, with careful driving, last about fifty miles. This has, I understand, been increased in more recent patterns, while the "visible steam" was at no time in evidence except on the steep gradient, and then not to an objectionable extent, though the condenser consisted, apparently, of plain tubes without cooling ribs. It would be foolish to pro-

nounce an opinion on a car after a single trial; but, as far as such limited experience can enable a judgment to be formed, I have never handled one which surpassed this in the combined qualities of comfort, speed, and ease of management.



THE "AUTOMOTO" VOITURETTE.

THE "AUTOMOTO" VOITURETTE.

THE motor-cycle products of Messrs. Chavanet, Gros, Pichard and Co., of St. Etienne, France, are, under the name "Automoto," already well-known in this country.

This week we are able to give an illustration of the two-seated voiturette which the firm has lately put on the market. The frame of the car is of tubular construction and the driving power is supplied by a couple of 2-h.p. air-cooled motors, located in the fore part of the frame, driving the rear axle direct through the medium of a variable gear giving two speeds forward and a reverse. The normal speed of the engine is 1,800 revolutions per minute, but this can be varied by means of the electric ignition. Steering is controlled by a bar, while as to brakes, a foot pedal controls one on the differential, and a hand lever, band brakes on the hubs of the rear wheels. The car is very light and can, it is stated, attain a speed of 25 miles per hour.

It is stated that the Licensing Committee of the Hastings Town Council will not issue any new licenses on account of lack of stand accommodation, but will grant motor-car licenses if the applicants give up their stage coach licenses.

THE British Automobile Commercial Syndicate have secured an order from Lord Iveagh for a 24 h.p. Panhard and Levassor car. Colonel McCalmont has also placed an order with the company for an 8 h.p. Panhard and Levassor with a spider phaeton body. We understand Mrs. McCalmont intends driving the new car herself.

HERE AND THERE.



FIRST HORSE (*loq.*): "Really, my dear, these new summer hats are most becoming!"

Second HORSE (*loq.*): "Yes, dear, and there's that nasty Motor-Car the men make such a fuss about in the bonnet she wore all last winter!"

SOME experiments with a petrol motor-car of Italian construction are at present being carried out by the Fire Brigade authorities at Milan.

THE King of the Belgians arrived at Salzburg on Tuesday afternoon from Paris, and left on Wednesday morning for Bad Gastein in his motor-car.

MR. J. KIRKBY, of 18, Church Street, Preston (opposite the Parish Church, and on the direct route to the Lake District and Scotland), stocks Pratt's motor spirit, also oils for lamps, etc.

THE Walton District Council has passed a resolution to instruct the police to provide for the proper regulation of motor-cars, and has declared that if even a speed of five miles an hour is considered dangerous the driver will be convicted.

WHILST driving some friends home in his motor-car Dr. Walker met with a serious accident near Shaftesbury. For some cause unexplained the car was overturned, the doctor and his friends sustaining some serious cuts and bruises.

MR. EAN CECIL, who started last week on his motor-car from Aberdeen to London with the Hon. Leopold Canning, met with an accident by the way. The car was overturned and Mr. Cecil was thrown out and hurt his leg, fortunately not seriously.

A LINCOLNSHIRE farmer has discovered a new use for motor-cars. When not engaged in carrying its owner his Benz car is slung and made to perform the monotonous task of turning the wheel of the chaff machine that daily cuts the food for the horses on the farm.

At the last meeting of the Standing Committee of the Automobile Club it was reported that Messrs. Coulthard and Co., Messrs. Simpson and Bibby, and the Lancashire Steam Motor Company had withdrawn their signatures to the Tare Limit Memorial on the ground that they did not consider it necessary that the tare limit should be extended to over four tons.

IN trying to avoid a dog a Dunstable motorist ran the wheels of his vehicle into a trench dug for drains, with the result that his two passengers were thrown out and received such injuries as to necessitate their conveyance to Luton Hospital. The owner of the car was able to resume his journey to Stafford.

At the Agricultural Show held at Doncaster on the 3rd and 4th inst. Messrs. W. E. Clark and Co., of that town, had a big display of cycles and motor-cars. Included in the latter were a "Miniature Panhard," fitted with a *tonneau* body seating four persons, a "Raglan" motor-car to carry two or three passengers, and a "Progress" voiturette.

THE motor-car has played an important part in Austrian politics. A vacancy occurred recently in the *Landtag*, and the social democracy of Vienna pressed four motor-cars into the service of their candidate, Doctor Adler. Placarded with the name of the Doctor the four cars scoured the bye-ways of the city, with the result that the democratic candidate was returned by a large majority.

A GREAT deal has been written in the Press from time to time as to the precipitous character of Porlock Hill, in North Devonshire, and the impossibility of an ordinary motor-car ascending it. It may be of interest, therefore, to mention that Mr. Herbert W. G. Goff, touring into North Devon from London on his 7 h.p. Panhard car, with two passengers and a quantity of luggage on board, recently successfully ascended the hill. The climb was accomplished on one of the ordinary 7 h.p. Panhard carriages, without being prepared in any special way.

THE Belgian Automobile Club has written to all its members with regard to the organisation of a tour round Belgium at the end of July or at the beginning of August, asking which route they would prefer and how many days.

NEW PRINCIPLE AUTOCAR, LIMITED, is the title of a company which has been registered, with a capital of £100, to carry on the business of motor carriage, cycle, and vehicle makers, etc. The registered office is at New Broad Street House, E.C.

THE Health Committee of the Liverpool Corporation are provisionally authorising the City Engineer (Mr. Brodie) to order from the Lancashire Steam Motor Company, Limited, Leyland, six motor vehicles at a cost not exceeding £600 each.

DOCTOR MOSELEY, of Ipswich, has for the last three weeks been using a smart Benz Victoria fitted with a hood, and declares himself delighted with it. The car was supplied by Mr. A. F. Garnham, a local agent.

HYTHE has, after much discussion, licensed one motor-car and two qualified drivers for public service. It is proposed to connect the town in time with Folkestone with six cars, each of which, it is stated, will make three journeys to one by horse-drawn omnibuses.

IN connection with the race meeting to be held in conjunction with the North of England cyclists' camp at Harrogate on Bank Holiday, August 5th, a two-mile motor-cycle handicap race is to be run off. The competition will be open to machines with motors of not more than 4 h.p. Two prizes are being offered.

THE Western Duryea Manufacturing Company has been formed to establish works in Los Angeles for the manufacture of motor-vehicles of various kinds. This is the first factory of the kind to be established in Southern California, and it will be under the management of Mr. O. C. Duryea, a son of the well-known C. E. Duryea.

IN connection with a gymkhana which is to be held in the grounds of the Isle of Wight College, Ryde, on the 25th inst., it has been arranged to hold two motor-car competitions. An effort will be made to get some of the county councillors and magistrates together on this occasion for the purpose of demonstrating to them the power drivers have over their motor-vehicles.

THE Electrical Power Storage Company, of 4, Great Winchester Street, E.C., the makers of the E.P.S. batteries, are issuing an illustrated booklet in connection with their extensive exhibit at the Glasgow Exhibition. Some idea of the magnitude of the work undertaken by the company may be gathered from the views of plant supplied to various corporations, of which the book consists.

AT the last meeting of the Roads and Traffic Committee of the Automobile Club arrangements were made for the erection on Birdlip Hill of special danger boards, warning motor-car drivers of the dangerous nature of the hill. A sub-committee, consisting of Colonel Crompton, Mr. Calthrop, and Mr. Shipman, was also appointed to prepare a scheme for traffic regulation for submission to the Chief Commissioner of the Police.

IN connection with the proposed run of the Automobile Club to Portsmouth at the invitation of the Mayor, which was announced to take place on Friday and Saturday, 26th and 27th inst., it has been decided to postpone this until the end of the season. It is considered improbable that a successful run could be organised during the present month owing to the absence from town of a large number of the members of the Club.

AT Edinburgh last week about twenty motor-cars belonging to the Edinburgh Autocar Company, Limited, were sold by public auction. The cars were built by the Daimler Motor Company and the Motor Manufacturing Company, Coventry. There was a considerable attendance of buyers, including several from London, Brighton, and other places in the South. Prices for six Daimler wagonettes, in running order, of 6½ h.p., and seated for ten passengers, ranged from about £100 to £155 according to the condition of the vehicles. A Lifu steam car, seated for eighteen passengers and having engines capable of developing 25 h.p., realised only £105.

THE "BIG EVENT" OF 1901.

THE 500-miles trial of reliability, which will take place at Glasgow from September 2nd to the 6th, has every prospect of being a big success. It is being organised by the A.C.G.B.I. with the co-operation of the Scottish Automobile Club, and will be held officially under the auspices of the Glasgow International Exhibition Committee, who will give medals for the successful vehicles.

The principle underlying the rules is that the trial is a trial of reliability. There are to be three hill climbing trials. In these, speed will be an important factor, but, in calculating the marks to be given, the cost of the vehicle and the number of passengers carried will also be important factors. Excepting in these hill-climbing trials no advantage, from the point of view of marks, will be obtained by a vehicle which travels at more than ten miles an hour. Marks will be deducted for all stops other than compulsory stops, stops for traffic, or tire troubles. Speed in excess of that required to gain the maximum marks (viz., ten miles per hour on the open road, and eight miles per hour or less in traffic) will therefore be useless, except during the three hill-climbing trials. The Judges' Committee will, however, take into consideration many points in connection with the construction and behaviour of the vehicles. The number of cars of any particular type and horse power entered by a manufacturer or agent is limited to two. The trial is open to tourist cars only. Racing cars will not be admitted.

There will be three sections, as follows:—Section I.—Motor-vehicles, entered by manufacturers or by authorised agents. Section II.—Privately owned vehicles entered by members of the Club. Section III.—Parts of motor-vehicles, entered by their manufacturers or authorised agents. Sections I. and II. will be divided into five classes, viz.:—Class A.—Cars declared at a selling price of £250 or less, with seats for not less than two passengers, including driver.—Class B.—Cars declared at a selling price of more than £250, but not more than £350, with seats for not less than three passengers, including driver.—Class C.—Cars declared at a selling price of more than £350, and not more than £500, with seats for not less than four passengers, including driver.—Class D.—Cars declared at a selling price of more than £500, with seats for not less than four passengers, including driver.—Class E.—Motor-cycles for two persons or more.

If there be shown a necessity, special classes will be made for light delivery vans, heavy motor-vehicles, public service vehicles, and electrically-propelled vehicles, for which there will be special routes and separate awards. Section III.—The parts which may be entered are:—Class A.—Tires, pneumatic, fitted to vehicles weighing with loads 17 cwt. and under. Class B.—Tires, pneumatic, fitted to vehicles weighing with loads 21 cwt. and over. Class C.—Tires, solid, fitted to vehicles weighing with loads 21 cwt. and over.—Class D.—Wheels. Class E.—Springs. Class F.—Axles.

The number of cars of any particular type and horse-power entered by a manufacturer or agent shall be limited to two. The entrance fees in Section I are: £30 per vehicle if paid after Monday, July 1st, at 12 noon, and before Thursday, August 1st, at 12 noon. £40 per vehicle if paid after Thursday, August 1st, at 12 noon, and before Saturday, August 24th, which is the final date of entry. The entrance fee for delivery vans and heavy vehicles is £20 up to August 1st, at 12 noon, and £25 after August 1st, and before August 24th, at 12 noon. The entry fee in Section II. is £5 per vehicle if paid before Thursday, August 1st, at 12 noon; which is the final hour

for entering. It must be understood that the owners of vehicles entering in Section II. are entirely responsible for the provision of a suitable observer and the payment of his expenses. In Section III. the entrance fees are as follows:—Class A, tires, £25 per set. Class B, wheels; Class C, springs; Class D, axles; £10 per set. To be paid before 12 noon on Thursday, August 1st.

The trials will comprise certain hills on which separate records from those of the day's run will be taken of the time occupied by the various vehicles in making the ascents. The marks awarded for the hill-climbing trials will be based on a formula in which speed, number of passengers carried, and price are the factors.

The Judges' Committee will hold special tests on Saturday, August 31st, and at other times, to ascertain whether the trial vehicles are fitted with sufficient brake power, and specially whether the brakes are so constructed that they will prevent the vehicle from running backwards if stopped on a steep up gradient. Certificates given in connection with the trials will be endorsed with a statement as to the efficiency of the brakes, as regards backward as well as forward running.

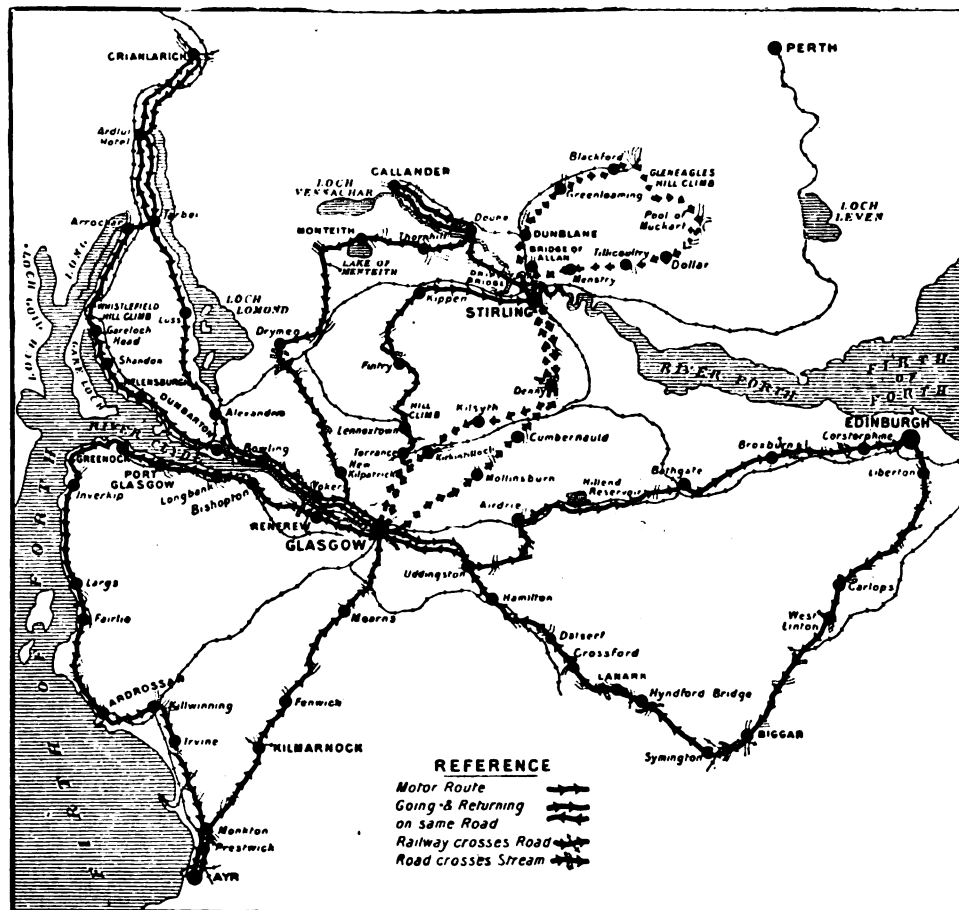
The Council of the Glasgow International Exhibition will give the medals on the recommendations received through the Sports Committee of the Exhibition from the Judges' Committee appointed by the Automobile Club:—Section I.—Gold and silver medals, as first and second prizes in each class. Section II.—Privately owned vehicles; silver commemorative medals to the owners of vehicles which successfully complete the trials. Section III.—Parts; a gold and silver medal, as first and second prizes in each class.

The Judges' Committee, in arriving at their decisions, will give marks principally on the results of the trial, but will also take into consideration:—(a) Price; (b) weight; (c) h.p., shown by performance; (d) persons carried, or load; (e) price in proportion to seating capacity occupied; (f) price in proportion to power of motor; (g) power in proportion to seats occupied; (h) power in proportion to weight; (i) mechanical efficiency as shown by hill-climbing trials; (k) simplicity of transmission; (l) accessibility of mechanism; (m) quality and sufficiency of speed gear; (n) easiness of adjustment; (o) steering

gear; (p) brakes and brake gear; (q) ignition arrangements and apparatus; (r) general design, mechanically; (s) general design, appearance; (t) workmanship, especially of machinery; (u) condition of car at end of trial; (v) breakages and defects not previously mentioned.

Certificates will only be given in respect of the vehicles which have made an average of not less than eight miles per hour on the total trials, after deducting loss of time in controls, by tire troubles and by compulsory stops.

If a competitor in Section II. desires to obtain an official certificate from the Judges' Committee, he must comply with the rules which govern vehicles in Section I. as regards date of arrival in and departure from Glasgow, display of his vehicle nightly at the Glasgow Exhibition, its custody in the Club storage building, defined time and number of persons for replenishing fuel, lubrication, and adjustment, etc., etc. An owner in Section II. may, however, elect to obtain only the records of daily runs and hill climbs, and a commemorative medal. In such cases, all that is required is that he shall be present with his vehicle at the daily starts, with an observer, and shall run through the trial, generally conforming to all the regulations except those governing the control of the vehicle from the finish of one run to the commencement of the next. His record will be specially endorsed to the effect that the Judges' Committee have no knowledge as to what repairs (if any) were effected, or changes made in the vehicle between the daily runs, as the vehicle was in the hands of the owner and not in the custody of the Judges' Committee.



MAP OF ROUTES.

The Club will give certificates to drivers of motor-vehicles who may successfully and properly drive a vehicle throughout the trial, provided that the vehicle shall successfully accomplish the trial.

Competing vehicles must be in Glasgow at the place appointed on Friday morning, August 30th, at 10 a.m., otherwise they may be disqualified. The vehicle will then be marked by the Judges' Committee. From that time, no part must be replaced before Saturday evening, September 7th, unless notice in writing of such change be delivered to the observer or Club secretary or his deputy within twelve hours of the change being made. Infringement of this rule will entail disqualification.

Competing vehicles will be displayed daily in the grounds of the Glasgow Exhibition from the conclusion of the run until 10 p.m., or such earlier hour as may be hereafter announced.

On running days the start from the Club storage building will take place at 8 a.m. precisely. Vehicles will be started from the Club Storage building on the first day (Monday, September 2nd), in sections, and in the order in which they are entered. On subsequent days they will be started from the Club storage building in the order of their taking rank, and will keep that order to the outward control, where they will be restarted in the same order at two minutes intervals.

Before the beginning of each day's run, a vehicle, in addition to the time necessary for it to run from the Club Storage building to the clearing enclosure, will be allowed on arrival at the enclosure half an hour for cleaning of carriage work only, and half an hour for replenishing fuel, lubricating, and adjustment. One mark will be deducted for every minute occupied in replenishing fuel, oiling, lubricating, and adjustment in excess of the allowance of thirty minutes. If a piece be replaced the driver must so inform the Club secretary in writing under pain of disqualification. The Club will endeavour to make arrangements for fuel to be supplied in the cleaning enclosure.

The vehicles must remain in the Club Storage at Glasgow all day on Saturday, September 7th, for examination by the Judges, and must not be removed without authority.

Every town and village through which the route may pass will be a control, and unless otherwise stated in the route-directions, will be deemed to commence at the first house of such town or village adjacent to the route, and to similarly end at the last house of such town or village adjacent to the route. The carrying of spare outer covers of pneumatic tires attached to or on a motor-vehicle during a trial run is prohibited.

Every motor carriage shall bear a metal plate on the front and a plate at the back. Such plates each to measure eight inches square, and to have painted on them the official number of the vehicle or part. These number plates with numbers thereon may be obtained at the Automobile Club (free) between Monday, 19th, and Saturday, August 24th.

Mr. Claude Johnson, the Secretary of the Club, has been recently in Glasgow preparing for these trials. After travelling over a number of suggested routes, and after considerable discussion and careful consideration, a series of roads have been selected, of which we publish an admirably compiled map. This gives the whole of the various routes for each day in the clearest manner. The daily routes will be as follow:—

Sept. 2. Glasgow—Edinburgh—Glasgow, total distance, 116 miles.

Sept. 3. Glasgow—Ayr—Glasgow " " 107½

Sept. 4. Glasgow—Callander—Glasgow, 96½ miles, including " hill-climbing test beyond Lennoxtown.

Sept. 5. Glasgow—Stirling—Glen Devon—Stirling—Glasgow, 95½ miles, including hill-climbing trial at Gleneagles.

Sept. 6. Glasgow—Crianlarich—Glasgow, 115½ miles, including hill climbing test beyond Gareloch Head.

Although from the report of the Secretary it appears that nails on the road are very numerous, and promise a good deal of trouble for those vehicles fitted with pneumatic tires, the roads generally around Glasgow are excellent for the purposes of the trial, especially in view of the intention of the Committee that it shall be one of reliability and not a trial of speed.

FURIOUS DRIVING CASES.

At Yarmouth Alfred Henson was summoned for driving a motor-car at an excessive speed along the Marine Parade recently. The case was proved by Sergeant Mason and Constables Legood and Fish, all of whom said defendant was driving at a furious pace despite the fact that many people were about. Defendant said he had no idea of the rate he was travelling at, but he had the machine well under control, and could have stopped it dead if he wished. He saw no people in the way, and did not know he was exceeding the regulation pace. The magistrates fined defendant, as it was the first offence, 10s. and costs, and the Chairman remarked they could have fined him £10.

At Chelmsford County Sessions, George Kahn, of London, was summoned for driving a motor-car between Ingatestone and Chelmsford at a greater speed than twelve miles an hour, on Sunday, June 30th. Police-sergeant William Cowell stated that the defendant's motor-car passed him at Ingatestone at 11.26, going at about twelve or fourteen miles an hour, but before he lost sight of it the speed, he believed, had been increased to twenty miles an hour. Witness went to the police-station and telephoned to the police at Chelmsford. Afterwards, he compared watches with P.C. Beesley by telephone, and they both agreed. The

distance from Ingatestone, where he saw the motor, to the Shire Hall, at Chelmsford, was six miles. Inspector Peters calculated that the defendant travelled at the rate of twenty-one miles an hour from Ingatestone to Chelmsford. P.C. Beesley deposed to stopping the motor-car in High Street, Chelmsford. Defendant gave evidence to the effect that he left Hampstead at eight o'clock, and stayed on the way for half an hour for breakfast. The distance from Hampstead to Chelmsford was about thirty-four miles, and he arrived at the latter place at 12.43. He did not know what time it was when he passed through Ingatestone. A fine of £5 and 3s. costs, was imposed.

At the Stipendiary's Court at Fenton, Harold Keates Hales, cycle agent, Burslem, was summoned for furiously driving a motor-tricycle to the danger of the public. Police-sergeant Dowler found that defendant covered 300 yards in less than half a minute. Mr. J. Hughes, rate-collector, Burslem, said that the machine could not be driven at more than ten miles an hour, and that the roads traversed had gradients of one in twelve and one in fifteen, up which the machine was travelling. The Stipendiary said this evidence was absurd, and he did not believe it. Defendant was fined 20s. and costs.

At Chepstow, Dr. Charles Corben, of Caldicot, was summoned for furiously driving his motor-car, to the danger of the public, at Mathern. Police-constable Hiron alleged he went from eighteen to twenty miles an hour, so that witness had to get off his bicycle and get to the side of the road out of the way. Defendant, who had been twice previously warned by the police, was fined £1 and 8s. 6d. costs.

At Brentwood, Charles Bluemel, of Forest Gate, was summoned for driving a motor-car down Brook Street Hill, Brentwood, at a greater speed than twelve miles an hour. The police estimated the speed at twenty miles an hour. For the defence witness denied that the speed was more than twelve miles an hour, and counsel protested against the police guesses as to speed being accepted as evidence. A fine of £3 and 17s. 6d. costs was, however, imposed.

At Brentwood last week, Leonard Beadle was summoned for driving a motor-car at a greater speed than twelve miles per hour. Mr. Staplee Firth, solicitor for the defendant, submitted that there were two gentlemen on the Bench who were not fit and proper persons to try the case, because they had shown distinct bias on the subject. Police-constable Taylor, for the prosecution, said the car was travelling over twenty miles an hour. Mr. Firth: Didn't you go out specially hunting motor-cars on this particular Sunday?—No, sir. How many did you bag?—There are two here, sir. How many did you report?—I decline to answer. That is police business, sir. The clerk held that the question need not be answered. The witness estimated the width of the courtroom at 40ft., whereas it is actually 24ft. He denied, however, that he had made as great a mistake in judging the pace of the motor-car. Mr. Frank Davey said the pace was not under twenty miles an hour. The defendant, on oath, said he was an experienced motor driver. He had driven at least 17,000 miles in London, and had never had an accident or received a complaint. On this day he drove from Blackheath to Southminster and back. There were five persons on the car. The speed was about eleven miles an hour. Thomas E. Quick, Wm. Whiteway, and Wm. Whiteway, jun., gave similar evidence. Mr. Firth said he confidently asked the Bench to dismiss the case. The Chairman: We are satisfied about the case, and there will be a fine of £3 and costs 18s. 6d. Mr. Firth asked for a stay for seven days, saying he should move for a special case. He should like to have the view of the Bench on the question that mere opinions were not evidence, which was granted.

At Southampton, three summonses were heard against motorists for proceeding at excessive rates of speed in the Avenue, Southampton. Chief Constable Berry explained that he had had two officers on duty in the Avenue in order to time the rate at which the motor-cars referred to travelled. The officers took up positions a quarter of a mile apart with watches regulated exactly alike. When the cars passed the first officer he held up his hand, and the second recorded the time when the cars passed him. Dr. Griffin, of Southampton, was the first defendant. He appeared, and was represented by Mr. Lamport. The police evidence was to the effect that Dr. Griffin did the "quarter" in his motor-car in fifty seconds on July 4th. The Act provided that the speed should not exceed fourteen miles per hour, and the above rate was equal to between sixteen and eighteen miles per hour. Defendant did not contest the evidence. His advocate said this was practically the first case of the character that had been before the Court, and submitted that payment of the costs would meet the case. The Bench adopted this view, and dismissed the information on payment of the costs, 4s.

The second defendant, J. W. Dowgall, of Southampton, did the "quarter" in a motor-car in forty-five seconds on July 4th, equivalent to between eighteen to twenty miles an hour. Mr. C. Martin appeared for the defendant, and the Bench dealt with defendant in the same way as they had done in the first case.

The third defendant, Mrs. Peach, of Byfleet, Surrey, did not appear, but was represented by Mr. Lamport. She, according to the police, covered the quarter in thirty seconds on July 6th. It was stated that Mrs. Peach's motor was proceeding down hill at the time its rate of progress was estimated; the other two cars were going up hill. Chief Constable Berry pointed out that this was the most serious of the three cases. The Bench, however, dealt with the summons as they had done with the other two.

At Epping, Lord Carnarvon was summoned for furiously driving a motor-car on June 23. Police-constable Sutch said that at 6.30 p.m. on June 23 he was standing outside the Blacksmiths' Arms at Thornton Common when the defendant went past in a motor-car at the rate of twenty-five miles an hour, and failed to pull up when witness held out his hand and called, "stop!" Two other witnesses corroborated. Lord Carnarvon gave evidence on his own behalf. He had travelled in motor-cars over a distance of 40,000 or 50,000 miles in England, France, and other countries. On this occasion he was driving a small Panhard. It was fixed at half-speed and it was impossible to exceed 10½ miles an hour. While passing the constable he was going about eight miles an hour because the axle was heated and he feared a collapse. The collapse actually occurred before he got to Epping. He saw the constable holding out his hands, but did not understand what he meant. His Lordship offered to give the magistrates a practical demonstration of the speed of the machine. The offer was declined. In reply to Mr. R. Bury, his Lordship said he would give £500 to anyone who would drive the machine at a speed of twenty miles an hour. Mr. McCreery, who was with Lord Carnarvon in the car, and two machinists named Cross and Trotman supported the Earl's statement. The Chairman said the magistrates thought the witnesses for the prosecution were mistaken as to the speed. It was a difficult thing to estimate. In arriving at this conclusion they did not cast any reflection on the police. The summons would be dismissed. A summons against Trotman, the Earl's engineer, who occupied another car, was also dismissed.

At Ridgway, Mr. Ernest Brown was summoned for driving a motor-car at excessive speed. The defendant stated that he had the machine under such control that at a speed of fifteen (not twenty) miles an hour he could pull it up within a distance of five or six yards.

At Kingston, Charles Tournier, of The Beeches, Walton, was summoned for driving a motor-car at a speed greater than twelve miles an hour at Oatlands Drive, Walton, on June 29th.—P.C. Gamlin stated that the defendant was driving at a rate of from twenty to twenty-five miles an hour. On being stopped later in the day, defendant admitted that he was travelling sixteen miles an hour.—P.C. Gamlin, in reply to the Chairman, said that the defendant was not only going more than twelve miles an hour, but was travelling to the danger of the public. It was dinner-hour, and there were several children about, who narrowly escaped being run over. Superintendent Boon said that he had received several complaints about this particular motor-car. The Chairman said it appeared to him that the result of the furious driving of motors in this neighbourhood would result in their all being numbered, and then the owners of the cars would only have to thank those who drove recklessly. In this case the Bench must convict, and the penalty would be £5.

At Farnham, Surrey, William Hobbs, who admitted a charge of driving his motor-car at too rapid a speed at York Town and Frimley, was fined 40s. and costs, and cautioned that on a second conviction a much heavier penalty would be imposed.

At Lymington, Thomas Burt, of Totton, cycle agent, was fined £1 and 11s. costs for driving a motor-bicycle furiously on the Brockenhurst Road, on the 15th ult. Defendant pleaded not guilty. P.C. Pollard stated defendant went 1,065 yards in 1min. 40sec., at about the rate of twenty-seven miles an hour.

At Lancaster, Thomas Head was summoned for furiously driving a motor-tricycle on the road between Parton and the Longlands Inn at 9.30 on the night of the 7th inst. A police officer said he timed the defendant, who travelled at the rate of twenty-five miles an hour. The defendant said that the tricycle could not travel at that speed; that he was putting oil from the reservoir tank into the engine at the time, which always had the effect of slowing down the machine, and that, as a matter of fact, he had to pedal to get the machine over the rising ground before he reached the Longlands Inn. The Chairman said the magistrates had personal experience of the pace motor drivers went along the road, and twenty-five miles an hour was an unreasonable speed. A fine of £5 and costs, or in default a month's imprisonment, was imposed.

PANHARD-LEVASSOR.

In the Chancery Division of the High Court of Justice, before Mr. Justice Farwell, on Monday, the case *La Société Anonyme des Anciens Etablissements Panhard et Levassor v. the Panhard-Levassor Motor Company (Limited)* and others, was heard. The plaintiffs in this action are a company constituted under French law in 1897 in Paris, in succession to the former firm of Panhard et Levassor. They alleged that the words Panhard-Levassor and Panhard were universally known in the trade of the United Kingdom and elsewhere as exclusively designating the goods, and particularly the motors and motor-cars manufactured and sold by them and their predecessors in business, and that they had the exclusive right to the use of those names in such connexion. The defendant company was registered in May, 1900, with a capital of £100. The plaintiffs alleged that the seven defendants, F. G. Exell, F. R. N. Kent, F. C. Dawson, W. Bustard, F. W. Stiff, H. H. Idle, and P. W. Evannett, who were the signatories of the company and the only shareholders, wrongfully and fraudulently and with intent to injure the plaintiffs, conspired to form and register the defendant company. They further contended that, by the

existence of the defendant company, the public and purchasers and users of motor-cars in the United Kingdom and elsewhere would be led to believe that the defendants were carrying on business as agents for the plaintiffs; that the public and users of motor-cars would be deceived by being induced to purchase or use motor-cars or parts thereof manufactured or sold by the defendant company as and for those of the plaintiffs; that goods inferior to those of the plaintiffs could be produced and sold and used under a name so colourably resembling that of the plaintiffs, as to be calculated to deceive the public; and that the plaintiffs would be prevented from registering themselves as a company under their own name, or from registering a company under a name similar to their own to carry on business as their agents or otherwise. The plaintiffs accordingly claimed (1) an injunction to restrain the defendants from using the names of Panhard and Levassor, or either of them, or any title or description including those names, or otherwise colourably resembling the name of the plaintiffs in connection with the manufacture, use, or sale of, or other dealing in motor-cars or parts thereof; and (2) an injunction to restrain the seven individual defendants from allowing the defendant company to remain registered under its present name or any such title or description. The defendants alleged in answer that the use of the word Panhard or Panhard-Levassor referring to a motor was understood in the trade to refer merely to the general type of car, and not to the manufacturers; that a Panhard or Panhard-Levassor car might be known as a German Panhard or a French Panhard and so on, according to the country of origin, or, if a special type Panhard car were made by a particular maker, by the name of that maker in addition to the name Panhard or Panhard-Levassor. They also contended that the plaintiffs were manufacturers in Paris of motor-cars made under a group of patents taken out in France to protect a system of making motor-cars known as the Daimler system, the English patents relating to which system were owned by the British Motor Company, and that the plaintiffs had no licence from the British Motor Company to import into or deal with in England cars manufactured under the Daimler patents in France. As the defendant company intended to acquire licences to manufacture and sell in England motor-cars constructed according to the Daimler patents, the defendants stated that the object in forming the defendant company and another company, known as the Panhard Motor Company, was to prevent the British Motor Company from granting a licence to any other person to trade in England under the name of Panhard. They denied that the defendant company had as yet manufactured or sold any motor-cars, and submitted that, if and when they did, they would not infringe any patent or other rights which the plaintiffs might have in this country.

Mr. Justice Farwell, in delivering judgment, said that the plaintiffs were a well-known firm of European reputation. They had no agency in England until last December, but they had sold motor-cars in England indirectly, and Englishmen had purchased their cars in France and brought them over to this country. He held that they had proved that England was one of their markets. The defendants had registered a company under the name of Panhard-Levassor. It was alleged that they had done so in order to shut out the plaintiffs, but he could find no sort of excuse or justification for the use of the plaintiffs' name. He had been in some little doubt as to whether he could grant relief against the seven individual defendants, who seemed to constitute the whole company, there being no other shareholders. It would, however, be unfortunate if a company could be formed to do illegal or fraudulent acts with no one liable except the company. He thought that in the circumstances relief against the company involved similar relief against the seven defendants, and the plaintiffs were entitled to the injunctions claimed with costs.

THE AUTOMOBILE CLUB'S QUARTERLY 100-MILE TRIAL.

The quarterly 100-mile trial of the Automobile Club was held on Tuesday, the 2nd inst. The usual route was followed, viz., from the 2nd milestone from the Marble Arch, via Ealing, Uxbridge, Beaconsfield, High Wycombe, and Stokenchurch to the 52nd milestone (outskirts of Oxford), and back. Total: 100 miles. The roads were in good condition on the outward journey, but, returning, were very heavy. Roads were up in Ealing, which congested the traffic and impeded progress. The weather was fair in the morning; heavy rain fell in the afternoon.

The hills on which hill-climbing trials took place were:—(a) The steep portion of Dashwood Hill, commencing at 33rd milestone and ending at danger board at the top—1,180 yards, having an average ascent of 1 in 16.0 and including 352 yards of 1 in 10.9; (b) One mile including Dashwood Hill, commencing at the 33rd milestone and terminating at the 34th milestone, having a total rise of 241 feet in 1 mile, including 275 yards of a gradient of 1 in 27.7 and 600 yards of a gradient of 1 in 11; (c) Aston Hill on the return journey; distance 1 mile 1,100 yards, having a total rise of 316 feet and including 1,910 yards of a gradient of 1 in 21.

Only two vehicles took part in the trials, as follows:—

A Humber voiturette (Humber, Ltd., Coventry), fitted with De Dion motor having cylinder 3½ in. diameter by 3½ in. stroke, the weight complete, but without passengers, being 12cw.

The following are the results as given by the observer:—

Speed on outward journey including time occupied by all stoppages.—Up to the legal limit of twelve miles per hour.

Number and cause of stoppages.—Two stops in ascending Dashwood Hill, and run abandoned owing to breaking of piston at end of forty-seven miles.

Hill-climbing speeds.—(a) The steep portion of Dashwood Hill:—Time, to danger board, 15 min. 30 sec. = 2.5 miles per hour. (b) One mile, including Dashwood Hill:—For the mile 17 min. = 3.5 miles per hour.

After passing the thirty-third milestone, and on ascending Dashwood Hill, two passengers alighted. Half way up Dashwood Hill the motor stopped for 7 min. 10 sec., and restarted with two on board including driver. Five minutes later it again stopped for half a minute. Sixty yards from the forty-ninth milestone the car again stopped, and on examination it was found that the piston was smashed, and the trial had consequently to be abandoned.

A 4½ h.p. De Dion voiturette, to seat three, entered by Mr. J. M. Gorham. The results obtained were:—

Quantity of petroleum spirit used on the journey.—3 gals. 3 qtrs.

Quantity of water used on journey.—3½ pints.

Average cost of fuel per mile at 1s. 3d. per gallon.—56d. per mile.

Speed.—Up to the legal limit of twelve miles per hour.

Number and cause of stoppages.—At fifty-second milestone car was stopped for 5 min. 43 sec. to lubricate and fill petrol tank.

Hill-climbing speeds.—(a) The steep portion of Dashwood Hill:—Took three passengers up all the way except for 11 1-5 sec. during which one passenger alighted, as the car was forced to take the worst side of the road. Time, to danger board, 4 min. 48 sec. = 8.3 miles per hour. (b) One mile, including Dashwood Hill:—Took three passengers up all the way. For the mile 5 min. 52 sec. = 10.2 miles per hour. (c) Aston Hill:—Took three passengers up all the way. Time, 10 min. 4 sec. = 9.6 miles per hour.

NO LIGHT.

At Chelmsford, Robert Charles P. Knight, motor-car engineer, of Chelmsford, pleaded guilty to driving a motor-car at night without exhibiting a red light in the reverse direction to which he was proceeding. —A fine of 2s. 6d. and 6s. costs was imposed.

MISTAKEN IDENTITY.

At Ipswich, Charles Warren was charged with furiously driving a motor-car. —On Tuesday evening P.C. Morris, who was on the Cornhill, saw the defendant approaching from Westgate Street with two others in a motor-car. The constable estimated that defendant was driving at eighteen miles an hour. —A cabman, named Whyatt, deposed to the car being stopped by Morris, who stood in front and held up his hands. —He estimated the speed at fifteen miles an hour. —The defendant said he had never before been stopped by a police constable, and suggested that on the present occasion the constable was mistaken. A car driven by a Frenchman had been repaired by his employer (Mr. Botwood), and he suggested that individual, who was trying his car through the town, had been mistaken for witness. —Colonel Josselyn said the Magistrates believed it was a case of mistaken identity. There was no doubt the car was driven furiously, and had the right person been summoned, he would have been fined. The case against the defendant was accordingly dismissed.

CURIOUS POINT OF LAW.

In the Aberdeen Sheriff Court, William Hepburn was charged with driving a motor-car at a rate of between twenty and thirty miles an hour along one of the principal streets in Aberdeen on 16th ult. The charge was brought under Section 6 of the Light Locomotives on Highways (Scotland) Regulations, 1896, made by the Secretary for Scotland. Accused pleaded not guilty, and his solicitor submitted an objection to the charge to the effect that Section 6 was not in force at the time of the alleged offence. According to the section, it was specifically laid down that it must be brought before both Houses of Parliament, and the Secretary of Scotland, when written to on the subject, had admitted that that was not done. As a matter of fact, the Section was not brought before the Houses of Parliament until Monday last. The Sheriff adjourned the case for a week in order that the Procurator-Fiscal might answer the objection.

WEIGHT OF RACING CARS.

In view of the proposal of the Automobile Club de France that the weight of racing cars should be limited, the following letter was addressed to Chevalier Rene de Knyff, the President of the Commission Sportive of the A.C.F., as far back as the 31st May last (six weeks ago) by Mr. C. Johnson, the Secretary of the A.C.G.B.I.:—

"Please permit me to thank you for the courtesy and kindness extended by you to me and other members of this Club during our recent visit to Paris. Constructors here are anxious to know whether the suggestion that the weight of motor-vehicles for races held under the rules of the A.C.F. should not exceed 900 kilograms is to come into force, and, further, whether the rule will be applied to the race for the Gordon-Bennett Cup. Some of the constructors are anxious to begin to design carriages in order to have them ready for the Nice races held under the rules of the A.C.F. If the weight limit rule be adopted, it must necessarily affect the construction of racing carriages in other countries.

I suppose your Committee could not see its way to hold a conference on this question in Paris of the representatives of the various Clubs before your Committee come to any decision. You will see for yourselves that the question is of international importance.

"As regards the Gordon-Bennett Cup I presume that the rule cannot be introduced into the rules affecting this race without the concurrence of the members of the International Commission. Two or three of our constructors here appear to think that the best results would be most easily arrived at by there being no limits. You will, I am sure, recognise the importance of a decision being come to at an early date, as, until such decision is arrived at, the designing of racing carriages must be at a standstill."

Owing probably to the heavy work which fell to the lot of the Commission Sportive in connection with the organisation of the Paris-Berlin Race, no reply to this letter was received. Last week, however, Sir David Salomons, the chairman of the Foreign Relations Committee of the A.C.G.B.I., visited Paris and represented to members of the A.C.F. that, leaving the Gordon-Bennett Race out of the question, if the A.C.F. intend that the rule as to weight limit should apply to races organised in countries other than France, the opinions of the Automobile Clubs of countries other than France should be considered, and, if necessary, an international conference should be held.

The representatives of the A.C.F. most courteously and readily fell in with this suggestion, and on Monday last the Club secretary of the A.C.G.B.I. saw M. de Knyff and arranged that the matter should be discussed by the A.C.G.B.I., and its opinion communicated to the A.C.F. without delay. Consequently, a conference between the Races Committee, representatives of manufacturers and all members of the Club who may be interested in this question, will be held at the Automobile Club, 4, Whitehall Court, London, S.W., on Wednesday next, the 24th inst., at 4.30 p.m. It is hoped that all manufacturers will be represented, whether they may or may not have any present intention of competing in races, so that the question may be discussed by those most competent to deal with it. In the event of manufacturers not being able to attend, they are invited to send their opinions in writing as to whether the proposal to limit the weight of racing cars to one ton is or is not desirable.

FATAL ACCIDENT.

An inquest was opened at Haslemere, by Mr. Coroner Roumieu, on the body of Thomas Pash, gas-fitter, of Waterloo Road, London, who died at Haslemere Cottage Hospital from injuries sustained in a motor-car accident when descending Hindhead. The deceased was one of a party of banqueters taken by their employer, on Saturday last, to Hindhead in three motor-cars. In coming down Hindhead the driver of one of the cars ran into the bank and overturned the vehicle whilst steering clear of some horses grazing in the road, the thirteen occupants being pitched out. The deceased was picked up insensible, but none of the others were seriously hurt. The inquest was adjourned until Friday.

THE A.C.F. have decided to accord, in commemoration of the Paris-Berlin race, the large bronze plaque to Mors, and medals to Panhard and Levassor, Renault Bros., De Dion-Bouton and Company, Henry Fournier, Etienne Girard, Louis Renault, and Osmont. The press have not been forgotten, and Mr. Georges Prade of the *Auto-velo* and Mr. Paul Meyan of *La France Automobile* have also been accorded medals for their help in defending the rights of the industry.

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THE Motor-Car Journal.

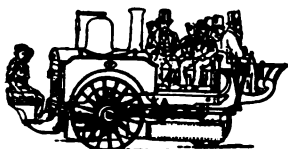
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COMMENTS.



LIKE many another provincial town near a great city, yet unable to derive the smallest benefit from that proximity, owing to the sluggish ways of its railway, Maidstone has watched with envious eyes the development of the London and Tunbridge Wells motor-car service. Traders and farmers of the district have now called

in the aid of the London and Counties Distributing Company and are going to have a service of their own. The company has approved of a motor-wagon constructed by a local firm, Messrs. Jesse Ellis and Co., which has in a recent trial shown to great advantage. With a 3-ton load a trip was made to Sittingbourne, *via* Detling Hill, which has a gradient varying from 1 in 6 to 1 in 10 for close on a mile. In spite of this the wagon reached its destination with only two stops for oiling in three hours. Thus will Maidstone give impetus to new local industry whilst fostering the old.

The Mabley Car.

WE had the opportunity last week of inspecting a somewhat novel type of light car, about to be put on the market by Messrs. John Marston, of Wolverton. Though a four-wheeler, it embodies the principle of double steering, the arrangement of the four 26 in. wheels being somewhat that of the old Coventry rotary sociable, the fore and aft ones—nearly but not quite, in the same track—steering, while the two on the main axle are the drivers, it being claimed that by this arrangement side-slip is impossible. The body resembles the two halves of a *tonneau* arranged longitudinally, the two passengers sitting somewhat as on the Pennington torpedo, and the rear one steering, with the ignition, gas, air, and compression levers under his hand, together with the two speeds and a starting handle. The length of the car is 7 feet, and width over all 43 inches, the engine being a 2½ De Dion, with water-cooled head, for which a 2½ h.p. is, we understand, to be substituted in the standard type. This drives, through a belt, a pair of pulleys in the rear of the main axle, and connected with it by chains with a loose pulley between, somewhat as in the 3 h.p. New Orleans. The engine is placed over the front wheel, and an ingenious spring suspension enables all four wheels to remain on the ground in spite of irregularities. As may be gathered, the little car has about the proportions of a quad, but the seats are roomy and comfortable, and the design at least does not err on the score of want of novelty.

Motor Accidents.

THESE, as it is perhaps still necessary to reiterate, are exceedingly rare, the more so when we consider the increasing number of drivers undergoing their novitiate; and the fact that each accident of any gravity is brought to the attention of every automobilist in the kingdom, as it is hardly exaggeration to assert, will enable them, at any rate, to realise this. It is gratifying, however, to find that the Press generally is ceasing to give that undue prominence to motor mishaps that

it denies to equally serious accidents of other kinds. The very fact that the spread of automobilism has thrown into increased relief the unreliability and risk attaching to the horse, though temporarily prejudicial, is having its effect in making converts to the safer and speedier means of progression. We have of late repeatedly heard the owners of troublesome horses express their intention of abandoning them for a car, which, with other indications, encourage a hope that the cloud—literal, as well as metaphorical—at present threatening will give way to the sun—or should we rather say the “phare Blériot”?—of (rapid) progress.

A Caution.

SUCH danger as there is, however, may arise from a cause to which it is worth while drawing attention. Improvements of many kinds can frequently be made in old cars, which considerably increase their efficiency, while the performances of more modern ones habituate us to speeds which we should have formerly been very cautious of approaching. But frequently the brake-power and reliability of steering in such old vehicles have not been correspondingly improved, making them risky at what we now consider merely moderate speeds, and as the pace at which a car can go on down grades only depends on the driver's state of mind, his diminishing respect for milestones may lead to what, under the circumstances, is recklessness; to say nothing of considerations as to the ability of the vehicle to stand increased strains.

Round the World on a Motor-Car.

MR. MAURICE ROBINSON, of New York, proposes to start from Calais next spring on a round-the-world motoring tour. The vehicle selected for the enterprise, and which is now under construction, is of the Turgan-Foy caravan order which recently toured so successfully in Algeria. Mr. Robinson will be accompanied by one mechanic, and will carry a liberal supply of stores, which will be replenished by a French firm at certain points along the route. Leaving Calais in May, it is proposed to proceed to Moscow, *via* Paris and Berlin. From Moscow the line of the great Siberian Railway will be followed to Vladivostock. Ship will be taken from there to Japan, and, that country crossed, America will be reached by sea. Though America has not yet been crossed by a motor-car, Mr. Robinson hopes to do so and thus secure a double first. From New York steamer will be taken to Liverpool, the easy run from there to Dover completing the world's conquest.

Motor-Cars in Manœuvres.

During the cavalry manœuvres held in the neighbourhood of Aldershot this week the motor-car made its *debut* as an auxiliary to war. Mounted on a 7 h.p. Panhard, General Hemming directed the movements of his cavalry force. Four motor-wagons were also used for transport, and carried loads ranging from three to seven tons with the utmost ease. Of these, three were propelled by steam and one by petrol. Other cars on the ground comprised a 16 h.p. Napier and a 12 h.p. Daimler, which were employed in running from column to column with urgent orders.

THE GENERAL AUTOMOBILE AGENCY, D. Farman, Man., Garage open day and night, all cars in stock, 100-104, Long Acre, W.C.

American Customs Duties on Motor-Cars.

THE Secretary of the United States Treasury Department has decided that automobiles taken into the United States, even for temporary use, must pay the duty of 45 per cent. The question came up in a letter from the Chairman of the Automobile Club of America, who asked that certain automobiles that were to be taken over from England, France, and Germany, for the purpose of engaging, incidentally, in International speed contests at the Pan-American Exposition, be allowed to enter free of duty, on the understanding that they were to be exported when the owners returned to their respective homes. The Secretary declined to allow this, but stated that if the machines had been in use for a period of one year or more before being brought over by their owners, they could be admitted free as household effects. If they are new they must pay the duty.

The "Ivel" Motor-Bicycle.

ONE of the features of the automobile world at the present time is the increasing attention which is being devoted to motor-bicycles. The number in use is steadily progressing, with the result that quite a number of cycle firms are beginning to take up their construction. Among these is Mr. Dan Albone, of Biggleswade, who is now turning out machines on the



lines of that depicted in the accompanying illustration. As will be seen, Mr. Albone has followed the lines adopted in the Minerva and Excelsior motor-bicycles, the engine, of $1\frac{1}{4}$ h.p., being carried below the lower tube of the frame and connected by a strap to a pulley on the rear wheel. The machine complete weighs 70 lbs., and can attain a speed of about twenty miles per hour. The Ivel bicycle has a long standing reputation for high quality, which will, we feel sure, be fully maintained in the motor-bicycle turned out from the same works.

The Autodrome and its Alternative.

It is now generally conceded that facilities for speed trials unavailable (except at prohibitive rates) on the public roads, are an urgent necessity if we are to compete with other countries in the design and building of automobiles. Not, of course, that racers are wanted for ordinary use; but the experience gained in building them is undoubtedly of supreme value, and without the incentive afforded by races many improvements that are directly applicable to economic ends, and many more that are indirectly so, would never have seen the light. The idea of a race-course *pur et simple* was suggested some time ago, and first appeared in these pages; while the alternative of a motor road, primarily for ordinary use, subject to occasional reservations for racing purposes, was due to Mr. Scott Montagu, and has many claims for consideration. In the first place, given a suitable locality, the economic advantages of a straight road

with good surface and easy gradients have been over and over again shown to repay their cost, and the large traffic that would in time be attracted to such might reasonably be expected to prove profitable, the more so in consideration of greatly diminished cost of upkeep, though the effect of the wheels of powerful cars, at the very high speeds now attainable, on ordinary road surfaces may well be more than is commonly supposed, and can hardly be comparable with the slight effect of speeds under thirty or thirty-five miles an hour. On the other hand, a course for racing only need merely involve the construction of eight to ten miles of road, and while less interesting, perhaps, to the competitors, would offer far more attractions to spectators, who could see the progress of a race at five or ten-minute intervals, while there would be less inconveniences in the way of its use for private trials, which should form an important part of its *raison d'être*. In any case, the increasing attention paid to the schemes suggested is bringing them at last into the field of practical politics.

The American Automobile Club's Endurance Test.

REVISED rules have just been issued by the Automobile Club of America with regard to the 500-mile Endurance Contest they are organising. The contest will be international in character, and will start from New York on Monday, September 9th, and will terminate in Buffalo on the afternoon of the following Saturday. Competing vehicles will be divided into five classes, viz.: (A.) cars weighing under 1,000 pounds, (B.) cars weighing between 1,000 to 2,000 pounds, (C.) cars weighing 2,000 pounds and over, (D.) motorcycles, and (E.) public delivery vehicles. Awards will be made on average speed for the six days, and any competitor falling below an average of eight miles an hour for any period will not receive credit for that period. No credit for speed exceeding fifteen miles an hour will be allowed, and all competitors will be required to conform to State laws concerning speed. The total distance will be divided into stages for each day on a basis of approximately eighty-five miles per day. Each day's run will be subdivided into two periods. Controls or checking stations will be established at the starting and finishing points of each period. First, second, and third class certificates will be issued at the termination of the contest, according to the average speed made by competing vehicles.

An Automobile Bank.

ON the Continent the "small savings bank" idea has been developed to much greater extent than in this country, and agricultural credit banks are popular institutions in almost every rural community. They are likely to be further developed by the aid of the automobile, for an automobile bank has just been inaugurated at Mézières—a little town in the Ardennes. Should the venture prove half as successful as the promoters imagine it will, the extension of the novel idea throughout Belgium, and thence to other parts of the country, will be only a question of time—and a short time too. A motor-car has been fitted up with strong box, cash books, registers, clerks, etc., and will tour the district surrounding Mézières, gathering in the savings of the people. At the present time many of the people of the locality continue the primitive way of hoarding their savings in stockings and out-of-the-way corners, while the journey to the nearest town is rather a long experience to the distant labourers. Seeing that an automobile has been introduced in the new system of a wandering banker, we do not anticipate a "run" on the bank by many of the peasants.

Attend to Cars.

MOTOR-CARS are not exponents of perpetual motion—nor will they run for months without being overhauled and properly looked after. The same principle is true of other forms of locomotion. Railway engines are thoroughly examined before and after a journey, and horses have to be rested and their

condition noted. So it is with motor-cars. To run a car a hundred miles, half the distance being probably along a dusty road and the other moiety through showers of rain, is a severe test which it will regard with comparative indifference. But it is rather too much to stand the car in its shed for a week without attention, and then expect it to run as freely as if it had never experienced dust or rain in its career. Motor-cars require thorough overhauling if the best results are to be obtained.

American Opposition.

IN some parts of the United States great alarm has been expressed at the violent rate at which some well-known automobilists have been racing along the roads, and the harum scarum manners of millionaire motorists threaten to seriously impede the general advance of the industry. The Road Drivers' Association of New York, which numbers fifteen hundred members, and the Pleasure Drivers' Association of Brooklyn are combining against automobilists—all because a few rich mortals have sought to endanger their lives by exciting adventures. It demonstrates what serious opposition can be raised by lack of discretion.

A Speed Recorder.

REALLY the solicitous care of good meaning journalists with regard to automobilists is quite perplexing. Thus one kind man who has recognised the unfairness of many of the methods adopted by the police to trap unwary drivers, suggests that all motor-cars should carry an automatic speed recorder of a design to be approved by the Local Government Board. It should be fixed, he suggests, in such a position as to be invisible to the driver "and would thus increase the heinousness of the offence if there was one, while giving absolute immunity from mistakes." All this is very comforting; but why cannot these young people discuss politics, or the weather, leaving motorists alone?

Long Acre.

CARRIAGE builders in this country—unlike those of the United States—have not gone into the motor-car trade with anything like universal enthusiasm, and only a few have sufficiently studied the subject to be able to find profit in its adoption. But a walk down Long Acre gives opportunity for realising how completely the automobile has changed the aspect of that thoroughfare—once solely devoted to horse-drawn carriages and vehicles. Every hour of the day automobiles may be seen in and about this leading thoroughfare, and a great many fine showrooms therein are given up to the display of motor-carriages of all descriptions.

County Councils and Motor-Cars.

AT the quarterly meeting of the Herefordshire County Council, the Roads Committee reported the receipt of a letter from the Automobile Club, with copy of a memorial from manufacturers and others protesting against restrictions on motor-car traffic, but the Committee did not see any reason for modifying the recent decision in favour of numbering and registration; they considered that the question of speed might be left to be dealt with as furious driving under the ordinary law. They were also of opinion that drivers should be licensed, and be liable to have their licences revoked upon any transgression of the law. Mr. Ballard made a protest against this recommendation, which, however, was adopted.

Puncturing Tires.

IN the early days of the automobile in this country various were the suggestions, of a more or less violent character, to stop the progress of motor-cars. One chief constable hit upon the brilliant plan of placing trees across the roadways that motor-cars were likely to traverse, and in some of the out-of-the-way villages of France even more wicked methods were occasionally adopted. Now this vicious feeling towards a new

industry seems to have extended to the United States, and the population, as well as the rural authorities, along the Boston post road in Connecticut are reported to be so determined to stop the fast racing of the millionaire motorists along that thoroughfare that, if necessary, they will resort to bullets. These are not to be aimed at the drivers, but at the tires of the cars, with a view to puncturing them, and so impeding their progress. If one or two of the bullets went astray it might be a useful lesson for all concerned.

More Records.

FRANCE has done some good things in the way of record breaking this year, but the recent performance of a scorching motorist and a police court magistrate established three more of an interesting order. M. Hautier, the well-known automobile builder, appeared before the magistrate to answer four summonses for the offence of furious driving alleged to have been indulged in during a period of three days. The second record was purely financial, the four summonses being disposed of for 1, 2, 3, and 6 francs, respectively. M. Hautier, having thus secured his two records, courteously held the watch whilst the magistrate established one on his own account by inflicting 196 fines for similar offences in the marvellously short time of 1 hour 45 minutes 25 seconds.



A SNAPSHOT AT WINDSOR ON SATURDAY LAST.

Motor-Car Repairs.

MOTOR-CAR repairing establishments are opening up in every city of the land, but competent automobile repairers are still scarce. Various tradesmen whose experience is entirely foreign to motor engineering have suddenly blossomed out into full-fledged motor-car experts, and are leaving unmistakable marks of their incompetence upon the vehicles entrusted to their care. It is not uncommon for an automobile, which merely required some slight adjustment or replacement of parts, to receive at the hands of these men a thorough "overhauling," with the result that serious and complete derangement follows, and the owner is put to much trouble and expense to have his car set to rights again. No man is competent to make a specialty of repairing motor-cars unless he is familiar with their construction as well as their operation. Motorists should endeavour to select some mechanic of reputation in their town who will become interested in their car and be able to make such repairs to it as may be needed. If there is a newly-opened repairing shop in the vicinity, an automobilist would be well-advised to assure himself of the competence of the repairer before he entrusts his car to him. The little adjustments he should learn to make for himself, and, above all, he should remember that "an ounce of prevention is worth a pound of cure."

A Mechanics' Institute.

THE United States is the land of organisations and societies, and the suggestion comes from New York for a Motor-Vehicle Mechanics' Institute. If there was such an institution the graduates of it would find profitable employment, and the benefit of such thoroughly trained care for a motor-vehicle as these mechanics could give it would be of great comfort and saving to the owner thereof. As it is now, a man not only often risks his property, but his life and limbs as well, solely because he cannot find a really competent engineer, no matter what he may be willing to pay. In the near future there will be a splendid opening for reliable and proficient mechanics able to drive and overhaul machines.

Undecided Pedestrians.

As in most other things the undecided person who halts in making a decision and stops half-way across the road is a great terror to the automobilist. The strain on the nerves of the motor man is already severe—for, what with attention to his machine and looking out for stray policemen and ownerless dogs, he has plenty to occupy his attention. But when a nervous old lady attempts to cross the road about a hundred yards ahead the difficulties of the position are great indeed. She will dodge about in the roadway like the proverbial pussy gyrating on hot bricks, and she is useful—from the prejudiced person's point of view—in adding another irritant to the much-harassed motorist.

The Turgan Caravan on Tour Again.

THE monster Turgan caravan, which rested for a while at the Agricultural Hall during the late Exhibition after a successful tour in Algeria, is on the road once more. Though not entered with the smaller fry of competitors in either section of the Paris-Berlin race it has arrived at Berlin nevertheless. The route followed was rather longer than that of the tourists, the bridge of boats by which they crossed the Moselle hardly being up to its weight of 5,400 kilos, with another thousand or so added for coal and something for passengers. The passage was, however, safely accomplished at Wittlich, and though nothing in the way of a record was established the trip is described as having been most enjoyable.

A Useful Record.

MR. JOHN M. SATTERFIELD, chairman of the Automobile Club, of Buffalo, N.Y., has offered a cup to the member who shall hand in the greatest number of different reports imparting useful information pertaining to roads, towns, stopping places, charging and supply stations, etc., in the Club's territory. In order to systematise the work of compiling such information a form of report has been prepared which all members are requested to use whenever possible. These blanks read as follows:—
 "Report of . . . Left . . . via . . . Street, at . . . arrived at . . . at . . . This piece of road is good . . . fair . . . bad . . . I believe this to be the best route between these points (if not, state why).
 . . . The grades are . . . Distance . . . ascertained by . . . Scenery . . . General remarks on road . . . The town of . . . has telegraph . . . telephone? (in hotel)? . . . Railroad . . . Ferry or steamboat connections with . . . The best hotel is . . . Rates approximately . . . Petrol can be had at . . . on week days, and on Sunday at . . . have offered to supply a continuous electric current of . . . volts . . . amperes maximum, between the hours of . . . and . . . at a rate of . . . per ordinary vehicle charged, and are willing to make arrangements to that effect with this Club. The best place for repairs to vehicle, etc., is . . . Places worthy of a visit in this town are . . . Automobiles may be stored over night at . . . Remarks: (including names of several villages passed through to indicate route taken) . . ." When long runs are made the members are expected to use more than

one form, making different reports for the various portions of the run. The reports received will be tabulated according to a chart system, and will be at all times at the disposal of members seeking information, and, at the end of each season, the information will be combined in book-form for the use of members only.

MOTOR-CARS IN JAPAN.

THE writer recently visited the leading cities near the coast in Japan, and found enthusiasm concerning the introduction of automobiles to be at its height. One might be surprised at the interest in motor-carriages manifested in Nagasaki and other places, but it must be remembered that the Japanese are far more enterprising to-day than they were formerly, and the sons and daughters of the "new" race are as desirous of keeping up with the times as the most cultivated Europeans.

When the horseless carriage was introduced, trouble was experienced at first in getting the machinery repaired in the event of a breakdown. Recently, however, machine shops have been established in which the equipments are such that the most complicated of motor-carriage fixings can be repaired and adjusted. This is the result of recent attempts on the part of American and European manufacturers to introduce their respective machines into Japan.

There are a great many persons in the Japanese empire who can afford to buy automobiles, and how to reach these people has been one of the problems with which the agencies have had to cope. There were numerous obstructions at first to importing foreign made motor-carriages into the country, but this prejudice has now been overcome in nearly all the leading commercial centres. Thus at Nagasaki there are agents who have established depôts from which they sell different makes of motor-vehicles. The tariff duty on the imported vehicles is not excessive, and as good prices are obtained, the dealers have good incomes from the sale of the machines and the care and repair of the same. The machines which the writer saw in service and in the agencies in Japan appeared to come from all parts of the mechanical world. There were many English types, while the French designs were quite prominent. There were also American makes distributed in the sales stores. At some of the agencies the different makes of machines are drawn up in line, and one can inspect and compare the machines of different countries.

The Japanese laws are peculiar in many respects. Thus, for instance, if one takes his camera with him and tries to photograph people riding in automobiles, as the writer did, he is notified by the police that it is against the law to photograph anything in the empire. There are, however, not many laws restricting riding through public streets in motor carriages. I saw them running about at good speed everywhere. They are, as yet, a novelty in the cities and towns, and persons stop and gaze upon the speedy machines as they go buzzing through the streets. The principal troubles arise at the crossings, where the thoroughfares are overcrowded. Here the Japanese police often stop the automobiles while the crowd passes. Again, the police will sometimes hold the crowd back until the vehicles rush through. The streets of many of the cities and towns are too narrow for motor-vehicles, and, although there is no law prohibiting the machines from entering the streets, the drivers usually steer clear of them. Some of the streets are laid with rounded and pointed stones, which are disastrous to rubber tires, and drivers of automobiles avoid these as much as possible. Some of the country roads are in excellent condition and riding upon them is a great pleasure.—*The Horseless Age.*

AMERICAN motorists are much interested in Mr. William K. Vanderbilt, jun.'s new motor-car, which is shortly expected to arrive from France, credited with a speed of seventy-five miles an hour. Mr. Clarence Mackay's new car, also on the way, is a reputed flier, and some exciting contests are anticipated.

ARRANGEMENTS are in hand at Ostend for the holding of an International Exhibition of Hygiene, Maritime Safety, and Fishery during August and September next. An automobile department is being organised in connection with the section devoted to sports.

A LADY'S EXPERIENCE IN THE PARIS-BERLIN TOUR.

AS we mentioned in a recent issue, Madame Lockert, proprietress of *Le Chauffeur*, was one of the few ladies who took part in the recent automobile tour from Paris to Berlin. Madame Lockert, who was accompanied by her two daughters and who rode on a Georges Richard car, has sent us the following brief account of her experience:—

"Beware all who would journey from Paris to Berlin to avoid puncture or accident of any kind at Chapelle-sur-Crécy, forty-seven kilomètres out of Paris. There our *mécanicien* toiled for one hour and a half, under a scorching sun, to repair our motor-car. On asking for a glass of water for the brave fellow, some forty or fifty idiots who surrounded the car laughed immoderately, and declared with one voice, 'There is no water here.'

"Having breakfasted on the morning of the 22nd ult. at Chaufrey, sixty-eight and a half kilomètres out, we proceeded to Reims. Tire troubles as well as our accident at Chapelle-sur-Crécy placed us near the tail end of the procession, and allotted to us the last room in the Hôtel du Commerce, where we were soon sound asleep. Sunday, the 23rd ult., we travelled splendidly through a monotonous and uninteresting country, without accident or incident till at four kilomètres from Longwy our carburettor became unsoldered and brought us to grief. I ran and searched till I saw coming along a De Dion voiturette, which we signalled to stop. The owner, M. Labbé, kindly took up our *mécanicien* and carburettor and conveyed them to the nearest tinsmith's, where the latter was speedily put in order.

Continuing our journey, we came suddenly to a height which commanded a landscape of surpassing loveliness. Longwy rose in an amphitheatre to the left, to the right a forest of tree tops stretched like a carpet under our very feet. Through this glorious scenery we sped, swift and silent, till suddenly a sharp report! A tire burst! Another loud report, then a regular *feu de joie*. What new complication, then, could these sounds of alarm herald? 'Twas no tire trouble, but Longwy signalling our arrival with cannon, and announcing the number of passengers by gun shot. A moment later and we were at the control, receiving a hearty welcome and expressions of good will from all sides as we passed the ever beautiful road into Luxembourg.

Our arrival at Luxembourg was much behind time, so with little sleep we took the road again for Coblenz. But more accidents to tires and a serious leakage of the carburettor compelled us to sleep at four kilomètres from the control at Mozelsweiss, from whence we departed the next day, Wednesday, to make a record run. We were confident of overtaking many lost hours, but at five kilomètres from Mayence our steering gear went wrong, and we had to sleep *à la belle étoile* in a forest.

To say that we had a good dinner that evening would be an exaggeration. We had fortunately some *pâte de foie gras* and biscuits and with these one could not die of hunger! It was little enough, however, and the following morning, after a rapid toilet in the forest, we sped through Mayence and Frankfort, breakfasting at Dorsinghem, and arrived at Marsbach, where we slept, without a single accident. Starting at five o'clock next morning we reached Vacha, 845 kilomètres from Paris. Here, alas! we were obliged to return to France, for we could not spare the time necessary for repairing the car, so parted from it much to our regret. We were not in the least fatigued, and regret much that time alone prevented our completing the journey.

At Cambridge there has been some discussion regarding the running of motor buses from the Post Office to the Railway Station. Up to the present nothing of a definite nature has been arranged.

AMONGST the members of the Automobile Club who have offered to place themselves and their cars at the disposal of the War Office, for the manœuvres, from the 3rd to the 10th August, are:—Mr. Mark Mayhew, 50 h.p. Napier; the Hon. C. S. Rolls, 16 h.p. Panhard; Mr. Archibald Weir, De Dion Phaeton; Mr. Noel B. Kenaley, 10 h.p. Delahaye; Mr. Shrapnell Smith, 3 h.p. Ariel quad.

A DAY'S RIDE ON A WHIPPET TRAILER.

BY the kindness of Mr. Edwin S. Cheel, I was enabled the other Sunday to enjoy a long-promised trip on the Whippet trailer, and with my host driving the Ariel motor-tricycle to which the trailer is attached, we left town at 9.30 a.m. in very threatening weather and with half a gale of wind dead in our teeth. This, though rather unpleasant, did not seem to affect the running of the combination in any way. We passed 400 odd cyclists between London and Redhill and another 250 between Redhill and Brighton, and they must have envied us as they saw us romping up the hills with ease and facing the gale without any concern. We pulled up at the Metropole at Brighton in exactly three hours from start, having gone through without a stop, the combination running beautifully throughout. After a short stay for lunch and proceeding over a villainous road along the sea front to Shoreham we paid a toll of sixpence to cross the Norfolk bridge and continued over



MR. AND MRS. CHEEL ON TRICYCLE AND WHIPPET TRAILER.

a much improved surface to Worthing, and through lovely winding avenues and perfectly level roads to the old world villages of Goring and Rustington, and along the sea front to Littlehampton. Here, after a stop of a couple of hours, we turned inland *via* Arundel and through the Duke of Norfolk's lovely park to Pulborough, Billingshurst, Ockley, Dorking, and Epsom, to town again, arriving at 8.30 p.m., having covered a distance of 140 miles. The run to town from Littlehampton was done in a little under three hours. Contrary to expectation, I experienced little or no vibration except when going fast over bad roads, and thoroughly enjoyed the trip in every way. To be taken to Brighton and for over twenty miles along the South Coast, and then whiffed home again all in the short space of seven hours seems almost marvellous to me, and has more than whetted my appetite to possess a car of my own. The tricycle and trailer ran splendidly throughout, and gave not the slightest trouble. In conversation with Mr. Cheel he tells me that he has driven this machine for over 10,000 miles, and, judging by appearances, it looks quite equal to another 10,000 miles.

CHARLES COLMAN.

A MOTOR-CAR was being driven down Paradise Hill, Margate, a few days ago, when the brake failed to act. The vehicle went down the hill at a good rate and crashed into a tramway post at the bottom. The car sustained considerable damage, but fortunately the occupants escaped without injury.

CORRESPONDENCE.



THE CREESE MOTOR-STARTER.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—In your issue of the 6th instant "Inquirer" asks for the experience of a motorist who has used the Creese system of ignition. I have much pleasure in answering this letter, and informing "Inquirer" that I have had the Creese ignition fitted to my two cylinder engines, and from the day I took the car away from the works of the company, which is now four months ago, I have not had the slightest trouble with the ignition. Personally I see very little chance of the ignition failing, especially if genuine De Dion plugs are used in connection therewith. For these reasons I strongly recommend the Creese device.—Yours truly,

H. HIGGINS.

THE WERNER MOTOR-BICYCLE.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Allow me to confirm Mr. A. L. Bennett's opinion of the Werner as a thoroughly practical and most admirable automobile, economical in working, safe, very rapid, and a good hill-climber. Some time ago, being puzzled at the conflicting accounts as to the practical working and relative merits of the different motor-bicycles, I determined to test the three best-known types for myself, and, being a tried cyclist, with a certain experience of "motoring," resolved to purchase only on the evidence of my own senses, although I was, I own, much impressed with the wonderful records of the Werner in competitive trials. The result of my tests was to rate the Werner as markedly superior to its rivals of like repute. By the courtesy of the M.M.C.'s representative, Mr. J. J. Leonard, I enjoyed two long trials of the machine. Myself and a friend subsequently purchased Werners, and we both entirely confirm Mr. Bennett's opinion, consider that the new sport is uniquely enjoyable, and, in fine, consider the Werner a marvel of speed and excellence. Ordinary cycling is poor sport beside motoring on a Werner. We find our mounts easy to groom and manage; trifling minor troubles with the ignition are about all that ever concerns us. The machines are very fast—e.g., recently I amused myself by taking part in a pursuit race on a cycle track, overhauling and passing racing cyclists and two other motor-bicycles with ease. Twenty miles an hour on give-and-take roads are easily covered, and with a security to pedestrians, etc., impossible in the case of the weighty and big motor-trike or car. It is a very safe machine for all concerned. The steering is excellent. the theoretical side-slip trouble is a mere bogey to all but clumsy riders, who are always unsafe on any form of bicycle. Personally, I have never yet slipped, though I have ridden over grease freely, and I should not hesitate to ride the Werner wherever an ordinarily good cyclist can go. The machine climbs well—particularly is this so with the 1901 pattern, which is a marked advance—and, aided by auxiliary pedalling with a sixty or seventy gear (a light and welcome exercise), will mount most Devon hills at speeds above the "legal limit" if wanted. I understand that a 2 h.p.-engined bicycle is in contemplation for next year, but meanwhile the 1½ h.p. one does very well, and I have never found it to overheat under any tests. Anything more delightful than a run on this splendidly-designed little automobile I do not know, and I have sampled many and varied pastimes at home and abroad.

I hope later, with your permission, to send a letter embodying a season's experience and suggestive of certain improvements in details, particularly as regards the "silencer," braking and pedalling gear, etc. For the present I will simply advise all purchasers to have an exhaust valve lifter fitted by the Bowden Company. This lifter ensures a very easy start, good control in traffic, very rapid cooling of the cylinder during descents, and free running when the power is cut off. We here consider it as all but indispensable, and I believe that Mr. J. J. Leonard himself is now a convert to this view. To conclude: Avoid clumsy and awkward tricycles and try the Werner, which combines the

healthful exercise (if wanted) and delicious flight of the bike with the "life" of an automobile. The front-wheel-band-drive is undoubtedly that which gets the most out of the engine, there being no waste of power in the frame during transmission, and also enables the legs of the rider to be freed from the projections, etc., which so hamper auxiliary pedalling in the case of some motor-bicycles. The motorcycle is not only practical, but it is a triumphant success.—Yours faithfully,

E. DOUGLAS FAWCETT.

GREASE TROUBLES.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Having had some little experience with a Darracq car, I find that after a run of twenty to thirty miles a large amount of grease has been wasted out of the gear box through the holes through which the spindles pass. I should be greatly obliged if any of your readers could inform me if they have had a similar experience. Also as to what grease they find best suits the purpose for which it is required, and where it may be obtained.—Yours truly,

FRANK APPERLEY.

PREVENTION OF SIDE SLIP, FORE DRIVING, ETC.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Mr. Sennett, I regret, seems to be rather—suppose I say agitated—by what I have written on the above question. It is not right to make your valuable paper the medium for personal encounters, and therefore I will do my best to confine myself to the proof of what I have advanced.

Should Mr. S.'s pet scheme be carried into practice for a racing car, I repeat, the question bristles with difficulties. Two methods, and two only, are open, viz.: First, to make both the fore and hind axles lock in conjunction about a central point for each axle, in fact like an ordinary horse-drawn vehicle only with both axles locking instead of one. This is the simplest method, but a few minutes' thought must show Mr. S. that practically it is impossible to convey the power of the engine to the wheels without bevel gearing. If he uses a petrol motor, in addition to the usual change speed gear, he will have to provide the aforesaid bevel arrangement to connect to the axles, and of course whatever device he employs each axle must have a balance gear or differential movement. Now, with regard to Mr. S.'s assertion as to complications, I think the foregoing is fairly well off, and be it remembered the steering arrangement for a car of this kind is of what is considered on the Continent the very worst. Mr. S. has ridden on a racer, and is therefore doubtless able to judge. May I ask him therefore how long he thinks his tires would keep on the wheels of a car constructed as above? I think any motor-car user or driver will tell him the steering arrangement cannot be otherwise than the Ackermann form for high speed.

Second, seeing therefore we are confined to the Ackermann axle, let us see whether we are better off here as regards actual practice. We cannot drive or steer by all four wheels in this case without a swivel arrangement to each wheel; this can be done by a pair of bevel wheels to each wheel. (This is Lacoste and Duncan's Patent, October 12th, 1896.)

Now, bevel gear is a very beautiful thing when it is in good order, well made, and well looked after. Notwithstanding, speaking from actual experience of these particular wheels, I fear Mr. S. would find it to be rather troublesome if he had four sets to look after on one car. According to Mr. Austin, one of our cleverest and best motor-car engineers, one pair of bevel wheels on a car is quite enough.

Repeatedly the attempt has been made to make the front wheels drive and steer, either by some arrangement of gearing or by universal joints. How is it we hear so little of these attempts? Speaking now as to these joints, surely it is scarcely good practice to trust to the pins of a universal joint (while at the same time, be it noted, it is in almost constant motion) to transmit perhaps over 20 h.p.? As before mentioned, four joints are required; these must allow for a locking angle of nearly a right angle, consequently a single joint is useless, and each

joint must necessarily be of the double form. In addition to the power transmission arrangements, the steering connections cannot be very simple, and when we add the usual connections of the motor, I think that my description of the underside of such a car will not be very far wrong. Mr. S.'s little joke about putting the speed lever underneath (by the way, this is an eccentricity evolved from Mr. S.'s imagination, as I never said anything of the kind) is very funny, as also the "blue haze," but I respectfully submit he has failed to controvert any of my statements. The bad language, I fear he would find, would be manufactured automatically with a car of his pet type.

As to Mr. Freestone, I sincerely hope with Mr. S. that he may accomplish his difficult task, but he should remember he is only one worker among many, as a reference to your back issues, as well as the other automobile papers and the Patent Office will amply show. No later than the Paris Exhibition a large steam-driven vehicle was exhibited by M. Gandon, wherein all four wheels are driven. (See the *Motor-Car Journal*, vol. ii., page 334). I fear I have run to considerable length and used what will be called "vain repetitions," but this is better than wasting time and money on a contrivance which after all it is safe to say will never remunerate the inventor in anything like the proper proportion.—Yours faithfully,

SIDNEY RUSSELL.

BAD ROADS AT ST. LEONARDS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—As a constant reader of your valuable columns I noticed early in the year a request for correspondence as to the state of the roads in various parts of the country which might have a tendency to arouse local interest in the matter. Although St. Leonards-on-Sea is a very rich and prosperous town, and very highly rated, nobody without having seen would believe that its highways could be kept in such a dangerous and disgraceful condition. Not only do I wish to warn the unfortunate invalids who come and take the necessary carriage exercise, but also cyclists and motorists. The latter particularly should drive with great caution. This sad state of the highways has existed for the last two years or more, and matters seem to be getting worse. I think it is in a great measure due to the way the roads are constructed, as the stones used seem to be large, and they are rolled in at the same time as the "slosh." Of course, the road has a level appearance when just done, but soon bumps up. The authorities have been frequently applied to on the matter, but with the exception of a few hundred yards of wood pavement on the front—of which they seem very proud—they show no concern. Can any reader suggest a remedy?—Yours truly,

E. S. H.

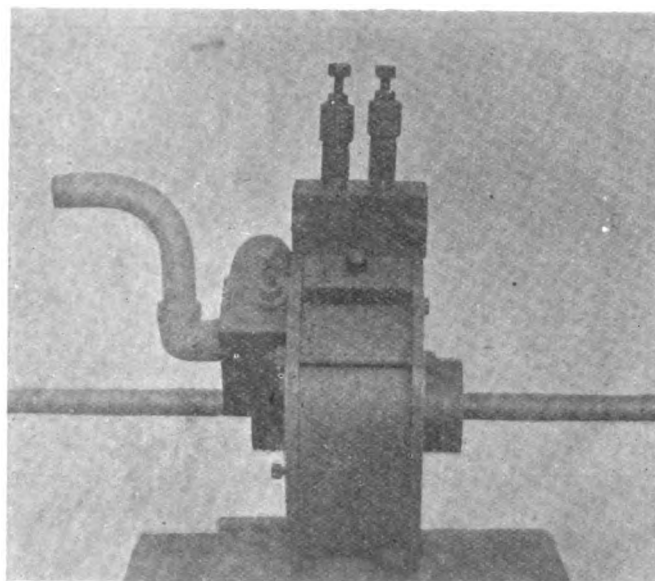
MR. F. S. WEROTTE, of Brighton, writes:—"I notice in your *Journal*, dated the 20th July, an article on Brighton firms, in which you mention me as having been a partner in the late 'Times Cycle and Engineering Works,' and whilst in that position having spent much time on a new steam car. This statement is incorrect, as although I have taken over the works and plant of the above-mentioned firm, I have never had any connection whatsoever with them except as works manager."

MESSRS. SHIPPEY BROS., inform us that they have appointed Messrs. Haycraft and Son, Limited, of Deptford, local agents for the sale of Milwaukee steam cars and appliances for the following districts:—Deptford, New Cross, Lewisham, Brockley, Lee, and Blackheath.

WHEN horse flesh and blood can stand no more the advantages of the motor-car become apparent to the blindest.—"This hospital cannot answer any further calls. Ambulance horses are all down and others to take their places cannot be procured."—Such was the message received by the New York Police Department from one of the principal hospitals during the height of the heat wave, and what a world of unnecessary suffering it suggests. Fortunately, some of the hospitals in prostrate New York are well-equipped with motor-cars, which carried relief untiringly.

A ROTARY STEAM ENGINE FOR MOTOR-CARS AND CYCLES.

MR. A. BURGESS, of Barnard's Green, Malvern, is the designer and builder of a new rotary steam engine for motor-cars and bicycles, which combines the many advantages of marvellous running power, clean cut off, no waste of steam, general economy, and a maximum of leverage, without dead ends or centres. The illustration which we give is of a 30 h.p. engine, for which the inventor claims 75 per cent. higher efficiency than that which is usual with other engines



designed for the same purpose. Mr. Burgess is naturally chary of giving too many particulars until his specifications have passed through the foreign patent offices, but we hope at an early date to be able to publish a more detailed account. We may mention that it is possible for two men to carry the 30 h.p. engine which we illustrate, and that Mr. Burgess is building a small motor of the same type, which he intends to fit to a bicycle.

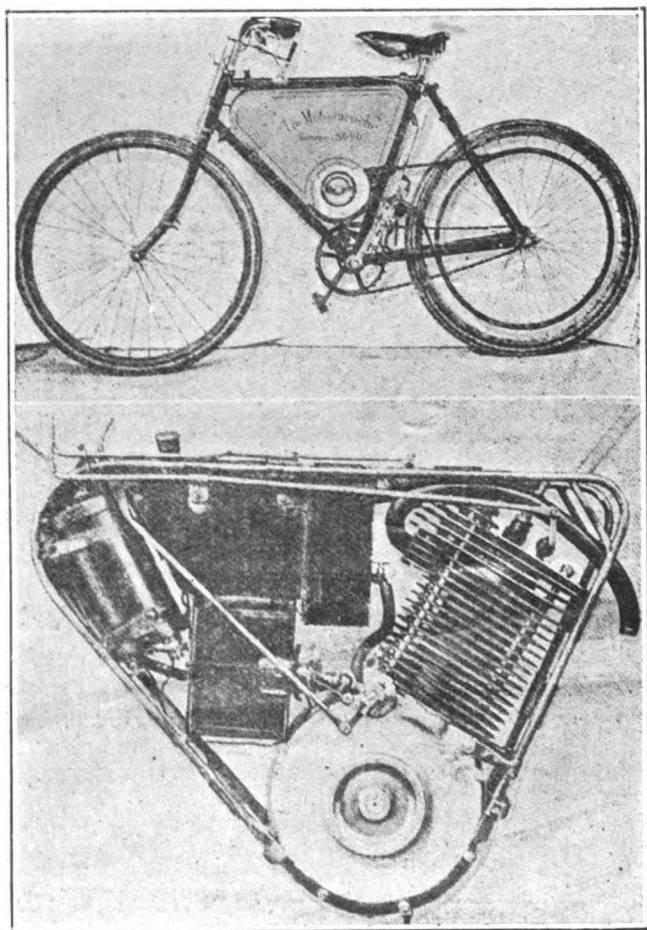
THE New York Tire Company, in issuing their new circular and price list, claim, amongst other advantages, longevity for the New York tires, they lasting, it is claimed, from two to three years. They have but one quality, the best, made from pure Para rubber. Liability to puncture is greatly reduced by their system, which consists of alternate layers of rubber and fabric and two air tubes. Two forms are made, one with a flat base for heavy vehicles, and the other with a rounded base for ordinary touring cars.

OUR Midland representative had a half day's run last week on a Centaur car. A good speed was maintained up ordinary hills, and on the level quite eighteen miles an hour was easily approached. With the exception of a little chain trouble through want of adjustment at the start, the car went through its trial without a hitch. The car weighs about 10 cwt., and if fitted with slightly easier springs, which we understand the firm intend to do, there will be less vibration felt when going over rough roads. The car is chain driven; has three speeds and reverse, a *tonneau* body, and pneumatic tires. The engine is of 5 h.p., the bore being $4\frac{3}{8}$ in., and the stroke $4\frac{1}{2}$ in. The nominal speed is 700 revolutions per minute. The motor, which is placed at the rear of the frame, is of the horizontal type. The Centaur Cycle Company, Coventry, have been experimenting with motors for some considerable time past, and will, no doubt, very shortly be placing a standard pattern car on the market.

THE GENERAL AUTOMOBILE AGENCY, D. Farman, Man., Garage open day and night, all cars in stock, 100-104, Long Acre, W.C.

THE MOTOSACOCHE MOTOR-BICYCLE.

ONE of the latest novelties in the way of motor-bicycles is the Motosacoche made by Messrs. H. and A. Dufaux, of Geneva, Switzerland, a specimen of which we had an opportunity of inspecting recently at the London Auto-car Company's dépôt. The motor and all that belongs to it fit into a frame of bent tubes, which can be quickly attached to or detached from a cycle frame. On the cycle itself only the pulley for the driving belt on the rear wheel and the ignition contact on the handle-bar have to be fitted.



The illustrations show the arrangement so clearly that but little description is necessary. It may be mentioned, however, that the engine is of 1½ h.p., running at a speed of 1,200 revolutions per minute. A spray-type carburettor is used, the petrol tank having a capacity sufficient for a run of sixty miles. The Motosacoche complete weighs only 28½ lb., and is 3 ins. wide, so that it does not interfere with the free use of the pedals. It can, it is claimed, be fitted to any bicycle, and can, if necessary, be removed entirely in about a minute.

THE Liquid Air Power and Automobile Company, of Boston, U.S.A., has passed into the hands of a receiver. It was a West Virginia concern, with a capital of £300,000.

THE success of the Renault voiturette in the Paris-Berlin race is reported to have resulted in quite a rush of orders to the Bellancourt firm. The same is said of the three Belgian firms who participated in the course.

THE business of Messrs. Dennis Bros., of the Barracks, Guildford, has just been registered as a limited liability company, under the same title, and with a capital of £30,000.

A WESTERN COUNTIES TOUR.

THE following short account of a trip from London to Land's End, and across country to Wroxham, may be of interest.

My car is an ordinary 6 h.p. Daimler, which was at the time of our start geared to 25 miles, for the comparatively level roads of the Home Counties. It had been my intention to change the thirteen-tooth sprockets for something of a lower gear; but at the last moment time failed, so to Salisbury we started, overgeared though we were. Our plan was to meet the Automobile Club on their return from the Easter tour.

Arriving at the ancient and quaint city of Salisbury on Good Friday, we spent Saturday and Sunday doing some interesting short runs, the weather being too bad to make a long run comfortable. On Easter Monday we ran to Bournemouth, where, according to arrangement, we met Mr. Edmunds and Mr. Cordingley at the Bath Hotel. Mr. Edmunds turned up to time, but unfortunately Mr. Cordingley's car arrived with a damaged gear; so, determined to make the best of a bad job, we endeavoured, with marked success, to accommodate the three parties in two cars.

Doing the district around Bournemouth, we stopped at Wareham, where we were much interested and amused with the charge brought against Mr. Staplee Firth of driving "to the common danger"; and, needless to say, mightily pleased with the result. Our friends having left us, we on the following Friday started from Bournemouth for Exeter. Passing through Poole, Wareham, and Bridport, we came to Lyme Regis—a place to be remembered, as it was there that we had our first experience of a real hill; but steep as was that hill, we overcame it and safely reached the summit, although our man had to do some hard work before that desirable point was reached. We had intended taking the coast road, but getting wrong decided to run through Axminster; probably the thought of another hill like Lyme Regis had something to do with the mistake. After a delightful run through Honiton to Exeter, we arrived in good time for an excellent dinner at the new London Hotel. On Saturday we started for Plymouth, but taking the worst road reached that city *via* Ashburton, Ivy Bridge, and Plympton, encountering on the way our worst experience of weather—rain, hail, and a strong head wind. We reached the Albion Hotel, Plymouth, about five o'clock, and there we stayed over Sunday, taking a run on that day to Ivy Bridge, the weather having been so bad on the Saturday that we saw next to nothing of the country passed through. On Monday we started for Truro, going across Tor Point Ferry in a hail storm and half a gale of wind. Passing through Liskeard, we came to Lostwithiel and St. Austell. I should certainly advise anyone to keep out of Lostwithiel unless with a very low geared car; Lyme Regis was bad but this was worse—both down into the town and up out of it. In going down two out of three brakes fired and were useless. I then discovered the advantages of the extra brake which is fitted to my car, and certainly shall never be without it. I may here mention that I am no believer in a sprag, considering that the brakes should always be in such a condition that hand pressure will skid the wheels, and also that there should be a foot brake, which will hold the car on any hill, either backward or forward, and further, that in addition to these, and in the event of any mishap to them, there should be a third brake, which, in my case, is of the ordinary type, but fitted to the countershaft on the reverse side of the differential. With these three I can stop on the steepest hill and safely allow the car to go back, which I have often done to get a more favourable place to start from. Again, as my foot brake does not withdraw the "clutch," I can by only using this one brake, stop the car on a hill, and before it can run back it must turn the motor backwards, therefore, consider the extra brake much more serviceable and much more reliable than a sprag, as it is equally useful going either up or down hill.

On Tuesday we left Truro for Falmouth, and as we had

a good view of the place from the car we did not trouble to stop, but drove round and back to Penryn, *via* Gweek, to the Lizard. After lunch, and spending about two hours there, we left for Penzance, arriving about six o'clock and getting a fine view of St. Michael's Mount and the Bay *en route*. Putting up at the Queen's Hotel, we stayed two nights, spending the Wednesday in driving round Penzance and in a run to the Logan Rock. On the way to this latter place we came across another hill which strained things considerably. The best way, really, is to go from Penzance to Logan Rock and back to Penzance, as the hills are much easier that way. Next morning we occupied in a run round Newlyn, and again got amongst hills—about one in five. Here we very much surprised a gentleman—a would-be automobilist—who had been told that no car could climb the hills around Newlyn. When he actually saw my car accomplish this, to him, impossible feat he became quite enthusiastic, exclaiming "I saw you do it!" and intimating his intention of at once purchasing a motor-car. I, personally, was not so proud of our performance, as my wife was obliged to walk all the way up the hill, whilst my man pushed, and I fumed much at having come away so highly geared. After lunch we started for Newquay, arriving in time for dinner at the Atlantic Hotel. Here we stayed two nights, and it was here that we met with our first tire trouble. The tire—an old Michelin—was badly cut, and gave out. Having patched it up, I wired for another to be sent to Barnstaple. A good run through Launceston, Holdsworth, and Bideford set me wishing that I had given instructions for the tire to be sent to Ilfracombe. Within one mile of Barnstaple, however, the tire collapsed, and we finally finished up on the rim. Much to our joy the new tire arrived towards the end of dinner, and next day (Sunday) was devoted to fitting it to the wheel and a run to Ilfracombe and back before dinner. The next day (Monday) we started for Bristol, meaning to leave there before lunch the next day for Stroud. The puncturing of a back tire by a nail and filling up with petrol however upset our time table, and it was not till after lunch that we started for Stroud. Soon after leaving Bristol we had some trouble with the new tire, but after two repairs it held all right, and we reached Stroud about five o'clock. This being my native place I took friends one day to Painswick, and the next day others to Cheltenham and Gloucester. I had promised to take the landlord of the George and his wife for a run at five o'clock, and when they heard that I had started at twelve o'clock to go to Gloucester and Cheltenham they were greatly disappointed, never deeming it possible for us to get back in time; however, I was back at half-past three, and at five o'clock I kept my promise, and started with them for a run up the Stroud Valley to the top of Minchinhampton Common. In the course of conversation mine host mentioned to me that no car could be taken with safety down the Rodborough Hill. I laughed at this, and assured him it was perfectly safe, and at last he consented to return that way. We had no trouble whatever in the descent, though this hill is as bad as Birdlip Hill. I have, however, never had trouble even with Birdlip Hill, and my extra brake gives a good margin of safety. Mine host was much impressed, and quite convinced that motor-cars were more than toys, in which light he had become accustomed to look upon them. Our trip drawing to an end, as all good things too quickly do, we started at a quarter to eleven the next day for London, arriving at the Marble Arch at six o'clock. On this run I came across a nice piece of road, and timed three miles in exactly six minutes.

During the whole of this run, after leaving Salisbury, I neither touched a valve nor tightened a bolt. I was troubled a little with water in the petrol, and tightened up the chains once, but I never filled up with water more than once a day, and although, owing to water in the petrol, I had trouble with the lamps I never once had a lamp blow out. When leaving London owing to bad lubricating oil we ran badly, but getting fresh and better oil at Bournemouth we continued splendidly. After two days in London, on Sunday, the 28th April, we started for Wroxham at 3.45, going *via* Hatfield, Hertford, and Ware, to Newmarket, at which place we arrived at

seven o'clock. Soon after leaving Newmarket on Monday, the 29th April, the flinty roads caused tire troubles. We arrived at Wroxham at about four o'clock, thus finishing a most enjoyable and satisfactory trip. I found the hotels mentioned most satisfactory, and we were never charged more than a shilling per night for stabling the car. We had no special unpleasantness with drivers of horses until we reached Norfolk. That we were in that county we knew by the conduct of all in charge of horses; a more nervous set is has never been our lot to meet. They turned their horses round, covered their eyes, and gesticulated wildly on our approach. Even the drovers expected us to stop whilst they slowly drove their cattle past! All this was most amusing, though at times exasperating. In conclusion, I may say that we carried the whole of our luggage with us, and we never started before 10.30 a.m. or arrived after 7 p.m.

ERNEST ESTCOURT.

THE Pyrenean tour of the Bordeaux Automobile Club is fixed for the end of August, and is open to members of clubs and their friends. Biarritz, Pau, Lourdes, Gavarne, Bigorre, and Luchon will be visited, fêtes in honour of the event being held at the casinos of the two latter places.

THE Chater-Lea Manufacturing Company, of Golden Lane, E.C., manufacturers of cycle fittings, are now turning out a set of fittings specially intended for building up motor-bicycles. The Chater-Lea Company are only supplying the cycle portion of the machines, leaving cycle and motor experts to obtain and fit the motor and its accessories themselves.

THE Birmingham Motor Manufacturing and Supply Company, Ltd., has been registered with a capital of £5,000 to manufacture, sell, let or hire and deal in motors, cycles, cars, carriages, and vehicles of all kinds, and to carry on the business of electricians, engineers, tool makers, etc. The registered office is at 3, Temple Row West, Birmingham.

THE motor-car is in the way of bringing quite a different class of customer back to the villages, and the fact is worth the attention of those who own the soil. It would serve little purpose to leave it to the village publican himself, who cannot fairly be expected to understand what the situation requires. He needs direction, since he has little or no acquaintance with the new comer.—*Country Life*.

AN Automobile Gymkhana will be held at the Sheen House Club, East Sheen, S.W., to-day (Saturday), at 3.30 o'clock. The events, which are open to members of Sheen House Club and members of the Automobile Club, are as follows:—First event:—Starting Motor-Carriages from "Cold": The driver to start on foot 20 yards to the rear of his vehicle, run to his vehicle, start engine and race round the full course. Second event:—Bending Race for Motor-Carriages: Between staves; forwards to the last staff round which vehicle will turn and (still on their forward gear) return between staves to starting line. In heats. Third event:—Ladies' Race in Motor-Carriages: Motor-carriages to be driven by ladies, introduced by members of the Automobile Club or Sheen House Club, who may be accompanied by a gentleman. One mile. Fourth event:—Motor-Tricycle Coat and Waistcoat Race: At the end of the first lap the driver is to stop, dismount, take off his coat and hang it on a numbered peg; at the end of the second lap, take off his waistcoat and hang it up on the same peg; at the end of the third lap, put on his coat and waistcoat, and fully button both, and finish at the end of the fourth lap. Fifth event:—Obstacle Race for Motor-Carriages: Full course between gate-posts, dummies, etc., to include the opening and reclosing of a gate; and finish through a paper screen. Sixth event:—Starting and Stopping Handicap: Start from a line, and race over a straight course, and terminate over a line without touching a brick wall. Quarter of a mile. The winning carriage will be the vehicle the wheels of which (at the point at which they touch the ground) shall be over but not touching a line. If any part of a carriage touch the wall situated 4 ft. beyond the line it will be disqualified.

PORTABLE LIFTING-JACKS FOR MOTOR-CYCLES.

MANY a motor-cyclist whose machine has turned stubborn on a country road far from town or village, would have given almost anything to have had some means of jacking up the rear portion of the tricycle and so enable the

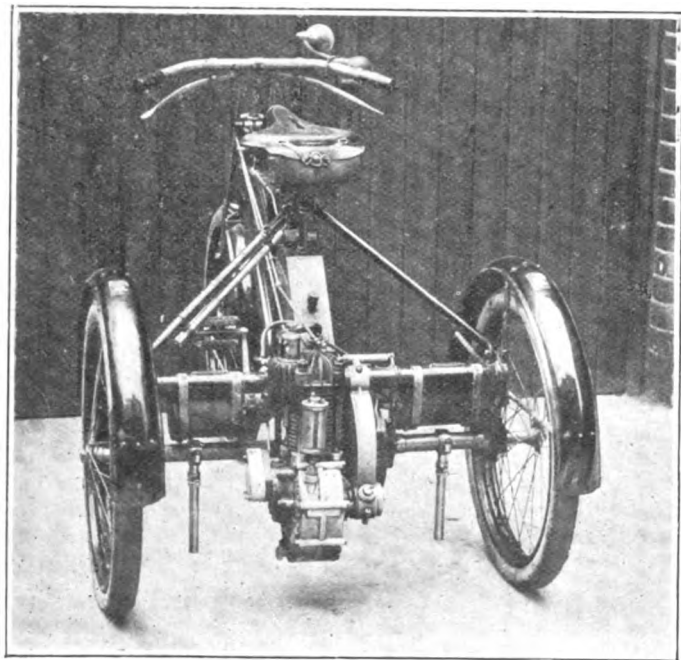


FIG. 1.—THE PORTABLE JACKS OUT OF USE.

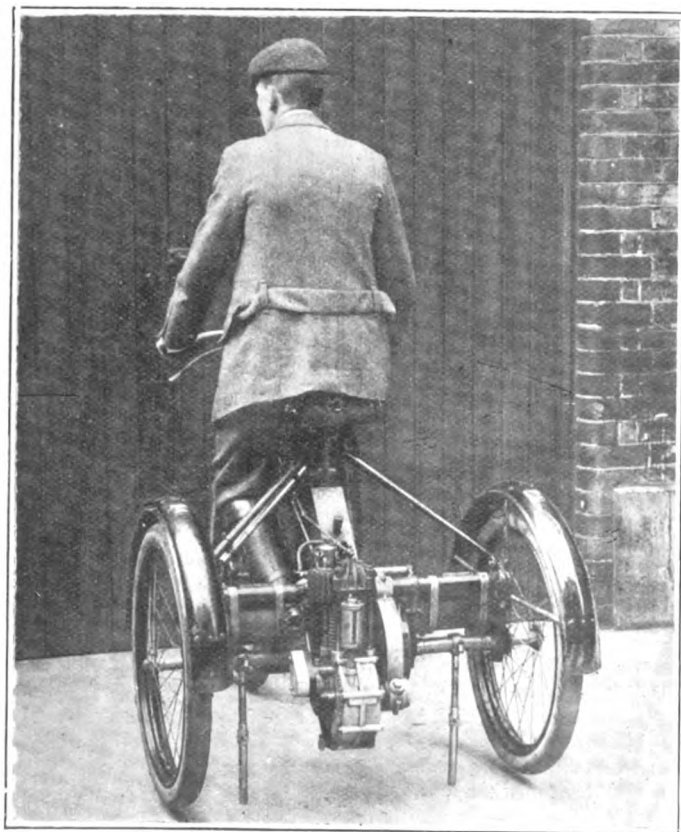


FIG. 2.—THE PORTABLE JACKS IN USE.

engine to be tried with a minimum of exertion, and also facilitate the work of repairing punctured tires. Several portable jacks have been brought out for this purpose from time to time, but

what is undoubtedly the best we have seen is that which has been brought to our notice during the past week by Mr. W. A. McCurd, of 147, Kennington Park Road, London, S.E., and of which we are able to give illustrations herewith, Fig. 1 showing the device out of use, while in Fig. 2 it is seen in use. On the rear axle are rigidly and permanently clipped, one on each side of the motor, what appear to be two projecting rods; these consist of practically two tubes, one within the other. Within each of the inner tubular pieces is a spring, held normally under compression by a pin passing through a hole in the tube. This pin is controlled by a spring and small handle, the latter being just visible in the illustrations. To lift the rear wheels off the ground it is only necessary to pull outward the two small handles; this releases the springs, forcing the outer tubes of the projecting rods down to the ground. The rear wheels are then each in turn lifted slightly off the ground, allowing the springs and outer tubes to slightly extend further, and permitting the two pins already referred to to slip in holes towards the lower end of the inner tubes, thus making the two tubes in their lengthened form one rigid piece. With the portable jack in the position shown in Fig. 1, Mr. McCurd demonstrated to us the practicability of his device of jacking up the rear portion of his machine, from a signal given by us, in the short space of 5 secs., afterwards mounting the machine with the rear wheels off the ground and setting the engine in motion. Although not clearly discernible, the rear wheels of the machine as seen in Fig. 2 are an inch clear of the ground. When out of use the lower end of the device is in line with the bottom of the crank chamber of the motor, so that there is plenty of clearance. Mr. McCurd assures us that there is no danger of the pins coming out and so permitting the outer tubes to be forced on to the ground by the springs whilst riding, and as the whole arrangement only adds about 3 lbs. to the weight of the machine we fancy that there are many motor-cyclists who will lose no time in adding it to their motor-trikes and quads.

MR. J. C. MERRYWEATHER, writing from 4, Whitehall Court, S.W., suggests that imported motor-cars should be subjected to a severe system of government inspection.

A FRENCH General, returning to barracks at the head of his regiment after the National Review, ordered the arrest of two gentlemen whose motor-car frightened his horse. The car and its occupants were surrounded by soldiers with fixed bayonets and escorted into the barrack yard.

THE Chicago Automobile Club recently organised a demonstration to the municipal authorities of Chicago with the object of making them acquainted with the conditions of certain badly paved thoroughfares, and the control motorists have over their cars.

JENS HENRI LANGGARD, a master mariner, and also in business as a marine surveyor, of Liverpool, came up for public examination, his liabilities being stated at £419 and assets £100. From the examination by the Official Receiver it appeared that the bankrupt had become the patentee of a non-collapsible tire for motor-cars. He alleged that the patent had been disposed of to a syndicate, and that he stood to receive a large sum when the tire was taken up by motor-car makers. The examination was closed.

WHAT is claimed to be the smallest motor-car ever built is that recently made by the Jenkins Automobile Company, of Washington, D.C., for Chiquita, a Cuban dwarf, who is now using it at the Pan-American Exposition at Buffalo. The car is a little electric Victoria, an exact miniature of a full size automobile. It has 12-inch wheels, fitted with $1\frac{1}{4}$ inch pneumatic tires. The cushion measures 14 by $8\frac{1}{2}$ inches; the distance from the step to the ground is 4 inches, and from the seat to the ground 14 inches. The front and rear axles are 24 inches apart, centre to centre, and the track is 24 inches wide. With the hood up the car only reaches up to about the elbow. The motor is hung beneath the body and connects with the gear on the differential directly on the rear axle.

CONTINENTAL NOTES.

BY "AUTOMAN."

ON the 14th inst. four competitors, three of whom were on motor-cars and one on a motor-cycle, left Moscow for a race to St. Petersburg, a total distance of 693 kilometres. The race was won by Masi on a 6 h.p. Bertrand car, who did the distance in 37 hrs. 54 min. An automobile race meeting was also held at Udine, in Italy, on the 16th inst., when, in addition to an automobile exhibition, there were races along the fine wide road from Udine to Tricesimo for motor-cycles and light and heavy cars.

MR. SANTOS-DUMONT'S remarkable feat on his steering balloon is occupying the attention of the automobile world across the Channel now that the Paris-Berlin race is a thing of the past. The well-known automobilist, M. Henry Deutsch, who, by the by, is a partner in one of the largest petrol firms in Paris, has offered a prize of £4,000 to anyone who will make a balloon or a flying machine and rise from the grounds of the Aero-Club, take a flight round the Eiffel Tower, and come back and descend in exactly the same spot. Mr. Santos-Dumont has been working hard for some time past to produce a machine able to accomplish this feat, and in order to obtain power with small weight he has called to his aid the petrol motor, which connects in interest his navigable balloon with the automobile world. Last week it was decided to test the capabilities of this wonderful machine, in the free air. The result was a remarkable success, and, but for a slight defect in the working of the motor, would have crowned Mr. Santos-Dumont's effort with complete success, and made him winner of M. Deutsch's prize. At a speed of about forty kilometres an hour the balloon went round and round the racecourse at Longchamps, rising and descending at will and turning about in any direction. Mr. Santos-Dumont, finding that it was so easy, although only three cylinders of his four-cylinder motor were working, decided to attempt the flight prescribed by M. Deutsch, and set off accordingly at 6:45 a.m. He reached the Eiffel Tower in thirteen minutes, when, whilst hovering over Auteuil, another of his cylinders failed, and the balloon immediately sank until a guide rope caught in some trees. The throwing out of ballast made the balloon rise again, and, gradually, with the motor in turn stopping and starting, Mr. Santos-Dumont arrived above the starting place, having accomplished the journey in thirty-nine minutes—not quick enough, however, even had he been able to descend, to win the Deutsch prize, which prescribes thirty minutes as the limit of time. As Mr. Santos-Dumont was about to descend, his motor stopped altogether and the wind carried the balloon away towards the trees in the Baron Edmund de Rothschild's property, where it came down. Fortunately, Mr. Santos-Dumont was not in the least injured, nor was his flying machine, and he is now only waiting for fine weather to enable him to make another attempt to secure the Deutsch prize.

IN Russia experiments are being made by the War Office with regard to military transport by automobiles. If these experiments prove nothing else, they will certainly demonstrate the bad state in which the Russian roads are, and, it is to be hoped, lead to some improvement in this direction.

READERS of the *Journal* will be interested to hear that the Baron de Schwiter, whose serious accident between Hanover and Berlin was described in my account of the Paris-Berlin race, is progressing favourably and is now likely to recover from his serious injuries.

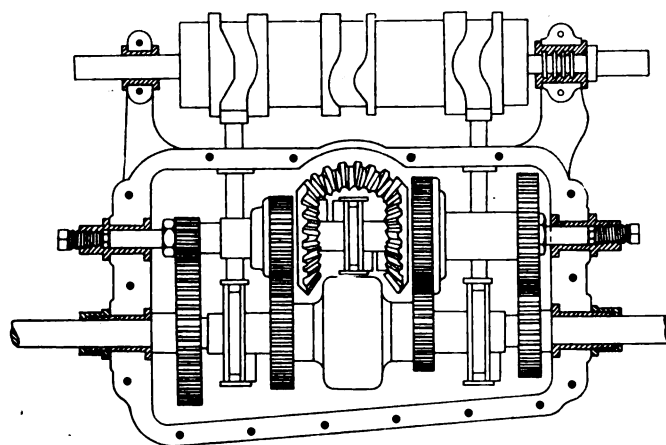
PRINCE ALBERT of BELGIUM is about to receive his new Gobron-Brillié motor-car, which is now at the carriage builders having the finishing touches put to it. He intends to take it at once to the Chateau des Amerais in the Ardennes, where he is going to stay some time.

BELGIUM is having its exhibition troubles, there being a dispute between the Société Auto-Veloce and the Chambre

Syndicale, the result of which is that the latter group, together with the A.C.B., have decided to hold an exhibition in March, 1902, in the large hall of the Palais du Cinquantenaire, Brussels, better known by Englishmen as the real ice skating rink. Curiously enough, while in England it has been decided to suppress the demonstration arena at the exhibition, the Belgians have decided to establish one in imitation of that which existed at the last two exhibitions at the Agricultural Hall.

THE HERING VARIABLE SPEED GEAR.

THE accompanying drawing shows a new variable speed gear constructed by Messrs. Friedrich Hering, of Gera, Germany, which is being introduced into this country by Messrs. Philipp and Co., of 20, Dashwood House, New Broad Street, London, E.C. The gear is of the permanent mesh type, and is adapted to give four changes of speed and reverse motion. The changes are effected noiselessly and entirely without shock by means of a system of levers actuating friction cones, motion to the levers



being transmitted by a series of grooved cams cut from the solid on an auxiliary shaft. The various changes of speed as well as the reverse motion are controlled by one lever or wheel, which actuates the cam shaft. All the gears are cut from solid steel forgings, and are enclosed in an oil-containing aluminium case. It will be noticed from the drawing that the shaft on which the driven pinions are mounted also carries the differential gear, the shaft being designed to transmit the power by chains to the rear road wheels of the car to which the gear is fitted.

A REPORT from Washington, U.S.A., states that the number of applications that are being received for patents on devices for automobiles is so great that it has been found necessary to have five special examiners on this work. Four separate divisions have been organized, to which are referred patent papers relating to the different power systems respectively.

MR. HARRINGTON MOORE, the Hon. Secretary of the Automobile Club, in providing for members the excellent *garage* or motor store-house, which we recently inspected at Westminster, has certainly conferred a long-desired boon on automobilists. Conveniently situated, with an excellent approach, the *garage* provides suitable storage space, with competent staff of cleaners, adequate provision for light repairs, and a stock of the thousand-and-one little things an automobilist requires, petrol, and lubricating oils. It has a register of drivers, undertakes the finding of buyers for the cars of Club members, and is open for the reception of members' cars week-days and Sundays, at any hour of the night or day. Mr. Moore's enterprise certainly merits success, for everything which tends to make automobilism easier—and this question of storage has certainly been a serious difficulty—must necessarily foster and augment the progress of the automobile movement.

THE CREESE MOTOR - STARTING DEVICE AND IGNITION GEAR.

IN our report of the recent Exhibition we briefly referred to the ingenious motor-starting device which has been introduced by the Creese Motor-Starter Company, Limited, of Blenheim Grove, Rye Lane, Peckham, S.E., and which can be fitted to any petroleum-spirit motor having two or more cylinders. With engines of this class, as hitherto constructed, the driver or attendant has not been able to easily ascertain which of the cylinders containing explosive mixture should be fired in order to start the engine, and it has been hitherto necessary to leave his seat, and turn a handle to start the engine, which oftentimes is performed at considerable inconvenience. To avoid these, amongst other objections, it has been usual, when it is required to stop the engine for a short time, to throw the driving mechanism out of gear and allow the motor to continue working, so that the restarting of the vehicle is effected by throwing the driving mechanism into gear again. Naturally, when this is done there is a considerable waste of petroleum-spirit, and also wear and tear on the engine. The Creese Company overcome these difficulties by providing an indicator operated by an eccentric, so that the driver or attendant can at a glance discover in which of the cylinders a working charge may be ignited in order to start the engine, and drive the vehicle in the proper direction. This indicator is numbered, for instance, 1 or 2, which corresponds with a contact device such as a push, which is numbered likewise. As an example, if the indicator points, on the engine stopping, to No. 1, all that is required is to push No. 1 button; the charge in the working cylinder is instantly exploded and the engine started.

In cases where the engine has been at a standstill for a considerable time, and the cylinders contain no mixture fit to be exploded, a pump can be provided, and connected with the carburettor by valve-controlled pipes for the purpose of enabling the working charge in any one of the cylinders to be recuperated, so that the working charge is rendered capable of being fired when the driver or attendant operates the ignition device belonging to such cylinder. This pump can be operated by hand or foot. Amongst the principal advantages claimed for the device are, (1) no necessity to descend from car in order to turn handle to start engine; (2) engine not working when car is at a standstill; (3) in descending hills or meeting with restive horses, the engine can be stopped by switching off the current, thus allowing the car to run almost noiseless.

In connection with the device an improved form of ignition gear is adopted. With devices of this class as hitherto constructed the surfaces of contact have been liable to become corroded or soiled and rendered ineffective on account of dust, oil, or the like, getting between them, and preventing good electrical contact being made at the proper time. In the new device the Creese Company claim to have overcome these drawbacks. Two movable pieces or rods forming part of an electric circuit and adapted to move or slide in a dust-proof casing, in

opposition to the action of gravity or a spring, are employed. The movable pieces or rods normally remain out of contact with each other, but at suitable intervals are caused to come into contact and complete the electric circuit of the ignition device, by a cam or other moving part of the engine acting upon one of the movable pieces or rods and pushing it against the other movable piece or rod. The last-mentioned movable piece or rod is provided with a screw and nut, for enabling the position of its contact surface relatively to the contact surface of the other movable piece or rod to be readily adjusted. The contact surfaces are coated with platinum or other suitable material. It is claimed that jolting or moisture has no effect on the new ignition gear and that no cleaning is required.

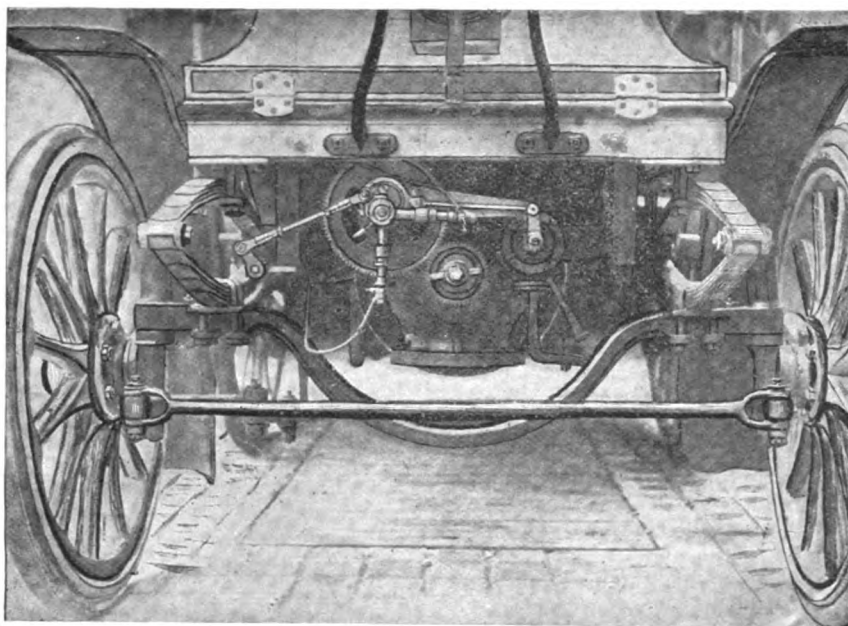
THE Thornycroft Steam Waggon Company, Ltd., has supplied a couple of their heavy vehicles to the German military authorities.

A THREE-MILES motor-bicycle race and a two-miles motor tricycle race are included in the list of events to be run off at the Sports Ground, Guildford, on Bank Holiday, August 5th.

ONE of the motor-cars plying for hire in Oxford caught fire recently in Cornmarket Street. The driver found that the weather board in the front of the vehicle had become ignited, but with a few buckets of water he quickly extinguished the flames.

MESSRS. S. AND W. CLEAVER, of Howland Mews, Tottenham Court Road, have a well-equipped workshop in which they undertake repairs of all sorts to motor-cars. Painting and decoration also receive the attention of skilled workmen on the premises.

A MEETING of shareholders in the Lincoln Motor-Bus Company, Ltd., was held last week to consider the possibility of re-floating the company on a different basis. It was suggested that a country service to and from the city could be made to pay, and a committee of shareholders was elected for the purpose of considering various



THE CREESE IGNITION GEAR.

ous proposals that were made, and obtaining information on which to work.

THE Irish Automobile Club tour starts on the 8th August next, and so far promises to be a great success. It is necessary, however, that the Secretary of the Irish Club should have the earliest information from parties desiring to join, giving the following particulars:—(1) Number of party, and if mechanic accompanies; (2) class of car; (3) will party start from Dublin, or join in later; (4) do they purpose going over the full itinerary; (5) do they require any arrangements made as to transfer of their cars from England to Ireland and back.

THE other day Messrs. James and Browne, of Hammersmith, showed us samples of a new radiating coil for motor-cars fitted with water-cooled petroleum-spirit motors, they are putting on the market. The coil is made up of 1in. brass tubing with large radiating ribs soldered on; the bends consist of stout pieces of brass, notwithstanding which the weight of the coil comes out at only 11lb. per foot. The coils can be made in any desired shape, to suit different types of cars, and a feature of them is that no wooden separating pieces are employed. We understand that before putting the new coil on the market, the firm have subjected it to extended tests through which it has passed with satisfactory results.

COMMON-ROAD STEAM-CONVEYANCE COMPANY.

ON Wednesday evening the Committee and Shareholders of this Company entertained a numerous party of capitalists, coach-proprietors, innkeepers, and others interested in the preservation of the common roads of the country, at the Albion Tavern, Great Russell Street, Covent Garden; W. Theobald, Esq., in the chair. The dinner and wines were excellent. After the customary loyal toasts had been drunk, the report of the committee was read, from which it appeared that the company had entertained the proposition of steam conveyance on the common turnpike road, in consequence of the highly favourable reports of committees of the House of Commons, in which it was observed—"That steam carriages could ascend hills of considerable inclination with facility and safety—that they were perfectly safe for passengers—that they would become a speedier and cheaper mode of conveyance than carriages drawn by horses—that, with the slightest exertion, they might be stopped and turned under circumstances where horses were totally unmanageable—that they would not act so injuriously on common roads as the feet of horses—that the substitution of inanimate for animal power in draught on common roads is one of the most important improvements in the means of internal communication ever yet introduced; and that its practicability had been fully established." Mr. Mackinnon, the member for Lymington, as chairman of the Committee in 1839, had also observed that he considered the evidence respecting Colonel Maceroni's invention to be most satisfactory and conclusive. He was very glad that evidence had been received, and it would greatly assist the Committee in recommending a means of saving the main roads, and the interest connected with them, from the ruin with which they were threatened. The report then stated that the prejudice which existed against such a mode of conveyance was fast dying away; that the Committee had received the most positive assurances of aid, for the road interests had discovered that it was only by the adoption of the common road steam carriage that their property could be preserved and their traffic maintained; that a patent for Colonel Maceroni's last invention had been obtained; that a carriage and machinery were in the course of construction at the factory of Mr. Beale, at East Greenwich, which would be ready early in the spring, and that the Committee would be able to make such arrangements as would establish the carriage in general use in this country, without calling for the full amount of the capital suggested in the prospectus. The Chairman and Messrs. Gordon, Beale, Hodson, Concanen, Benningfield, Goldney, and other gentlemen addressed the company at considerable length, in which they demonstrated the practicability of steam-conveyance on common roads, and delineated a lamentable picture of distress brought on the previous carriers and other persons who were entirely dependent on the public roads for support, by the privileges granted by Parliament to private companies, which have monopolised the traffic in all direct lines, to the exclusion of all byeway communication. The evidence of the Marquis of Tweeddale, Mr. Mackinnon, M.P., and others, who had travelled in the Maceroni carriage, was quoted, and the meeting appeared quite satisfied that steam-conveyance on turnpike-roads was not only practicable, but that the mode adopted by Colonel Maceroni was the best means whereby it could be brought into general practice.—(From *Bell's Life in London*, February 2nd, 1840.)

THE following letter has been issued by the Automobile Club to all firms engaged in the manufacture or sale of electrical vehicles:—"Mr. Theodore Chambers, of the British and Foreign Electrical Vehicle Company, Limited, has written suggesting that a meeting of makers and sellers of electrical motor-vehicles should be held at the Club to consider the requirements as to the charging of electric vehicles, and such matters as standard voltage, standard plugs, etc. I shall be glad if you will kindly let me have your opinion as to this suggestion, and also let me know if you are willing to attend such a meeting." The following firms have agreed to attend a meeting:—The Electric Motive Power Company, Limited; Shippey Bros., Limited; Electric Power Storage Company, Limited; Mr. E. W. Hart.

HERE AND THERE.

THE Bliss Chainless Automobile Company, of North Attleboro, Mass., U.S.A., are making a steam car with spur gearing in place of chain transmission.

IN Hartford, U.S.A., the police have abandoned the frog's-march and stretcher as a means of transport for such as will not or cannot walk. A handsome electric motor-car with two uniformed attendants has replaced the time-honoured if less dignified methods. Fears are expressed that the temptation to ride free under such pleasant conditions may lead to an epidemic of minor offences.

A LETTER from the Lord Justice Clerk of Scotland, which appeared in a recent issue of the *Motor-Car Journal* on the nomenclature question, was considered at a meeting of the Standing Committee of the Automobile Club, and it was recommended that the Scotch Automobile Club should be asked to consider the question of nomenclature, and to submit their recommendations to the Club Committee.

THE Locomobile steam car, in its latest form, comprises a number of improvements, which are sure to be appreciated by those motorists whose fancy lies in the direction of steamers. A water tank of larger capacity than formerly is now being fitted, thus enabling a longer distance to be run before it is necessary to fill up with water. But, perhaps, the most important improvement is the fitting of a feed water heater and a petrol shut-off valve. By the use of the former not only is the "steaming" capacity of the boiler greatly increased, but an economy in fuel is effected. As for the petrol shut-off valve, this is located near the seat, enabling the driver, at all times, to control the "fire." Other alterations include an enclosed differential gear, spring coil piping, and an extra large cylinder oil cup. We hope shortly to make a trial run on one of the latest type of Locomobiles.

AT a recent meeting of the Standing Committee of the Automobile Club, the Secretary reported that he had been informed privately of the name of the motor-car owner, in consequence of whose behaviour the Duke of Portland had refused to allow motor-cars to run through his Welbeck Estate. It was recommended to the Club Committee that the Duke of Portland should be asked to permit members of the Automobile Club and of its affiliated clubs to drive through Welbeck on condition that they first obtain from the secretaries of their respective clubs a special ticket bearing the name of the member to whom permission is given. The ticket to be available for one occasion only, and to be given up to the lodge-keeper.

A NEW pneumatic tire for motor-cars and other vehicles has been devised by Mr. S. Willington which is claimed to effect an immense saving in wear and tear of the wheels and other parts of the vehicle. The new tire contains no inner tube. The air chamber is rectangular in shape, and is lined and strengthened with canvas. The rim of the wheel is of channel-shaped iron or steel, the sides of which support the rectangular walls of the tire. No complicated means of attachment are required, the inflation alone causing it to become rigidly fixed to the wheel. The tire is said to be capable of resisting enormous pressure without distortion; and, after practical tests, it has proved to be absolutely puncture-proof. The tire is moulded under high pressure; the tread or running surface is not built up in sections but is solid, and its hardness under high pressure gradually increased towards the surface. A puncture-proof band over the air chamber serves to prevent undue dilation of the outer circumference or tread of the tire. The tire is so constructed that if deflated a car can be driven home without injury thereto. There has also been introduced a new, simple, and ingenious improvement for preventing the tire from creeping, which will be known as the "Anchor Bolt." The latter can be applied to solid as well as to pneumatic tires. A syndicate is now being formed with a capital of £3,000 and with the title the Carriage Pneumatic Tire Syndicate, for the purpose of developing and placing the new tire upon the market.

WE understand that orders have been placed for a motor-car service between Colombo to Mount Lavinia, Ceylon.

TO-DAY (Saturday) the Automobile Club of Ireland will hold a run from Dublin to Blessington and back.

MR. W. LONG, the President of the Local Government Board, has made an expedition to Marlow and back on a motor-car.

LORD INGESTRE, the only son of the Earl of Shrewsbury and Talbot, has just purchased a Darracq *tonneau* from the British Automobile Commercial Syndicate.

THE West Croydon Engineering Company, of St. Michael's Road, West Croydon, undertake all kinds of repairs to motor-cars, and supply petrol, oils, greases, etc.

ON Sunday last the police about Paris had a busy time of it. Thirty-three motorists were arrested for furious driving, nineteen of the captures taking place at Saint-Cloud.

THE King of the Belgians has had fitted to the sides of his *tonneau* receptacles containing a complete luncheon service, so that whilst on his tours he can take his meals on board.

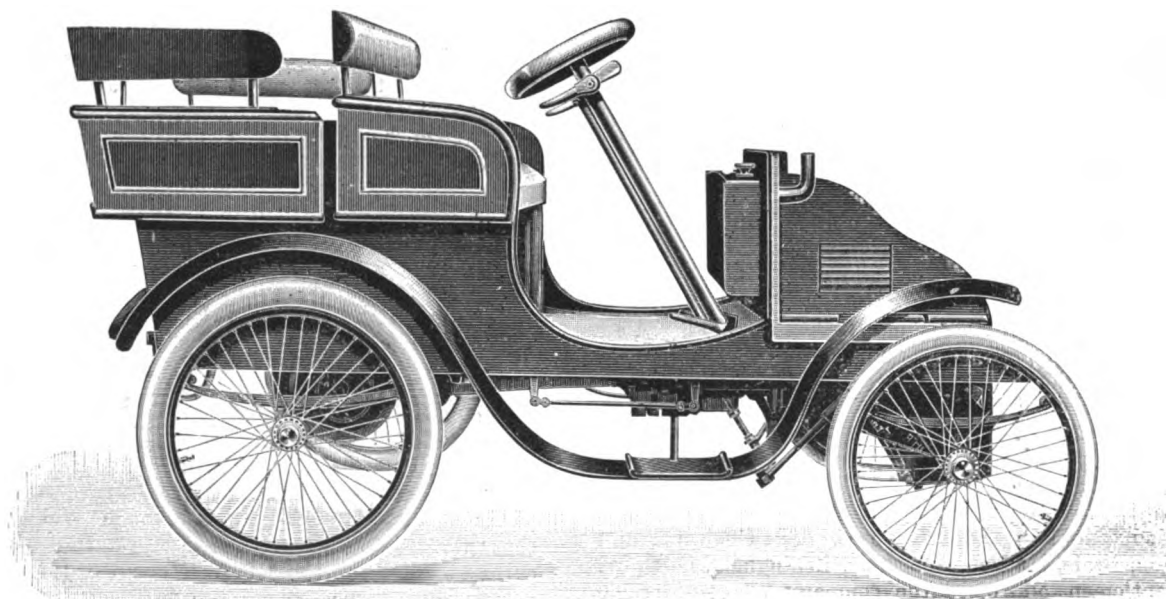
THE Shirebrook Colliery Company recently took advantage of the general holiday resulting from the Miners' Demonstration at Chesterfield to give their officials a motor-car trip to Matlock and Bakewell.

ONE of the cars belonging to the Bexhill Motor-Car Company recently conveyed sixteen employees of a local firm to Canterbury (where a stop of four hours was made), and back to Bexhill the same day. Though the roads were in bad condition owing to heavy rain the excursion was most successfully accomplished.

AT the last meeting of the Standing Committee of the Automobile Club, a letter on the subject of motor horns and bells, which appeared in a recent issue of the *Motor-Car Journal*, was submitted, and it was agreed that nothing could be done in the matter until the law affecting motor-vehicles was revised.

WE regret to have to announce the death of Mr. J. McDonald, manager of the Cycle and Motor Company's depot in Dublin, which occurred on Saturday last after a painful illness. Seeing a promising future before automobilism, he took up the matter in a thorough way, and very quickly established a sound business in the motor trade in Ireland.

MR. COURSE and a party of friends met with an alarming experience whilst descending a hill near Rushden in a motor-car the other day. The chain broke, the car swerved and ran into a ditch four feet deep, throwing its occupants on top of a hedge, where they escaped further injury. Unfortunately, with the capsize of the car the oil caught fire and considerably damaged the vehicle.



THE "REX" 6 H.P. GEAR-DRIVEN CAR, MADE BY THE BIRMINGHAM MOTOR MANUFACTURING AND SUPPLY CO., LTD.

A SPEED contest from Eisenach to Meiningen and Zella and back to Eisenach via Oberhof, a distance of about 150 kilometres, is being organised by the Mid-German Automobile Club for the 4th August.

MAJOR DAVIDSON and Capt. John A. Ridgeway, U.S. Military Academy at Highland Park, Ill., and six cadets left Chicago, via Indianapolis, for Washington, on the 20th inst., on two automobile gun carriages.

THE Bristol Motor Company will display four of the latest patterns of motor-cars at the exhibition in connection with the congress of the British Medical Association to be held at Cheltenham from July 29th to August 2nd.

WE learn from Calcutta, India, that a company has just been organised to establish a public motor-car service between Giridih and Hazaribagh, a distance of 87 miles, for the conveyance of passengers and the mails. It is reported that the company has decided to adopt steam vehicles of the Serpollet type.

AUTOMOBILISTS passing through Carlisle on their way to and from the North should note that any repairs needed can be promptly executed by Mr. J. Fendley, at the County Engineering and Motor Works, Cecil Street. Mr. Fendley is official repairer for De Dion-Bouton, Ltd., and the Motor Manufacturing Company, Ltd.

THERE was a big display of motor-cars at Windsor on Saturday last, Mr. Roger Wallace, K.C., the Chairman of the Automobile Club, having invited the members to take tea with him at the White Hart Hotel. About eighty guests availed themselves of Mr. Wallace's hospitality, and a very pleasant time was spent, the run to Windsor and back to town being greatly enjoyed.

AT Stafford Police Court the other day Mr. Peach, the presiding magistrate, asked the clerk what was the maximum speed at which motor-cars were allowed to travel, and whether there was any bye-law which could regulate their speed, of which he heard constant complaints. The clerk replied that there was no such bye-law in Stafford, but by Act of Parliament no vehicles were permitted to travel at a greater speed than twelve miles an hour.

THE proprietor of the Riviera Hotel, Maidenhead Bridge, "on the Bath Road," has offered to the Automobile Club a room for its exclusive use in the hotel, and suggests that probably next year a suite of rooms can be placed at the disposal of the Club. Certain conditions have been suggested by the Standing Committee of the A.C.G.B.I., and if these are agreed to it is probable that the room above referred to will be at the disposal of members in the course of a week or two.

THE "BIG EVENT" OF 1901.



THE Trial Rules Committee of the A.C.G.B.I. met on Monday last. Lieut.-Colonel Holden, R.A., F.R.S., in the chair.

Representations made by makers of vehicles were carefully considered, and the following decisions were arrived at:—

Detours.—The deduction of marks for detours referred to in Rule 31 applies only to the intentional detours referred to in the last paragraph of Rule 30. The final paragraph of Rule 30 to be altered to read:—“Detours made to avoid arriving at a point before time will be accounted as stops. If a detour is accidental, the time lost will not be accounted as part of the running time, and marks will not be deducted.” Rule 31 to be altered to read:—“Any vehicle making a detour must return to the spot at which it left the route.”

Route.—It was agreed that the Hon. Observer should be responsible for pointing out the correct route to the driver of a vehicle.

Private Owners' Section.—Vehicles in Section II. will run under precisely the same restrictions as vehicles in Section I. if the owners desire to compete for an award. The owner by entering a vehicle in Section II. thereby necessarily declares that he is not, or is not about to be, engaged in the manufacture or sale of such vehicles.

Washing Vehicles.—It is hoped that arrangements may be made by which the vehicles may be moved from the Exhibition Gardens at about 8.30 p.m., and that they may be washed under the same roof as that under which they will be stored. In that case arrangements will be made for the washing period to commence at 9 o'clock at night; the period for washing will be extended to one hour, and there will be no limit as to the number of men engaged in washing a vehicle. The adjustment, lubrication, and replenishing of fuel tanks will commence from 6.30 a.m., but not later than 7 a.m.

Spare Outer Covers.—As the vehicles will not travel more than a little over 100 miles on every day, and will return each evening to their starting point, the Committee consider it is unnecessary for the appearance of a vehicle to be disfigured by the hanging to it of an outer cover of a tire. Such a practice leads the public to consider that if they buy a car and take a day's journey on it, it will be necessary for them to have an outer cover attached to the car. But in order to meet the views of competitors, Rule 81 has been altered to read:—“The carrying, during a trial run, of spare outer covers of pneumatic tires so attached to a vehicle as to be within sight of the public is prohibited.”

Hill-climbing Trials.—The formula by which the marks for the hill-climbing trials will be calculated is

$$\frac{\text{Speed} \times \text{number of passengers}}{\text{Price}} \times 1,000$$

The number of passengers will be the minimum number carried at any time during the hill climb. The number of passengers carried must not exceed the number during the other portions of the run.

Delivery Vans and Electric Vehicles.—It was decided to add to the Classification of Section I. :—Class F., Delivery vehicles; Class G., Vehicles propelled by Electricity. A gold and a silver medal are offered in each of these classes, but these will not be awarded unless the Judges' Committee consider the vehicles are worthy of the awards. The delivery vans will be required to carry the load declared by their owners on each of the five days for a run of nine and a half hours, including half an hour compulsory stop for luncheon. The runs will be made out and back on the route for the day. The fuel consumption of delivery vans will be measured. The electrical vehicles will be required to run each of the five days on the route for the day to such point as may be thought good by the driver, and back to the Exhibition on one charge. One mark will be deducted for every minute occupied on the run in excess of the official maximum, i.e., ten miles per hour, and eight miles per hour through controls. The same batteries must be used throughout the five days. If the vehicle fails to run back to the Exhibition, no marks will be given in respect of the day's run.

Ignition Apparatus.—It was decided to include in Section III., Class G., Ignition apparatus.

Entry fee £10, to be paid before noon, on Thursday, August 1st.

FURIOUS DRIVING CASES.



At Highgate, Mr. Ernest Owers, of Hampstead, was charged on a police summons with driving a motor-car in High Road, North Finchley, on the 3rd. inst., at a speed greater than was reasonable or proper, having regard to the traffic on the highway.—Police-constable Overall, 615 S, said that Mr. Owers was driving his car at the rate of twenty miles an hour. A number of cyclists were obliged to stop and dismount, owing to the dust made by the car.—Mr. Owers said he must plead guilty to going more than twelve miles an hour. He was going at the second speed, fourteen miles an hour, and his car was fitted with four powerful brakes, and could be pulled up in its own length. On your own showing you were going very fast.—Mr. Owers: If you would allow me, I should be pleased take you along that road in order to show you there is no danger.—Sir John Glover: I am much obliged. You will be fined 20s. and costs.

At Sittingbourne, Mr. Fred Osborn, of Watford, Herts, was fined £5 and costs for driving a motor-car at an excessive speed at Sittingbourne on June 21st.—The defendant, it was alleged, drove at fourteen or fifteen

miles an hour, causing a horse attached to a dogcart, belonging to a local farmer, to take fright and break the shafts and throw out the occupants.—Mr. Staplee Frith, who defended, said he should apply for a writ of certiorari to quash the conviction, on the ground that the defendant had not been proved to be either the owner or the driver of the car, he, in fact, being seated behind, having no interest in the car, in which he was a passenger only.

At Ryde, Wilfred Morgan was charged with driving a motor-car at an excessive speed, and pleaded guilty. P.C. Taylor said defendant went round the Canoe Lake at a furious rate, and witness timed him as going at twenty miles an hour. Defendant said he was testing the car, which was built to go only eighteen miles an hour. The Mayor said that would be excessive. Fined 1s. and 8s. 6d. costs.

At Epsom, Henry Ward was summoned for having driven a motor-car at a furious pace, in London Road, Cheam, on the 7th inst. P.C. Ashley fixed the speed at which the car was being driven at from fifteen to sixteen miles an hour. When stopped, defendant said he thought he could ride fourteen or fifteen miles an hour outside the radius, and mentioned that the brake refused to act. Corroborative evidence was given by two other constables. Fined £1 with 11s. 6d. costs.

At Chertsey, George Sparks, of Bedfont, was summoned for driving a motor-car in Windsor Street, Chertsey, at a dangerous speed, on July 8th. Defendant pleaded not guilty. P.S. Wright stated that at 12 p.m. mid-day, on the 8th inst., he was on duty in Windsor Street in uniform near the Infants' School. The children were just coming out of school. At the same time he saw a motor-car coming from the direction of the church. There were three persons in the car, which was travelling at from sixteen to twenty miles an hour. As defendant passed, witness called on him to stop, but he took no notice. He went straight ahead, and disappeared up Staines Lane. From inquiries he made the same day he went to Bedfont and found defendant at Stone Villa. In reply to witness' statement, he said he did not see him. William Glover corroborated. Defendant alleged that he was using his hill-climbing gear, which could not drive the car at more than nine miles an hour. Fined 40s.

At Aberdeen the charge against William Hepburn for driving a motor-car at a greater rate of speed than is allowed by the regulations of the Light Locomotives on Highways Act, was called again before Sheriff Robertson. Mr. A. W. Edwards, solicitor for accused, objected at the previous diet to the competency of the complaint, on the ground that the regulations had not been submitted to Parliament, in terms of the section on which the offence was founded. The Sheriff said that was a matter of proof, and accused pleading not guilty, evidence was led. It appeared from the testimony of a police constable and another witness that on the occasion libelled—a recent Sunday evening about seven o'clock—the motor-car passed down Albyn Place at the rate of about thirty miles an hour. So far as he could see, there was nothing in the section to indicate that the regulations were not to be enforced until they had been laid before the Houses of Parliament. Therefore, he had no hesitation in dismissing the objection to the competency of the complaint upon the double ground that it had not been proved that the regulations had not been laid before Parliament, and that, even supposing they had not been laid before Parliament, he was not bound by that to hold that these regulations were invalid. He found the charge proven, and imposed a fine of 40s., with the option of ten days' imprisonment. At Mr. Edwards' request, his Lordship agreed to state a case.

At Richmond, Ernest de Wilton, of Bayswater, was summoned for driving a motor-tricycle at a greater speed than twelve miles an hour. Evidence was given by P.C. Buckley that the defendant was travelling at about sixteen miles an hour. Defendant said he had a stop watch registering a fifth of a second on his handle bar, and a cyclometer on his front wheel. He was timing his speed so as to do a tenth of a mile in between thirty and thirty-six seconds, in view of his acting as an official observer to some automobile trials in Scotland in which a speed of over ten miles an hour was prohibited. The Bench dismissed the case.

At Steyning Samuel A. Smith was summoned for driving a light locomotive at an improper speed. Defendant pleaded guilty. P.C. Bristow stated that on Sunday, June 16th, three-quarters of an hour after noon, he timed the speed at which the defendant was travelling through Southwick on a motor-car. He stopped him, and told him that he had covered a furlong at the rate of over twenty miles an hour. Defendant said he was geared to run at the rate of about thirty miles an hour, that the road was very bumpy, and, therefore, it was impossible for him to go at so high a rate of speed. The average speed at which he could travel was fifteen miles an hour. He was fined £3 16s. 11d., including costs, or in default sentenced to a month's imprisonment.

At Llandudno, D. [M. Kenworthy, of Sale, Cheshire, was fined 25s. and costs for driving his motor-car at a furious pace along the Promenade at Llandudno.

On Wednesday the Worthing magistrates were engaged for several hours in hearing a summons against Mr. Harvey Du Cros, of Birmingham, for driving a motor-car at an unreasonable rate of speed—eighteen miles an hour. When the case came before the court a month ago the six justices who were present were equally divided in opinion, and a rehearing was therefore necessary. On Wednesday there were nine magistrates present. In the course of the evidence given the witnesses variously estimated the speed of the motor-car between fifteen and twenty

miles an hour, and it was shown that the car collided with a brougham, overturning it and throwing the horse to the other side of the street. The evidence for the defence was that the car was going at its lowest rate of speed, from six to eight miles an hour, but the Bench imposed a fine of £5, with £3 1s. 4d. costs. It was stated that Mr. du Cros had been twice previously fined for furiously driving.

At Southport, Edward Ditchfield was summoned for furiously driving a motor-car on the 13th inst. P.C. Black stated that at ten minutes past nine on Saturday night, the 13th inst., he saw the defendant driving a motor-car. For a short distance he went at a rate of from fifteen to twenty miles an hour. A watchman named George Richardson corroborated. Defendant pleaded not guilty; he was simply keeping his car moving while waiting for his employer, but he saw another car going quickly along the street, and it was not until nearly twenty minutes after that the officer spoke to him. The Bench considered the case proved, and inflicted a penalty of 10s. and costs.

A NOISELESS MOTOR.

At Wimbledon, Edward Porter, of Wimbledon, was summoned for driving a motor-bicycle and not giving warning of his approach as required by the regulations.—P.C. Richards said that at 9 15 a.m. on the 27th June defendant was driving a motor-bicycle along the Broadway. He never gave any notice of his approach, and eventually ran into and knocked down an old lady. She was not hurt. Defendant, on being spoken to, said he could not ring a bell because he had lost it.—The Chairman: At what pace was he travelling?—P.C. Richards: Not very fast.—The Chairman: These things make a puffing noise.—P. C. Richards: There was a train passing at the time.—The Chairman: 20s. including costs.

MOSSBERG BEARINGS IN COURT.

In the City of London Court, Mossberg Roller Bearings, Limited, Starchley, Birmingham, sued for £20 for roller bearings supplied to a motor-car for the defendant, Mr. B. C. Wooton, Thornton Heath. Mr. Edgar P. Bainbridge, managing-director of the plaintiff company, said that in November, 1899, he arranged with the defendant to supply Mossberg roller bearings for a motor-car for £20. They were to be fitted in a satisfactory manner to the defendant's Daimler motor-car. The original bearings were supplied by the Daimler Company, but they used soft steel, and it was found necessary to substitute hard steel. That was not found out until the car had been run. The Daimler shafts were too short, and it was found that new axles had to be made. That was done by the plaintiffs, who had made a satisfactory job of it. At the last the defendant relieved them of the responsibility of fitting the roller bearings by getting some one else to do it, and he was now asking the plaintiffs to be made liable for £24 for that. Mr. F. Abrahams, defendant's counsel, said they had raised a counterclaim for £24, because that was the sum which defendant had had to spend in doing the work which the plaintiffs were now suing him for. The defendant said he was particularly anxious to have the work done well, as he used the car for business purposes. Bargate, who had been the plaintiffs' London manager, told him to get the bearings fitted, and he said that the plaintiffs would pay the expense. At that time it was not thought that the sum would exceed £20. The car was still fitted with the plaintiffs' bearings, but they did not run altogether satisfactorily. Mr. Hurst, of Messrs. Hurst and Co., engineers, Croydon, said they were employed by the defendant to put the car in order. He found that the main axles had been turned down in diameter in the lathe. They were reduced in diameter and strength, and the axles were three-sixteenths of an inch out of line. They had to be refitted, and he had the work in hand from May until September. He had fitted the car up again, but there were four tracks instead of two now. His account of £24 had been paid. The Deputy Judge said that, having regard to all the circumstances, he thought that the plaintiffs had only completed their job after what Messrs. Hurst had done. The plaintiffs must be taken to have performed their contract, and they would have judgment for the sum claimed, £20. He also thought that the defendant had proved his counterclaim, but he could not have more than £20. The result would be that there would be no costs on either side, and neither party would get anything. Both would be out of pocket by the transaction.

FATAL ACCIDENT.

At the adjourned inquest, held at Halesmere, on the body of Thos. Nash, the victim of the recent motor-car accident, Mr. Hulford and Rev. G. H. Purdue affirmed that the car was going at the rate of twenty-five miles an hour, and Mr. Barnes stated that the driver was frequently cautioned as to his speed. The Coroner asked the jury to say whether death was due to an accident or to the criminal negligence of the driver. The jury returned a verdict of "Accidental death," but the driver was severely censured for the careless manner in which he drove the car.

BRITISH MOTOR TRACTION COMPANY v. LONGUEMARE.

In the Chancery Division of the High Court of Justice, on Friday, 19th inst., before Mr. Justice Kekewich, Mr. Bucknill said that he had a motion in this matter on behalf of the plaintiffs for an interlocutory injunction to restrain the defendant from infringing a patent belonging to the plaintiff company, but he suggested that it might be desirable to allow the motion to stand until the action of the British Motor Traction Company v. Friswell, which raised the same question, had been disposed of by Mr. Justice Farwell. Eventually the course suggested by counsel was agreed to. Mr. Justice Kekewich said he thought it was the proper thing to do, but defendant must undertake to keep an account of machines manufactured or sold in infringement of the plaintiffs' patent. Simply on that undertaking there would be no order on the motion except that the costs be costs of the action. If the defendant does not shake the validity of the plaintiffs' patent in the other action before Mr. Justice Farwell, he will have to submit to judgment in this action.

AMONG the novelties at the recent track race meeting at Brooklyn, Mass., was the 18 h.p. American-built petrol carriage entered by J. T. Robinson, jun., of the Robinson Motor-Vehicle Company, of Hyde Park, Mass. This machine is said to be virtually a copy of the Napier car. It has a sheet metal bonnet at the front which covers the four-cylinder vertical motor. The engine has 4in. by 6in. cylinders, with a separate vaporiser for each cylinder. A pump driven by the motor injects petrol from the tank into a cup on the dashboard, the excess running back to the tank through an overflow pipe inside the cup. By this arrangement a positive form of constant level feed is maintained without the troubles usually accompanying the use of a float. The transmission gear is adapted to give two speeds forward and a reverse, and is operated by two hand levers projecting through the footboard near the centre of the seat. The water circulation is maintained by a rotary pump driven by a chain from the motor, the water being cooled by passing through flanged radiating coils placed below the body in front. The vehicle has a frame of channel iron and wood wheels with heavy parallel bearing hubs. It weighs about 2,400 pounds.

TO CORRESPONDENTS.

All communications intended for insertion in this Journal or relating to Editorial matters should be addressed to THE EDITORIAL DEPARTMENT, MOTOR-CAR JOURNAL, 39 and 40, Shoe Lane, London, E.C. Letters must in all cases be accompanied by the name and address of the writer, as no notice will be taken of anonymous communications.

The Editors cannot undertake to return MSS. or drawings, although every effort will be made to do so in the case of rejected communications. Where such are regarded as of value, correspondents are requested to retain copies.

The Editors do not hold themselves responsible for the opinions expressed by their correspondents, or for statements and facts which do not appear in the editorial columns.

The Editors and publishers beg also to state that they will accept no responsibility for unsolicited contributions, even if used, unless payment for same is directly specified in forwarding, and the terms arranged before publication.

To insure insertion communications and contributions must be in the Editor's hands by Wednesday forenoon of the week in which the same are intended to appear. Disappointment may be caused by non-compliance with this rule, and to avoid this earlier receipt, if possible, is necessary.

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COMMENTS.



THE King paid a brief visit to Windsor on Saturday last, travelling by motor-car from town, despite the wretched weather. His Majesty arrived at the Castle shortly after two o'clock, and after luncheon inspected the alterations proceeding at the Castle. Late in the afternoon the King again requisitioned his motor-car, and proceeded by road to Downe Place, Lord Alington's beautiful riverside seat, where he was the guest for the week-end. His Majesty, attended by Captain Holford, reached Marlborough House shortly before one o'clock on Monday afternoon, having travelled up by motor-car from Downe Place, Berkshire, upon the termination of his week-end visit to Lord and Lady Alington. It may be added that the Queen also recently took a fifty-mile ride round of the commons and lanes of Surrey upon her motor-car. The run was quite unostentatious, Her Majesty being accompanied by one lady and the driver of the car only.

The Maybach Patent.

AFTER much heralding in the press and much discussion in the automobile world the validity of the Maybach patent has been the subject of a lengthy trial in a court of law. On Monday Mr. Justice Farwell gave a decision which made it plain that there was no infringement in any way whatever on the part of the defendants. This will be apparent to all who read the full judgment which we reproduce on another page of the present issue. Under the circumstances, and in view of the clear statement of Mr. Justice Farwell, it is hardly likely that the plaintiffs will be so ill-advised as to appeal against the decision. Already the dispute has had a bad effect upon business, the pretensions of the plaintiffs having probably deterred many would-be purchasers of motor-cars. They should now be content to go on their way quietly working for the general welfare of the industry as well as their own particular success. The officials and members of the Protection Association are to be congratulated on the results of their action.

The Scottish Automobile Club.

THE Eastern section of the Scottish Automobile Club had a run on Friday, the 26th ult. The cars met in Charlotte Square, Edinburgh, and the members had a most enjoyable trip to Haddington, the roads being in first-rate order, with no dust. Lunch was served in the George Hotel, Haddington, after which the run was resumed to Dunbar, the intention being to witness the sports of the Lothian and Berwickshire Imperial Yeomanry. Unfortunately, however, when the course was reached the weather changed, heavy rain coming on, causing most of the members to decide to return. Amongst those present were Professor Dawson Turner on his Delahaye car, Mr. John Wilson on his Napier car, Mr. John Love on a M.M.C. phaeton, Mr. John Macdonald with the new Kingsburgh car, Mr. Sleight

on a Daimler wagonette, and Mr. T. R. Outhwaite on his Daimler car. At Hadlington, Dr. Ronaldson, on his new Delahaye car, which recently arrived from Paris, joined the party.

Motor-Car Regulations in Lancashire.

THE report of the Lancashire Main Roads and Bridges Committee, issued last week, contains an important reference to the regulation of motor-car traffic and speed in the County Palatine. The Committee have had under consideration the memorial from manufacturers and sellers of motor-vehicles with reference to the carrying of a distinctive number, and as to the limit of speed being reduced to ten miles an hour, as the outcome of which they recommend:—(1) That the general law of the land for all vehicles as extended by the special regulations issued requiring the drivers of motor-cars to stop on the request of any police-constable or of any person having charge of a restive horse, if scrupulously observed and rigorously enforced is at present sufficient to secure the public safety, provided, that every driver should be required to obtain and carry a licence of competency to drive a motor-car, and that each motor-car have affixed to it some identifying number. (2) That, in order to avoid the risk of accidents, it is very desirable that caution boards should be fixed at dangerous junctions or other places on the roads requiring the drivers of motor-cars to drive slowly and with caution.

In the Peak District.

THE lovely scenery of the Peak district of Derbyshire is only known in the mass to the great body of tourists. It requires a pair of sturdy legs to see its many delightful beauties. For ages past the horse has also been called to the assistance of man, and the modern driver of a licensed vehicle is a very conservative individual. One of our contributors has been spending a few days in and about Buxton, Castleton, Matlock, and other centres of the Peak country. Without exception all the licensed drivers, who regard twenty miles a day as a splendid record for a one-horse landau, seem to have an ill-disguised contempt for the motor-car. True, they have seen a few; but the hills of the district are thought to be natural obstacles to their progress. Motorists wishing to test the hill-climbing capacities of their vehicles, and also anxious to further the education of the public, should spend a week or two in the Buxton neighbourhood. We commend the idea for the week-end trips of northern motorists.

Motor-Cars in India.

UNIVERSAL interest was felt in the recent Continental motor-car race and some of the newspapers of India seem to have become quite excited over the event. The *Bombay Gazette* regretfully acknowledges that the adoption of motor-cars is likely to be a long process in the Dependency. Even the use of bicycles was very slowly adopted and is not yet general in the postal and telegraph service. But it is also pointed out by our contemporary that the Indian high road is not a crowded thoroughfare, and there is ample opportunity for the use of the newer form of vehicle. As soon as our makers have secured a large home market they will find profitable employment in meeting the demands of distant places.

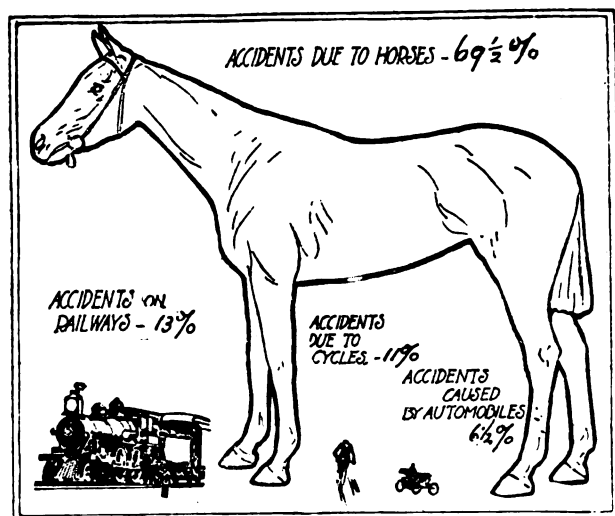
THE GENERAL AUTOMOBILE AGENCY, D. Farman, Man., Garage open day and night, all cars in stock, 100-104, Long Acre, W.C.

A Converted Clergyman.

NOT only the wealthy are taking to automobilism, but those of less extended pockets are also regarding what has been called the new locomotion with favour. There is a clergyman in a rural district who, from an advertisement, we learn, "would be glad to hear of a serviceable motor-car, to be given away or sold cheaply, by an owner giving it up in favour of a new one." This is a very tempting offer to any owner of a car anxious to dispose of a troublesome vehicle and to assist the ministrations of a poor parson. Some folks use public libraries as receptacles for the worthless books they have done with. This advertisement of the poor clergyman suggests an abiding place for worn-out cars.

Accidents in France.

ACCORDING to the *Velo*, 661 accidents were caused by horses during the month of May in France. Of these 58 were fatal, 603 resulting in injuries only. Railways were responsible for 101 accidents, 14 of which resulted in death and 87 in injuries. The cycle claimed 111 victims, of whom 9 were killed and 102 injured. Automobiles accounted for 5 deaths and



59 injuries, a total of 64. Of the total fatalities the horse was responsible for 67.44 per cent., the railway 16.28, the cycle 10.71, and the automobile 5.81. Of injuries 70.91 per cent. were due to horses, 10.20 to railways, 11.98 to cycles, and 6.91 to automobiles.

Strangling an Industry.

THE folly of timid and reactionary legislation is well brought out by the alleged reasons for delay in adopting automobile transit for His Majesty's mails, namely, that competition with horse-drawn coaches is incompatible with a strict observance of the law. We can well believe this, having followed the midnight mail from Leatherhead to Guildford on one occasion, with a somewhat lame car, which, at a speed not below the legal limit, had little difficulty in keeping behind the well-horsed and furiously-driven coach, whose half-dozen big lamps provided cheerful company on what would otherwise have been a rather tedious and solitary drive. But this same coach has been, as may be remembered, prolific in providing accident paragraphs for the local papers, three having occurred within as many weeks at one time, a year or so back, and the fact of the public being deprived of the increased safety and celerity, and the Department of the economy that would attend motor transport, by the action of an admittedly provisional and experimental law, *donne furieusement a penser*.

Motor-Cars to the Rescue.

DURING the recent heat wave in New York the numerous cases of heat prostration proved too much for the horse-drawn ambulance service of the various hospitals, and outside assistance had to be called in. The *New York World* placed a number of its delivery motor-cars at the disposition of the Hudson Street Hospital. These vehicles were fitted up in regular hospital ambulance style, with stretcher, and one of them is reported to have brought in thirty-five patients in a single day. The vehicles were operated by the regular drivers, who were accompanied by officials from the hospital. The Roosevelt Hospital on July 2nd called on the Locomobile Company for assistance, and the company sent a four-seated vehicle which brought in thirty-seven patients that day, being kept busy until eleven o'clock at night. The next day two cars were furnished, which are said to have done practically the entire work of the hospital, as the horses were completely exhausted by the heat. The unreliability of the horse when most wanted—in hot weather—is one of the strongest and most humane arguments in favour of motor traction. Hundreds of horses were overpowered by heat daily in New York during the period referred to.

A Beginning.

THE London County Council have adopted a recommendation of the Fire Brigade Committee with regard to the expenditure of £400 on the construction of a motor fire-engine, the parts of which are to be purchased and assembled in the brigade workshops. They are to be congratulated on a serious, if somewhat tardy attempt to avail themselves of the advantages of mechanical propulsion, but further details of the course they have proposed will be looked for with interest. The automobile fire-engine is hardly a machine to be put together from purchased parts like a bicycle, and if a thoroughly satisfactory one has not yet appeared—and some, nevertheless, have proved reasonably efficient and satisfactory—the construction of one for the sum proposed will be a remarkably successful achievement. The proposal, however, must be cordially welcomed as a sign of progress, which, if followed up under the auspices of experts in automobilism as well as in fire-brigade work should have excellent results.

Municipal Motor-Cars.

AT a meeting of the Electricity Committee of the Manchester Corporation last week, it was resolved to purchase two steam motor-cars for the use of outdoor officials in visiting sub-stations and otherwise performing their duties. Last year £200 was expended on cab fares for the performance of these duties, and in the previous year there was an expenditure of £300 under the same head. It is believed that the substitution of motor-cars owned by the Department will effect a considerable saving as compared with these figures.

Motor-Cars and Election Addresses.

AGITATION among the District and County Councils against motor-cars, and attempted disturbance in Parliament, has led to the subject of automobilism appearing in the addresses of candidates to such bodies. On many occasions candidates have motored to victory at the polls, and Mr. Henry Morgan, a member of the Willesden District Council, who contested an election for the Middlesex County Council last week, mentioned in his address that "any question arising at the council in reference to motor-cars and their regulations will be carefully watched by me, to ensure that this necessary means of locomotion is not strangled by repressive restrictions." This bold declaration is all the more noteworthy as Mr. Morgan is not the owner of a motor-car; but he evidently recognises the advantages of automobiles lessening the wear and tear of the roads as compared with horse-drawn traffic. The reference to the matter may also be regarded as a tribute to the motorists in

Willesden, a district where their number is certainly growing. We shall be pleased to hear of similar references in the addresses of other candidates for local honours.

**Fine Passengers
as Well as
Drivers.**

AN American magistrate had made a suggestion which would form the groundwork for some useful innovations by some of our bucolic councillors. Not only has he been dealing out heavy fines to the actual drivers of automobiles, but he has urged the police to arrest all passengers in vehicles that they consider are going along too rapidly for legal comprehension. Now, if some of our County Councils—perhaps that of Berkshire might initiate the plan—would consider this aspect of the matter, they might find a better source of revenue than would be found in numbering cars. Especially would this be the case if heavy fines were imposed. We would suggest that the fines might be ear-marked for some special purpose, say the county asylums to begin with.

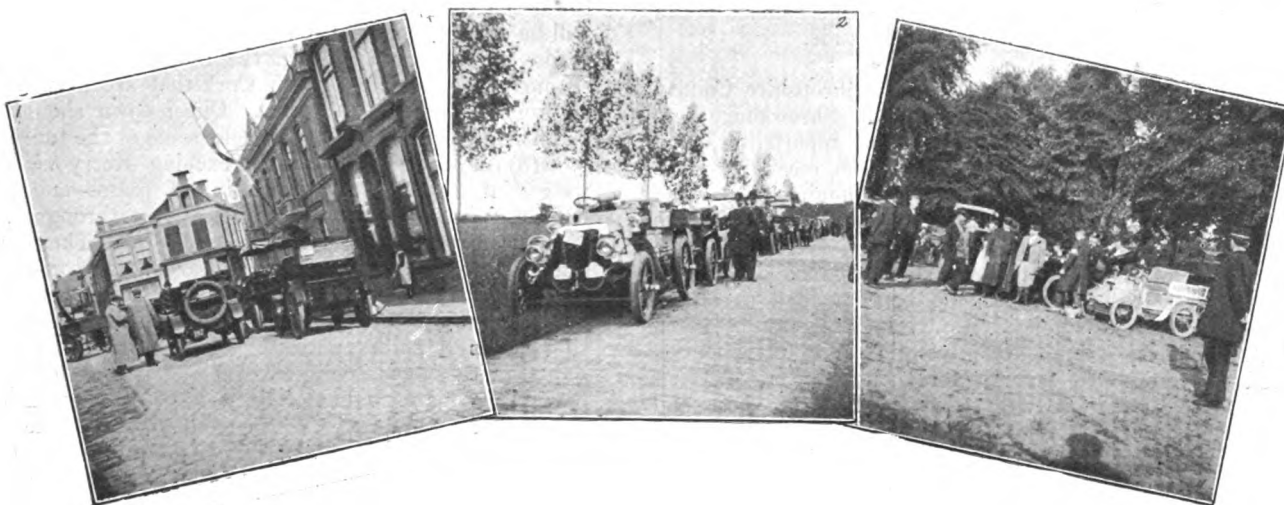
**Only One Exhibition
Wanted.**

VERY assiduous are some of our contemporaries connected with cycling in their efforts to discourage those motor-car firms which have hitherto shown at the Automobile Club's Exhibition at the Agricultural Hall. During recent years the decadence of the cycle shows has been so marked that the promoters have been very anxious to secure automobiles to attract the general public. We have seen it stated that the

relation to each other. Experts are needed in various capacities. Many of them can find profitable employment as *mecaniciens* of the private carriages of the wealthy or of the delivery vans that are beginning to multiply in our larger cities. In addition to these opportunities trained men are wanted to fill more responsible positions in repairing establishments and *garages*. In providing material for this demand manufacturers will plainly be consulting their own interests. They should have continually under instruction a number of recruits who, on the completion of their course, will be qualified to safeguard their reputation and enable them to render to the owner of the car that full satisfaction which can only come from a good vehicle well operated and well cared for.

**Another Long Run
of an Electrical
Vehicle.**

JUST as we go to press we learn that one of the new types of electric vehicles being introduced by Electric Propulsion, Limited, has had a remarkable run, which was undertaken by experts, in order to prove the actual merits of the Still system for long-distance runs. On Monday last one of these new types of sporting dog-carts started on a trial trip from Messrs. Morgan and Co.'s carriage-building depot in Long Acre, W.C., *en route* to Bath; the roads being shockingly bad after the recent heavy rains, and also having very steep grades to contend with, the car did not reach Bath as intended, but succeeded in reaching Calne (Wilts), a distance of over 90 miles from the London depot, on one charge of the battery. Considering that this



AT ASSEN.

THE CARS DRAWN UP NEAR LEEUWARDEN.

IN THE ENSCHEDE PARK.

THE AUTOMOBILE TOUR OF HOLLAND.

[Cliche de]

[La France Automobile.]

position of affairs in the motor-car trade is similar to what it was in the cycle industry when the National Show came into existence. There is no foundation for such an assertion, for the whole of the automobile trade is unanimous in declaring its view in favour of only one exhibition—and that the exhibition which is held under the auspices of the recognised authority in this country, viz., the Automobile Club. All attempts on the part of our friends on the cycle press to create a sectional feeling in the matter are likely to end in failure, and the sooner they desist from the present policy the better will it be for their credit as prophets and common-sense business men.

**Trained
Mechanicians
Wanted.**

ONE of the most obvious duties devolving upon motor-car builders is the training of men competent to operate and repair the cars they turn out. The success of an automobile in actual service depends in a large measure upon the manner in which it is operated and cared for. This presupposes a familiarity with the individual vehicle which can only be acquired under the supervision of an experienced foreman, for it involves a knowledge of the different parts of the car and their

vehicle complete, together with two passengers, only weighed 31½ cwt., it is a record which the company may well be proud of. Mr. Basil Joy acted as observer. We understand the company will shortly build another type of vehicle estimated to run from 140 to 150 miles on one charge of the battery, and when finished other makers of electric vehicles are to be invited to join in a friendly run of 120 to 150 miles on one charge of the accumulators. We are promised further particulars of the "Still" carriage motor and the "Ideal" storage battery, which combination is apparently well fitted to carry out long-distance runs by the aid of self-propelled electric vehicles for both pleasure and business purposes.

**The Motor-Car in
Commerce.**

THE latest firm to enlist the services of the motor-car is Messrs. Cadbury, of cocoa fame, they having obtained a serviceable car to facilitate the distribution of their goods. The holding capacity of the car is very large, and by utilising it Messrs. Cadbury are able to get goods delivered at places within comparatively short radius from Birmingham which they found it difficult to reach prior to the advent of the car. For instance, in forwarding goods to West Bromwich and other

places in the Black country by rail the boxes had to be sent by the Midland line, and then a change over had to be made at Birmingham and the remainder of the journey made over the Great Western line. This naturally involved delay and it sometimes happened that goods sent out on Monday did not get delivered until Wednesday. Now the motor-car is loaded up and in a few hours the Black country is reached and deliveries are being effected. In the very hot weather, when the chocolate or cocoa stands a chance of being adversely affected, in appearance at any rate, this quick delivery is invaluable. The firm speak very highly of their car, and, so far, are more than satisfied with its working and the results achieved with its aid.

A Place for Everything.

A FRENCH contemporary devotes some space to the consideration of how best to dispose of tools in a motor-car. Those most frequently in use — wrenches, spanners, screw-drivers, and such like — it is suggested, should be placed in a pocket or small drawer attached to some accessible part which will not necessitate the derangement of passengers when these articles are required. Other tools less frequently employed should be kept together in a covered box under the driver's seat. With these also should be kept such spare parts as are carried, each in a separate wrapper, and labelled. Oil and grease must be placed by themselves, and well away from tools or parts, for their receptacles are prone to leak, whatever may be said to the contrary. The advice is good, but, bearing in mind the various builds of cars, and ways of disposing of their mechanism, it can only be followed with a certain amount of latitude.

County Councils and Motor-cars.

A MEETING of the Shropshire County Council was held at Shrewsbury last week, when it was reported that a communication had been received by the Roads and Bridges Committee from the County Council Association in reference to the speed of motor-cars and the licensing of drivers. The Committee were of opinion that there should be no fixed limit as to speed, but that the drivers should be compelled to obtain certificates as to their capability. Sir T. F. Boughey proposed that there should be a limit of twelve miles an hour, which he considered was quite fast enough for such vehicles, if other traffic was to be carried on with safety. Major Patchett and Major Heber Percy were opposed to the fixing of any limit. Mr. H. H. France-Hayhurst thought the Committee should define what was "a safe speed," and recommended that the report be referred back to the Committee with that object. This was supported by Mr. Chubb, but was eventually withdrawn. Sir T. F. Boughey's amendment was negatived, and the report was adopted.

Not Wanted in Egypt.

EGYPTIAN newspapers are reported to have declared war on the automobile. They urge the Government to take severe and rapid measures against motor-cars in Egypt, citing as a warning the threatened increase in their numbers, which will "surely bring about a fall in the prices of railway stocks." It is asserted that a day may come when all communications will be made by means of the automobile, and then the investments in railway stocks will be lost. It does not seem to have dawned upon the Egyptian mind that these days are not the days of the Pharaohs, nor is the traffic problem of the present to be solved by too close an adherence to the ways of an older day.

A MOTOR-CAR in which the Duke de Morny, a friend, and two engineers were driving at Nevilly (France), ran off the road and plunged into the Seine, owing to the steering gear going wrong. All four occupants jumped out in time to save themselves from falling into the river, and escaped with a few bruises.

THE IRISH AUTOMOBILE TOUR.

DESCRIPTIVE NOTES ON THE ROUTE.

THE official programme of the tour of the Automobile Club in Ireland has now been thoroughly revised, and in its amended form sketches out a most comprehensive trip through the loveliest districts of Ireland. We append a summary of the itinerary:—

(1)	Aug. 8th	Dublin to Waterford, <i>via</i> Carlow	99½ miles.
(2)	" 9th	Waterford to Cork...	81 miles.
(3)	" 10th	Cork to Killarney ...	95½ miles.
(4)	" 11th	Killarney.	
(5)	" 12th	Killarney to Waterville ...	59½ miles.
(6)	" 13th	Waterville to Killarney ...	40 miles.
(7)	" 14th	Killarney to Limerick ...	87½ miles.
(8)	" 15th	Limerick to Kilkee ...	55½ miles.
(9)	" 16th	Kilkee to Galway ...	90 miles.
(10)	" 17th	Galway to Recess ...	47½ miles.
(11)	" 18th	Recess.	
(12)	" 19th	Recess to Kylemore, Cong, and Recess ...	64½ miles.
(13)	" 20th	Recess to Leenane and Ballina ...	67½ miles.
(14)	" 21st	Ballina to Sligo ...	37 miles.
(15)	" 22nd	Sligo to Enniskillen ...	74½ miles.
(16)	" 23rd	Enniskillen to Dublin ...	104½ miles.

THE ROUTE.

(1) Having cleared Dublin a good main road is soon struck, and this continues to be mostly favourable, improving still more through Carlow, where beautiful scenery will be encountered. The surface deteriorates towards Waterford.

(2) From Waterford the route is not good, but as it leads towards a very beautiful district—that of the Irish Rhine—there will be ample compensation for the rather poor quality of the roads. Generally speaking, the roads through co. Waterford are not up to standard, and in Cork they are even worse. The environs of Cork are beautiful. Queenstown should be visited, and a trip to Blarney might benefit some of the tourists.

(3) Beyond Cork, and approaching Kerry *via* Glengariffe, we get into that district of mountain passes and good roads. Keimaneigh is the first notable defile gone through, and it may be taken as a sample of the Kerry passes. They are winding routes of excessive narrowness at parts. Motorists unused to such highways should exercise great caution at first. The experienced driver, however, finds a fascination in negotiating the seemingly endless series of sharp corners. Vistas are presented with cinematographic quickness, and lovely they are beyond compare. Glengariffe is a place to wax enthusiastic about, and undoubtedly is the gem of the whole tour. It is ideally situated in a land-locked bay, where rich vegetation covers the hills down to the water line, lapped by the warm current, which has the geniality of the Gulf Stream to heighten its temperature. A stiff but marvellously interesting run takes the motorist from Glengariffe towards Killarney. After miles of climbing a long descent follows. Nearing Killarney another long and winding descent commanding superb panoramas of the lakes is encountered. Great caution must be taken on this tricky road and a sharp look-out for muddy patches, coaches, tourists, and other dangers. Round many of the sharp corners unexpectedly brusque pitches occur, which should be taken very carefully. The experience of the long downward glide through this sylvan little road is one to be remembered. It gives absolutely the best views of the Killarney lakes.

(4) August 11th will be an off day, and motorists would do well to occupy the time by boating excursions on the lakes.

(5) On the 12th, the trip to Waterville by Kenmare and Derrynane will give further acquaintance with the Kerry passes and many records in the way of magnificent scenery. This day's run will rank as one of the best, for it will take the tourist from the relaxing, languid atmosphere of the inland valley, by quick changes up amongst the hills, and then suddenly out to the iron-bound coast where the great Atlantic hammers unceasingly. Parknasilla is encountered; and it is in effect another Glengariffe mounted on the side of a great fiord. Following the north shore of this inlet we are brought in time to the open sea and treated to many splendid marine views. At

Cahirdaniel a detour down a narrow and very tricky by-road is taken to visit Derrynane, the ancestral home of Dan O'Connell, and also to view one of the loveliest little bays in all Kerry. The day's run finishes by a climb over Coomakista Pass—stiff, but magnificent—and a good run down to Waterville.

(6) Waterville to Killarney has many splendid scenes to repay the trip, but is scarcely the equal of the previous day's run. It winds up gloriously, however, by giving an approach to Killarney from a different point, and showing the mountains thereabout to the utmost advantage.

(7) Through bog-lands the next day's journey leads, past Listowel, and then in sight of the great Shannon estuary at a point where it is several miles wide, and incomparably the grandest river in the United Kingdom. A delightful run by Foynes and Glin leads to Limerick, over a road which deteriorates towards the end.

(8) Limerick to Kilkee is a journey containing some bad roads till County Clare is entered, when they improve. Fine scenery will be encountered at many points.

(9) The next day's trip to Galway will be of a most interesting character, too, affording many glimpses of the wildest parts of the West. At O'Brien's Tower a stop should be made, and the stupendous cliffs of Moher visited. They have no equal in these Isles.

(10) Leaving Galway, a rough road will be encountered as the approach to Connemara is made. But nearing Reccess the surface improves, and the motorist will find himself in quite a level country of good roads. After the corkscrews of Kerry the straight-away stretches of Connemara will no doubt be welcomed by the steering gear. All the party will not put up at Reccess, which is only an hotel and a railway station. Some will be billeted at various points a few miles off, where excellent hotels and charming scenery will make each section of the party positive that it is the luckiest.

(11) The following day will be one of rest, there being no official programme. The time can be availed of to advantage in scores of ways.

(12) The run to Kylemore Castle and thence by Salruck, Leenane, and Cong to Reccess takes the tourist through the very best of the Connemara scenery. Kylemore Castle is a magnificent pile set amongst the most romantic surroundings. The great fiord of Killarney harbour will be another of the remarkable sights seen on this red letter day.

(13) This day's run, though interesting in itself, will suffer by comparison with the previous day's trip both in respect of scenery and road surface.

(14) Some pretty scenery encountered on this day's run. Sligo is a beautifully-situated town, and leads to a charming district around Lough Gill. An afternoon run will probably be taken in that direction.

(15) The latter portion of this day's run contains the best of the scenery. From Belleek to Enniskillen many glorious views will be noted. The trip along the shores of Lough Erne rivals anything that even Kerry has shown. The road is narrow, and nearing Enniskillen is of poor surface.

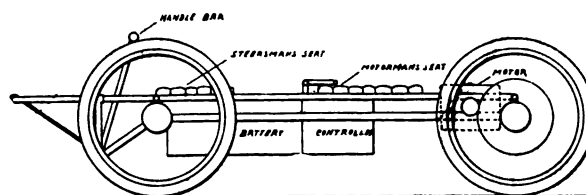
(16) A long run through medium scenery concludes the tour. Nothing very noteworthy will be seen, though for the most part the road winds through a well wooded rolling country, affording many pretty landscapes.

MESSRS. HUTTON AND CO., of Warminster, are agents for Carless, Capel, and Co.'s petrol, oils, and greases, supplies of which are always in stock.

At the last meeting of the Montgomery Town Council, Alderman Fairles-Humphreys said he had received a letter from Mr. Pryce Trow, of Swansea, offering a motor-car, to carry fourteen persons, for sale. The original price was £700, and he offered it to the Council for £350. Councillor Davies thought the time had come when they should have some better means of communication with the railway station than they had at present, but the Council decided not to entertain the offer.

A NOVEL ELECTRIC RACING VEHICLE.

FOR the track races held by the Automobile Club of New England at Brookline, Mass., recently, the Riker Motor-Vehicle Company produced a special electric racing vehicle, of which a diagram, taken from the *Horseless Age*, is given herewith. The car proved to be the sensation of the day, as its light weight and exceedingly low centre of gravity gave it a great advantage in racing on so short a track and on such flat turns. It consists of two tubular axles connected by a pair of tubular rods on each side. These rods are placed directly over one another about 4 inches apart, the pairs of rods being about 20 inches apart. The lower of these rods are on the same level as the axle, and the whole mechanism of the vehicle is hung between and below the upper rods. As the wheels are 32 inches in diameter, they are the only parts of the vehicle, except the steering handle, that are over 20 inches from the ground. At the front end of the frame is hung the box containing the battery, on top of which the steersman sits. The upper set of tubes are carried



forward and curved so that they meet about three feet in front of the front axle. Tubes drop down from these and form a support for the steersman's feet and for the steering post, which projects upward between his legs and is operated by a bicycle handle bar. Immediately behind the battery box is hung the controller, the handle for operating which is at the top, just behind the steersman's seat. The second man is seated at the rear and operates the controller handle, which is directly in front of him. At the rear of the frame are hung the two encased motors, which carry on the outer end of their motor-shafts spur gear pinions, which drive spur gears secured to the hubs of the rear wheels. The vehicle as illustrated is not entirely completed, as it is intended to place a sheet metal, plough-shaped wind shield on the projecting part of the upper tubes, in order to reduce the wind resistance as much as possible.

THE new Mercedes vehicles of Mr. W. K. Vanderbilt and Mr. Clarence Mackay, two well-known American motorists, have made their appearance at Newport, where they are attracting much attention.

ARRANGEMENTS are in hand for the starting of a service of motor-cars between El Aghnat and Blide, Algeria, for the conveyance of both passengers and goods. The distance between the two places is about 200 miles, and will, it is expected, be covered in two days.

THE prize exhibit at the Hall of Education, New York, of shop work and constructive work in paper from all grades of the public schools of New York was a miniature motor bus run by a dry battery which is perfect in every detail. Arthur Jensen, the designer and builder, is a fifteen-year-old boy, who passed through the various stages of the constructive period from the folding of paper to the drawing of his own designs and their execution in wood. In the fifth year the pupils are urged to do home work, and the boy commenced by solving for himself the fascinating problem of the automobile.

To get miles from anywhere and discover that the water in one's steam carriage is exhausted is excessively disagreeable. The Kitts low water alarm for steam carriages, made by the Kitts Manufacturing Company, of Oswego, N.Y., has been introduced to prevent this happening. This device is so constructed that when the water gets low, the alarm whistle gives a short toot, stops, then toots again. This is done before the danger point is reached, and calls the attention of the operator in ample time to prevent damage to the boiler.

THE BRITISH MEDICAL ASSOCIATION AT CHELTENHAM.



(From our own Correspondent.)

ALL those automobilists who participated in the 1,000 Mile Trial assuredly retain the pleasantest of recollections of Cheltenham, for it is a town that one does not readily forget, if only by reason of its shady avenues and the cleanliness of its streets. To me the Gloucestershire town closely resembles in appearance a French *ville de province*, and one can see there any fine evening in summer the terraces of some of the hotels in the Promenade crowded with diners just as one sees them the other side of the Channel. But if Cheltenham is French in appearance, it is certainly not in customs, for up to the present the horseless carriage has not thrived here. A few—a very few—motor-carriages are in use in the town, and despite the efforts of Messrs. Morgan, Norton, and other enthusiasts the great majority of the residents have no sympathy with the new sport. But the visit of the members of the British Medical Association to the town is now giving Cheltenham resi-

finished example of the company's voiturette, too well known to require description. Mr. E. Instone has also another and larger car within the exhibition grounds which is running almost continuously on trial trips. The Hozier Engineering Company, Limited, show a couple of smartly finished Argyll voiturettes fitted with M.M.C. water-cooled motors. One of these two cars is running about the grounds daily, and creates a very favourable impression. From Mr. Warren Smith I learn that since August 1st the price of these small cars has been augmented on account of the business having been taken over by a large American syndicate. Messrs. H. G. Norton and Co., one of the leading cycle firms of Cheltenham, make a great display of bicycles, and in addition show, and run a neat little New Orleans voiturette. Mr. A. E. Cohen is in charge of the Weston Motors' exhibit, and he is showing three cars, one of which is doing good work in demonstrating to the public the capabilities of a good steam carriage. Certainly this carriage excites as much interest as any in the show and good business is being done. Weston's motors will from now be represented in Cheltenham by Mr. Morgan. Another firm which is busily engaged is the Singer Company, and Mr. Duret is continually besieged with



FIG. 1.—THE YORKSHIRE STEAM MOTOR WAGON. (See opposite page.)

dents an opportunity of seeing a variety of motor-vehicles, for this year an automobile section has been added to the Association's ordinary exhibition, in order to keep medical men *au courant* with the latest developments of the industry. If this new section is not particularly large, it is nevertheless not without interest, either to the doctors or to the residents of Cheltenham, and the introduction of automobiles into the carriage class of the exhibition will assuredly do good to the industry.

The exhibits are, with one exception, shown in a marquee within the grounds of the well-known Winter Garden, and in close proximity to the hall itself. They are capitally arranged, and on the opening evening looked very well, lighted up with Chinese lanterns. Upon entering the marquee one finds directly in front of the entrance a two-seated Panhard-Clément car, exhibited by Stirling's Motor Carriages, Limited, the representative of which company is usually busily engaged in affording trial trips to the crowds anxious to try this smart little car. Directly behind this stand is found that of the Motor Manufacturing Company, Limited, upon which is to be seen a beautifully

requests for demonstrations of both motor-bicycle and tricycle. In addition to these the company also show a tricycle provided with a basketwork seat for a passenger, this machine weighing 160lbs.

Messrs. Wastnag and Co., Limited, 231, Maida Vale, London, W., also show a motor-bicycle, their machine being of the Minerva type. The motor develops $1\frac{1}{2}$ h.p. The list of exhibitors of motor-bicycles is completed with the name of Messrs. Bayliss, Thomas, and Co., Limited, who show the Excelsior, a machine carrying its motor in a similar position to the Minerva. These bicycles are being demonstrated in the show grounds, and apparently run with great regularity, the *mise en marche* being particularly easy. At the Bristol Motor Company's stand one finds Mr. Appleton, ever ready to explain and demonstrate the various cars shown by the company, these including a handsome 9 h.p. Daimler *tonneau*, three De Dion voiturettes, and a Progress phaeton of improved design. The latter is a particularly attractive little car, the carriage work by Messrs. Mulliner being irreproachable.

In addition to the above exhibits, Mr. Morgan, of Clarence Street, Cheltenham, shows a Star car in the main hall; but to really appreciate the position which Mr. Morgan holds in automobilism in the West of England one should visit his garage, in the workshops of which one can generally see a variety of cars under treatment. Fitted with excellent plant, these workshops admit of any class of repair being speedily executed, and, as official repairer to the De Dion and Bouton Syndicate and the Motor Manufacturing Company, Mr. Morgan is well known among local motor men.

THE YORKSHIRE STEAM MOTOR-WAGON.

WE are able this week to publish illustrations and particulars of a new heavy steam motor-wagon which has lately been put on the market by the Yorkshire Steam Motor Company, of Ingham Street, Hunslet Road, Leeds, for loads up to four tons. There are several entirely novel features embodied in the vehicle, which gives it a somewhat different appearance to most of the other makes on the market. The boiler (Fig. 2) is on the locomotive principle, but with two short barrels, and, it will be noticed, is fixed across the front end of the frame. The fire tube connects the firebox with a combustion chamber at each end, and the return tubes carry the gases to another central chamber connected with the chimney. There is no exhaust steam blast pipe in the chimney. The steam, after it leaves the low-pressure cylinder, passes through separators, the water being drained away; the dry steam then enters the two chambers formed in the doors at each end of the boiler, where it is thoroughly superheated, and escapes through a series of small jets into each return tube. The effect of this is, it is claimed, to obtain an absolute silent and invisible exhaust, and an equal distribution of flame or gases over the heating surface. The boiler is a rapid "steamer," and very economical. The wagon can be taken up steep hills of any length with a full load and maintain its pressure and water level with the engine running

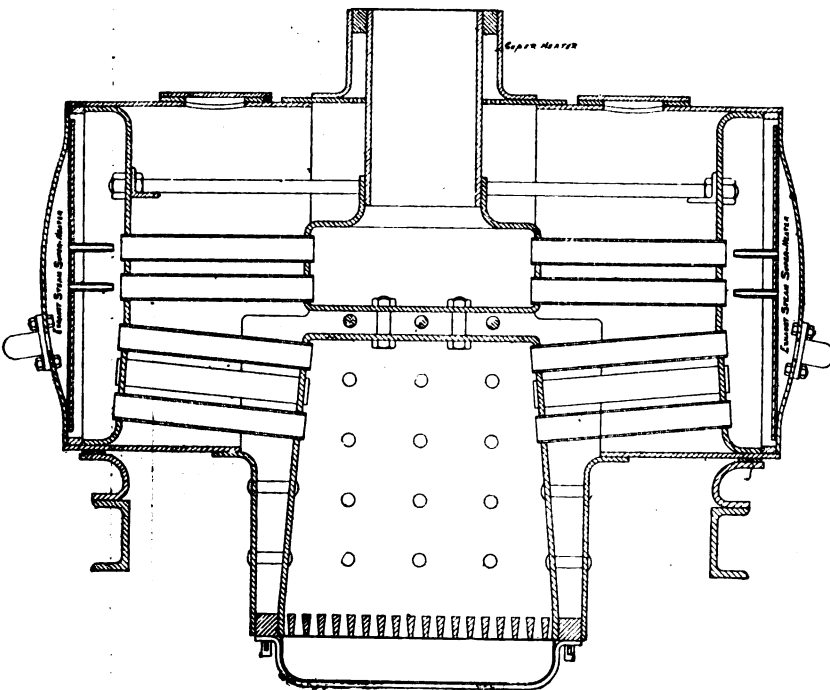


Fig. 2.—SECTION OF BOILER.

at its maximum speed, the fuel used being common gas coke. Another special feature is the arrangement of the gearing, the wagon being entirely driven by steel spur gear-wheels. The crank shaft is carried in bearings bolted on each side of the frame; to each of these bearings a strong steel bracket is hinged which carries the second motion shaft and axle bearings (Fig. 3). These brackets are free to swing on the hinges at

one end, the other end sliding on strong guides, and connected to the wagon frame by ordinary laminated springs, so that the vehicle can rise and fall without altering the centres of the shafts. There are only two bearings on each shaft with gearing in between them. The second motion shaft and axle are carried in swivel bearings, so that, no matter how unequally the wagon is loaded or how uneven the road, there is no fear of the shafts binding—in fact, during a trial trip recently with a load consisting of two heavy castings the load shifted to one side so that the spring at that side was compressed to its maximum limit, whilst the other was fully open. Under these adverse conditions a run of several miles was made at fast speed without a single bearing

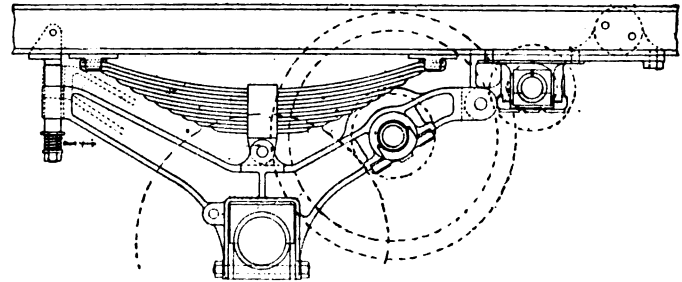


FIG. 3.—DIAGRAM SHOWING ARRANGEMENT OF REAR SHAFT AND AXLE.

heating. Two speeds corresponding to $5\frac{1}{2}$ and $2\frac{1}{2}$ miles per hour are provided, and an ordinary jack-in-the-box differential gear is arranged on the axle.

The cylinders are fixed on the outside of the frame, the high pressure on one side and the low pressure on the other, making all the motion easily accessible; in fact, an important feature of the vehicle is that all the gearing and steam joints can be got at with the wagon loaded. The crossheads run in cylindrical guides, fitted with dust-proof covers; the cranks and connecting-rods are also protected in dust-proof metal casings. The engine is reversed by an improved single eccentric gear operated by a lever on the driver's platform.

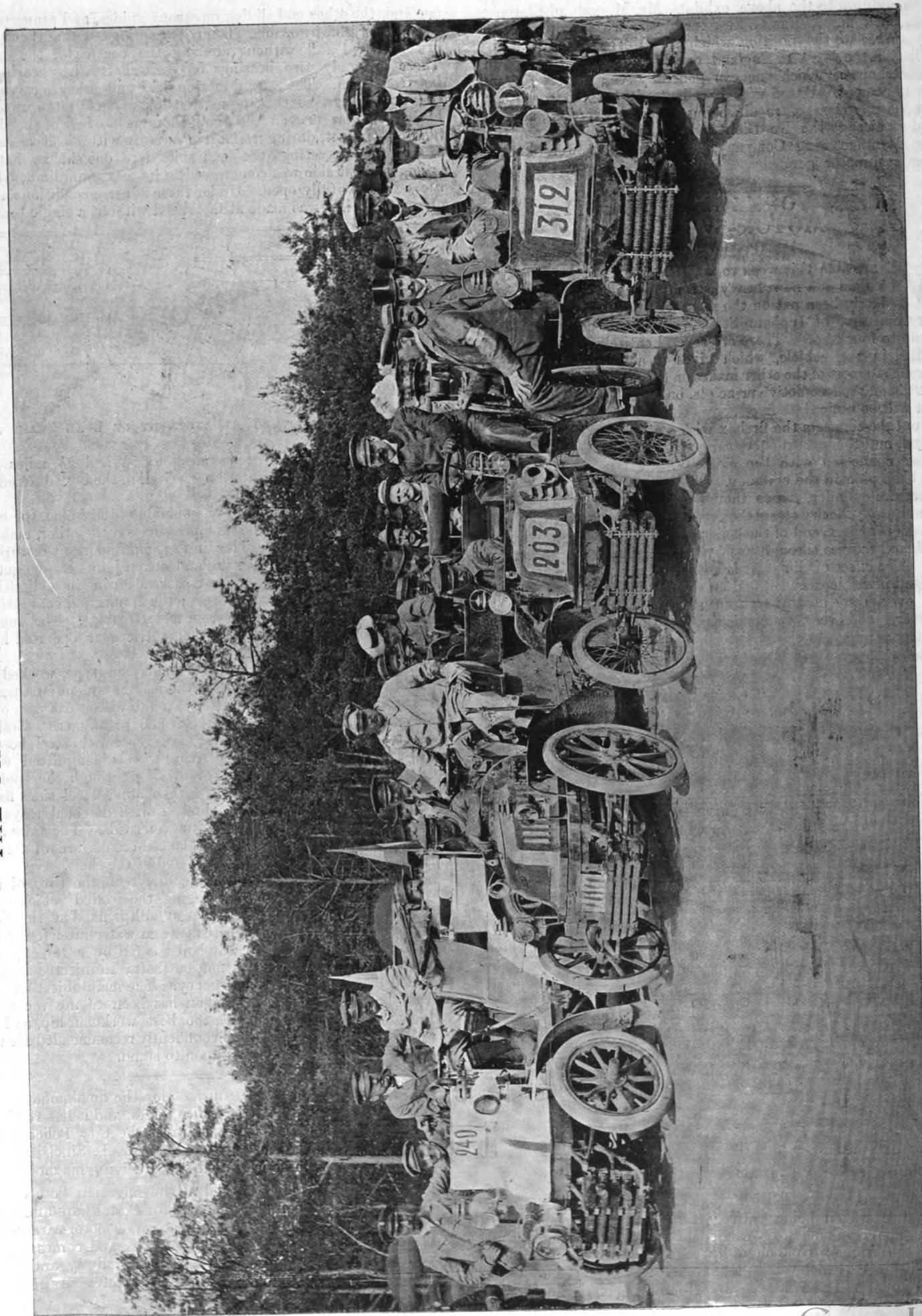
The steering is of an improved Ackerman type, worked by a screw and lever; the front axle carries the wagon on a transverse spring fixed in such a manner that the wheels can pass over obstructions without subjecting the frame to any cross strains. The road wheels are of the gun-carriage type, with steel bosses, oak spokes, and ash felloes, the driving wheels being fitted with drag rods to relieve the strain of driving through the spokes. The frame of the vehicle is built with channel steel sides fixed to cast steel cross girders, and braced with diagonal stays to resist cross strains in travelling on uneven roads. The axles and shafts are of mild steel, while the balanced cranks are of forged mild steel, shrunk and keyed on the end of the shaft.

A powerful screw brake acting direct on the tires of the driving wheels is capable of bringing the loaded vehicle to a stand on the steepest incline. A large tank is fixed at the rear of the wagon and provided with a steam water lifter for filling from any stream or spring. The boiler is fed by a force pump worked direct from the second motion shaft; an injector is also provided for use in case of emergency. The main object of the makers in constructing this wagon has been to use the most suitable materials combined with the best workmanship, and so turn out a vehicle which can be confidently recommended for the hard wear that it will be called upon to stand.

AN agitation is being set on foot for the amalgamation of the Metropolitan and the City police forces, and it has received considerable impetus from the action of the City Police Commissioner in connection with the case of Mr. L. Sinclair, M.P., who was recently summoned for furiously driving his motor-car.

DR. SCHATZEL, a high official of the Bavarian Post Office, has just published a pamphlet on "Motor Postal Cars and their Use." He considers the possible utilisation of motor-cars in the postal service from different points of view, and comes to the conclusion that "the present gap between railway and horse locomotion will be completely filled by motor-cars on the highways."

THE PARIS-BERLIN RACE.



THE FOUR GEORGES RICHARD PETROL CARS WHICH SUCCESSFULLY MADE THE JOURNEY FROM PARIS TO BERLIN IN THE TOURIST SECTION.

CONTINENTAL NOTES.

BY "AUTOMAN."

MILITARY authorities in France are recognising more and more the important *role* which the automobile will play in modern warfare, and the great advantage that will be gained by the army operating in Europe best equipped in this direction. In the French manoeuvres of this year motor-cars will be put to very severe trials, and practically the whole of the staff will be provided with them. It is understood that General Brugère, who would in case of war be the general commanding the troops, will be provided with a Serpollet steam-car whilst directing the operations of this year's manoeuvres.

THE A.C.B. is about to issue route maps of Belgium for the use of automobilists, and the Committee are asking all the members to send in as much useful information as possible, in order that these maps may be very complete and serviceable to motorists.

No decision has yet been come to by the automobile authorities in France as to whether the autodrome is to supply the place of road racing, or whether an attempt is to be made to work on the politicians who have done such an injury to the trade by suppressing road racing. In the light of to-day it seems a great pity that the A.C.F. did not bring forward the weight-limit rule of a year ago, as it would no doubt have had the effect of mitigating the dangers, and might have prevented the accident at Reims.

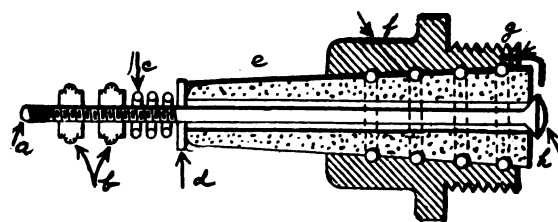
THE A.C.F. are organising a mile race at Deauville, where they have succeeded in securing for the afternoon of September 1st the splendid promenade along the sea. It is a little over a mile in length and nearly a straight line, there being only one slight bend towards the middle. Deauville is within four hours railway journey of Paris, and close to Trouville. It is proposed that all the competing cars must make the journey from Paris to Deauville on the day before the race in less than ten hours, that is to say, at an average speed of about twelve miles an hour. There will be eight classes, namely—A, motor-bicycles; B, motor-cycles; C, voiturettes; D, light carriages; E, heavy carriages; F, steam carriages; G, electric carriages; H, carriages that were classed within the first five in Paris-Bordeaux and Paris-Berlin. These will include the well-known names of Fournier, Maurice Farman, Voigt, Pinson, Giraud, Louis Renault, Teste, Rivierre, and many others. Three special prizes will be given; one the Deauville cup, one the *Auto Velo's* cup, and one the Alcohol cup. There will not be a flying start, and each car must be started by its occupants without being pushed.

THE hill-climbing trials at Spa produced the following results:—Class 1, motor-bicycles—De Kidder, on a Delin, climbed the hill in 8 min. 55 1-5 sec. Class 2, motor-tricycles—Osmont, on a De Dion-Bouton, 5 min. 21 2-5 sec. Class 3—Orban, on a Cudell, 12 min. 57 3-5 sec. Class 4—Roland, on a Gobron-Brillié, 7 min. 47 1-5 sec. Class 5—Baron Joseph de Crawhez, 7 min. 37 4-5 sec. In the handicap between the winners of the various classes the Baron Joseph de Crawhez came in first, fifty yards before Osmont.

M. SANTOS-DUMONT was out in his navigable balloon again on Tuesday last, taking a trip over the Bois de Boulogne in the presence of a large crowd. The motor, however, which is cooled by air, was not working very well, the cylinders unduly heating. As the working was not to the satisfaction of M. Santos-Dumont he did not attempt a journey round the Eiffel Tower, but confined himself to sailing backwards and forwards over the wood, and then gracefully and lightly descending, bringing his balloon to rest at the spot from which he started.

THE BLAKE SPARKING PLUG.

MR. F. C. BLAKE, of Dalling Road, Hammersmith, has lately introduced an improved sparking plug, of which a sectional illustration is given herewith. Its chief features are the methods employed for fixing the porcelain plug, *e*, in the steel body, *f*, and for holding the central conductor in place inside the porcelain. For the former purpose the porcelain plug, *e*, is conical, and is only glazed over its smaller half. Four circular grooves are cut in it, and these correspond with similar grooves in the body, *f*, into which it closely fits. A special fire-proof cement is used to hold the porcelain in place, and as the cement fills the grooves in each of the two parts, a very firm fixing is obtained. The central conductor passes freely through the centre of the porcelain and is provided with a conical head, *h*, which is ground to fit the porcelain, like a gas-tight valve. Its outer end passes through a washer, *d*, and is held in place by a spiral spring, *c*, which presses against the lower milled nut, *b*. For attaching the necessary conducting wire to the screwed portion, *a*, a second nut, *h*, is used. This arrangement enables



the central rod of the plug to expand and contract without causing any leakage between it and the porcelain. An "earthed" platinum point, *g*, is fitted in the usual way.

A HILL-CLIMBING competition between Schottwein and Semmering is being organised by the Austrian Automobile Club for September 15th next. The trial will be open to voiturettes, light cars, heavy cars, motor cycles, and electric vehicles.

NEW regulations for motor-cars have just been issued in the German Province of Brandenburg. The pace is restricted to nine miles an hour in the suburbs, and this pace is never to be exceeded after dark in the country. No racing will be allowed on public roads without special permission of the police.

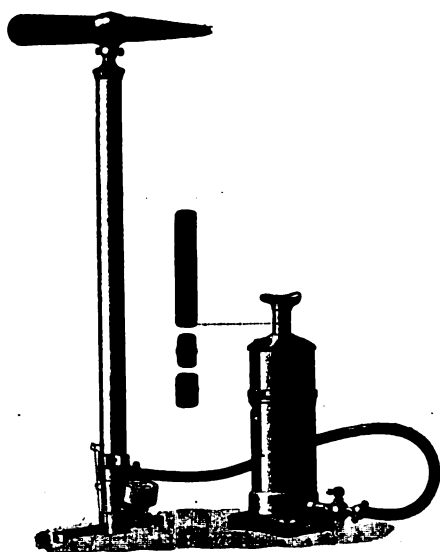
ON Saturday last Mr. John Stirling, of Stirling's Motor Carriages, Limited, of Hamilton and Glasgow, completed a run from John o' Groat's to Land's End. The car used was a Stirling Parisian phaeton, and the net running time worked out at 59½ hours. The amount of petrol consumed on the journey of 900 miles was 28 gallons.

THE German military authorities are making some interesting experiments in the neighbourhood of Berlin with heavy motor-cars. One car in particular shows itself well adapted for field purposes. It attains a speed of five miles an hour when laden with five tons, and nine miles when empty. A considerable number of cars have also been acquired by the authorities for use in the forthcoming Army manoeuvres. One of the vehicles approved of is designed to carry two machine guns, and another is for the accommodation of staff officers.

THE Rev. H. H. Jevons, of Wolverhampton, while on a motor-car tour recently, had a narrow escape. Whilst descending a steep hill at Standish, some four or five miles from Gloucester, the car got beyond his control. In front were several brakes with excursionists from Chalford, and between the motor-car and the brakes a bicycle ridden by Mr. W. H. R. Ford, of Stroud. The motor-car crashed into the bicycle, sending Mr. Ford flying some yards into the ditch. Fortunately, neither Mr. Ford nor the rev. gentleman were any the worse for the adventure, though the bicycle was badly damaged, the car having to be lifted bodily off it.

THE SCLAVERAND COMPRESSED-AIR LIFTING-JACK.

AMONG the many useful devices made by M. Sclaverand, of Paris, and introduced into this country by Mr. A. A. Godin, of 10, Gray's Inn Place, W.C., is a compressed-air lifting-jack, of which an illustration is given herewith. The jack is a neat and compact little article in the form of a double cylinder, one sliding inside the other, with a projection to hold the axle of the wheel. At the foot of the jack is



a two-way tap and a non-return valve, to which an ordinary tire inflator can be attached, and by forcing air into the cylinder the heaviest car can be raised in a few seconds. The jack is made in several sizes, intended to lift cars weighing from one to five tons. As mentioned above, any motor-tire inflator may be used with the jack, but the firm recommend a special one of their own construction to which a pressure-gauge is attached.

THE *Candid Friend*, in its last issue, publishes an interview with Mr. Frank Gardner, of the Gardner-Serpollet Company, in the course of which it is stated that M. Serpollet is now engaged on the construction of a motor-car of 1,000 h.p. We hardly think this correct.

THE Automobile Club Dauphinois has, with the sanction of local authorities, arranged a hill-climbing contest at Laffrey, near Vizille, on the road to La Mure, for the 11th inst. The course measures 6,500 metres (about four miles), with an average gradient of 9.3 per cent.

THE Cycling and Athletic Sports at Wisbech, last week, were the occasion of a good turn-out of motor-cars. In spite of the rain, which fell heavily during the day, sixteen cars put in an appearance, and though there was no event open to them, gave a display of speed and control on the track.

THE Continental Caoutchouc and Guttapercha Co. are manufacturing two kinds of motor tire repair outfits. The small outfit, which is 4 inches by 3 inches by 1 inch, contains a parcel of patches, solution, two rolls of rubber, canvas, and sandpaper. The large outfit, suitable for heavy motor-car tires, is 12 inches long, 2½ wide, and 2¾ deep. It contains, besides the small outfit which we have just described, the following articles:—Two rolls of proofed canvas, eight strong moulded patches, sandpaper, nickel-plated tire lever, one roll of patching sheet, and other essentials.

CORRESPONDENCE.

THE DE DION VOITURETTE.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Would any of your readers kindly inform me if it is a usual occurrence for the De Dion gears on a 3½ h.p. voiturette to keep up a singing noise while travelling? If it is a natural noise, are there any means to allay the same, as it is very disagreeable to outsiders?—Yours truly,

A. D. JACKSON.

THE DANGERS OF STEAM CARS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—As I intend shortly to purchase a steam car, I should be glad if some of your readers would kindly give their experiences as to their danger, for having been told by users of the ordinary petrol-car that they need very great care in order to avert a flare up, I am naturally somewhat anxious as to what may be my fate, should I go in for one, as I should manage it entirely myself.

Might I also ask any who have fitted a back-seat to their cars, to say if it answers satisfactorily? It is a great drawback to these vehicles that the smaller pattern will only seat two, and I understand that next year's pattern will provide three seats, the four-seated car not having proved a success.—Yours faithfully,

A BUSINESS MAN.

THE AUTODROME AND ITS ALTERNATIVE.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Much has been said of late of a motor-car track or autodrome, but one of the difficulties seems to be in the choice of a suitable track. Two miles from Lowestoft, to wit, at Oulton Broad, there are some capital marshes always dry, and if a track were arranged there to run out by the river and back by the fringe of the marshes, a clear circuit of about eighteen miles might be arranged and variety obtained too. The run out to Beccles would be flat, but with plenty of gradual curves, and the run home could be arranged for rises, some of which would be natural. Above all the cost of the ground should be very reasonable. The distance from town is not excessive—100 miles—and Lowestoft is a good centre. All things considered, it is a spot that should receive attention when the time comes along.—Yours truly,

MAWDSLEY BROOKE.

BALLOON-STEERING.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Accidental discoveries frequently bring about far-reaching results. The discovery of petroleum, firstly, and the invention of the petroleum engine, secondly, have brought air navigation to a final solution. I am not an aeronaut myself, but I have followed the subject with experiments over long years, I collected almost every existing publication and engraving upon the subject. From a study of old engravings the problem would appear to have been solved in the early part of the last century, since theory appears to have been complied with, and the balloon of Mr. Santos-Dumont approaches very nearly to some of the old designs. Early failure was undoubtedly due to the want of motive power, or the use of a motor far too heavy and too weak for aerial work.

As a personal friend, I wish Mr. Santos-Dumont complete success, partial success he has already gained. He has taken advantage of the great power, for given weight, obtainable from the petroleum engine, and combined his general knowledge on ballooning with this boon, adding a necessary adjunct, great pluck and presence of mind. The main condition necessary for steering in the air is, firstly, to have sufficient power to combat the air currents, which are so much more rapid than currents in streams and rivers. Secondly, the design must be such, that all the acting forces shall have a resultant parallel to earth's tangent

at the point below the balloon, and thus enable the air vessel to proceed in a straight line. Thirdly, a suitable steering apparatus must exist, and this is well thought out and acts in calm weather, in the Santos-Dumont balloon.

But there are far larger problems to be coped with later, such as air-machines with no balloon to support the weight, and other matters. Let us, however, first succeed in what inventors and designers are doing to-day, then advance step by step. I was shown all the details of the Santos-Dumont balloon by the inventor himself, and the "pull" of the structure is remarkable when the engine is going.

The motor gives out 16 h.p., and the frame was hanging by long cords from the roof. When the screw was at work the "pull" to keep the frame from advancing was said to be 80 kilos. At any rate it was as much as I could do to resist the advance of the framework, by holding a rope with both feet planted on the ground. Schemes exist for making light motors to give 60, 80, and up to 300 h.p., hence, at no distant date, steering in windy weather may become feasible.—Yours faithfully,

DAVID L. SALOMONS.

MOTOR-CAR REPAIRS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I cannot too strongly agree with your remarks about motor-car repairs in your last issue. Generally bicycle makers, plumbers, blacksmiths, and in one case I know a confectioner blooming forth as a bicycle maker, call themselves motor-car repairers. A motor is a piece of delicate engineering work, and although an old motorist engineer, with twenty years experience, I sometimes feel puzzled. How these men can feel at home without skill, training, etc., I do not understand. And when I see a car costing three, four, or five hundred pounds, put in their hands, I shiver for the car's sake and for the owner's pocket. Why not adopt the system of no cure no pay. If a man calls himself an engineer, he ought to be such, and if he is not, he should not attempt to obtain work by false pretences.—Yours truly,

M. G. LACROIX.

THE OVERHEATING OF EXHAUST VALVES.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Having recently purchased a motor-car, I find one of the great faults of this means of locomotion is the worry caused by the overheating of the exhaust valves, which necessitates frequent renewal and constant "grinding in." I am writing to ask if your readers find this occurs generally or whether it is a special fault of my motor. If this is the case, is there no remedy? —Yours truly,

H. GREGSON.

THE WERNER MOTOR-BICYCLE.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—As I have recently purchased a Werner motor-bicycle I should like, with your permission, to ask a few questions of some of your readers who have had experience of same. In running down hill with exhaust valve open, should the air-admission valve on handle bar be closed or open? I find when open the valve rattles. In this hilly county of Devon I find after a run of fifteen to twenty miles, using the motor practically continuously, that the oil does not feed fast enough, and I have had occasion to open the oil tank and blow through. I should like to know whether this is unusual. I have used Pratt's motor spirit up to now, as petrol seems difficult to obtain here; is this as suitable as other makes? Instructions say paraffin should be injected into cylinder before starting; does this mean ordinary petroleum or petrol? I have used nothing up to now and had no trouble, but possibly there would be less friction if something were used, only I am uncertain as to what oil to use.

I am under the impression that I have seen an advertisement of an insurance company who undertake third-party risks for motorists, but I cannot find the advertisement now. I should be glad of address of same.—Yours faithfully,

H. G. E. C.

MR. F. MUHLENKAMP, of Brighton, writes:—"I should like to draw the attention of any fellow automobilists who may

unfortunately be stranded at Stevenage (Hertfordshire) to the firm of Gillespie and Robertson, situated on the Great North Road, who rendered me invaluable assistance on Sunday, at eleven o'clock at night, when I had unfortunately punctured. They intend stocking petrol, and as they take a great interest in motor-cars will, I feel sure, do everything to assist anyone in distress."

THE West Croydon Engineering Company (late Hirst and Co.) write:—"We notice your account of the trial 'Mossberg v. Wotton,' in which our Mr. Hirst appeared to say that the car was in our hands from May to September. This, we think, is misleading to the public and rather detrimental to us, as we only took the car to pieces in May, sent the parts to the Mossberg Company, and waited till the end of August for their return. You will, therefore, see that we did not actually have the work in hand during the long period mentioned."

MESSRS. CARLESS, CAPEL, AND LEONARD write:—"Referring to the deplorable accident which happened in the neighbourhood of our works on Saturday last, we should be obliged if you would make it known that the works were not all affected, and that our business is being carried on as usual."

A DEMAND is springing up for motor-cars in India. A serious difficulty, however, is met with in the non-supply of petrol. A Rajah in a state in South India is reported to have imported a fine car from France, and taken out a French engineer specially to look after it, but though he has tried everywhere in India he cannot get the *essence* with which to drive the car.

THE De Dion-Bouton Motorette Company, of Brooklyn, N.Y., is making preparations for placing on the market a De Dion motor of 8 h.p., having arranged for the importation of this, the latest De Dion motor, from the French factory for the present. The new motor has a cylinder bore of 100 mm. and a stroke of 110 mm. It weighs 140 lbs., including the fly-wheel and the friction clutch.

THE Association of Automobilists of Central Europe has just concluded an advantageous arrangement with the *Societe Generale d'Assurance* of Stuttgart, by which all its members, automobilists, or employees of firms engaged in the automobile industry, are insured against accidents. Policies are valid in Germany, Austria, and Switzerland, and can be extended to any other country in Europe.

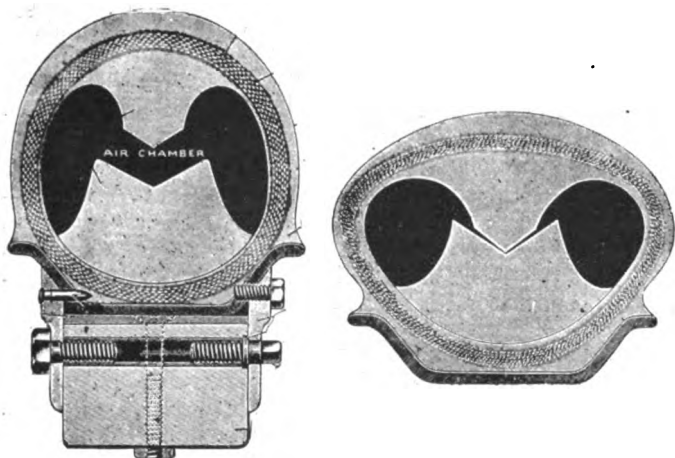
As mentioned in our last issue, the firm of Messrs. Dennis Brothers, Guildford, has just been registered as a limited company with a capital of £30,000, the shares being readily taken up privately. Another factory is to be commenced this week and is to be ready in time for next year's trade. The company are bringing a new 8 h.p. four-seated motor-car, which they intend making their chief manufacture for 1902.

It is reported that the Automobile Club of America is soon to take action on the speed question, which has been forced to the front again by the reckless driving of some of its members. The recent stand the Club took on this subject aided greatly in securing the favourable legislation now governing the use of automobiles upon the highways of New York State, and any lapse from this broad and reasonable position on the Club's part is likely to seriously impair its influence.

ELECTRIC PROPULSION, LIMITED, is the style of a company which has been formed with a capital of £100,000 in £1 shares, of which the present issue is 75,000 shares—20,000 to be allotted to the vendor as part-payment of the purchase money, while the remaining 55,000 shares are now offered for public subscription. The company will acquire two British patents, one for an electric motor and the other for an electric battery, covering what is known as the "Still" system of electric propulsion for use in light motor carriages. The purchase price of the patents is fixed at £50,000. A full subscription will provide the company with at least £25,000 working capital, but the prospectus specifies £12,000 as the minimum subscription upon which the directors may proceed to allotment.

THE MUNGER MOTOR-CAR TIRE.

TO provide a tire combining the advantages of a pneumatic with those of a solid tire has been essayed by many inventors, and it has been pointed out frequently that it would be very desirable for automobile work to have some kind of a pneumatic tire which, even if punctured, would bring the vehicle home easily and without injury to the tire itself or the car. It is to meet these requirements that the Munger vehicle tire, shown



FIGS. 1 AND 2.—THE TYRE INFLATED AND DEFLATED.

in the accompanying illustrations, has been introduced. Instead of the tire, which is of the single tube type, being entirely hollow inside, as is the usual pneumatic, it is fitted with two dovetail-shaped interior rubber projections, which, if the air escapes from any cause, such as a puncture, will cushion one upon the other, giving all the resiliency of the best type of cushion tire. The method of fastening the tire to the rim is very ingenious: the inner circumference of the rim is tapered, and the face of the steel tire is also tapered to conform to it, and the tire can be easily attached and detached by means of the outside rings and bolts. The tire is secured to the entire surface of the rim, no bolts or lugs being placed

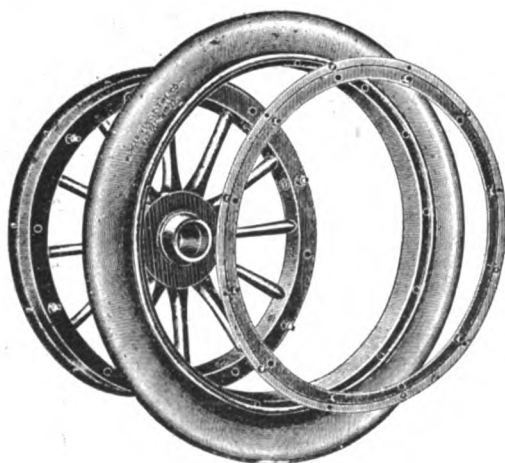


FIG. 3.—METHOD OF FIXING TYRE.

in it to weaken the fabric or cause unequal pressure to bear when they are not placed equidistance apart, and this method, it is claimed, prevents all possibility of chafing on the edge of the rim and gives quick response to the application of power without any drag. The tendency of air confined in any chamber is to form that chamber round, but in the Munger tire this tendency forces the tread buffer outward, causing the outer surface to assume the oval form on the tread, so that there is less contact with the road and friction is minimised. It is also stated that the tread buffer in the Munger tire presents greater surface than in the round

tire for the displacement of air, and consequently can be used with less inflation. It is claimed for the tires, which are made by the Munger Vehicle Tire Company, of New Brunswick, N.J., that they are practically indestructible and puncture proof.

THE MAYBACH CARBURETTOR ACTION.

(By a Correspondent.)

AT last the would-be monopolists of the motor trade have met with serious opposition by the tearing to shreds of the Maybach patent, which results from the decision of Mr. Justice Farwell. No one who has read the *Journal*, or who attended the meeting at the Automobile Club in February, 1900, at which Mr. John Scott-Montagu, M.P., boldly attacked the Lawson group and their patents, will be surprised at the Court's decision, and every honest automobilist who has the welfare of British trade at heart will be thoroughly pleased.

The Automobile Mutual Protection Association, who were the real defendants in the case, had long been seeking an opportunity of coming to conclusions with the British Motor Traction Company, Ltd. It would take too much space for me to describe, step by step, the difficulties which have been invented to try to avoid a fair fight, but I may mention one or two, illustrative of the proceedings of the would-be monopolists. Mr. Justice Farwell's remarks with regard to the Sherrin action need no comment. He says, "It was urged that Mr. Justice Kekewich decided the contrary as regards Butler, but it is clear that the evidence before him was of a very different character, and the defendant, in that case, seems to have been in a very accommodating mood when in the box." There is not a reader of the *Journal* who will not interpret these words in the only way possible. The second case I may mention, and which has been the subject of some correspondence in the *Journal*, was the attempt made to induce the defendant, Mr. Friswell, to consent to a judgment after it had been agreed to treat his action as a test case, and after other defendants had agreed to abide by its result.

Mr. Justice Farwell's Court on Wednesday, Thursday, and Friday of last week was filled with familiar faces. I remarked Mr. Rolls very much interested, and Mr. Alfred Bird turned up for half an hour, shaking his head wisely at the cross-examination of Sir Frederick Bramwell. Messrs. Dugald-Clerk and Swinburne both seemed staggered with the suggestion that a Butler or a Wilkinson would work at any speed, or with the idea that a so-called Maybach would work with the level of the oil anywhere but just at the mouth of the nozzle. Mr. S. F. Edge broke down completely before Mr. Terrell, K.C.'s, cross-examination, and his name was never mentioned again, though he sat tight on the front bench, looking more than thoroughly *en panne*. The defendants had three expert witnesses—namely, Sir Frederick Bramwell, Mr. Worby Beaumont, and Mr. R. E. Philipps; but so strong was their case and so just their cause that Mr. Terrell only called Sir Frederick Bramwell. Mr. Astell was called to prove the working of the Butler and the Wilkinson, and gave evidence in the most amusing manner. It was comic to watch Mr. Walter struggling between the suggestions of Mr. Dugald-Clerk, who was prompting him from behind, and the evidence of the actual practical experience of Mr. Astell, who was not in the least discountenanced by Mr. Walter's furious, "Don't you sir me." "Do you mean to tell me that your engine, with a Wilkinson carburettor, turned at the rate of 2,000 revolutions per minute without missing fire?" to which Mr. Astell found nothing more simple than to reply, "Why, yes, sir, of course it did. There is nothing strange about that," and all the automobilists present were sorry for Mr. Walter, and wondered whatever Mr. Dugald-Clerk could possibly be driving at.

The verdict given on Monday was so complete and crushing that it is difficult to see where grounds for any chance of success can lie in appeal, and I doubt whether the plaintiffs will have the courage to go on, but, in any case, I understand that the Association is prepared to go to the House of Lords if necessary.

THE WERNER MOTOR-BICYCLE.

THE motor-bicycle, attractive as it is from its simplicity, cheapness and ease of storage, not to mention the advantages which a single-track machine presents on rough roads, has taken some time in achieving any measure of popularity. This is, to some extent, due to the supposition that it is not altogether a safe machine, and a few words on this point may suitably preface a description of its management. The common bicycle, as we know, is at times liable to side slip on greasy roads, as are all pneumatic-tired vehicles; and in a two-wheel machine this usually involves a fall, the more serious as speed is greater; but the skilful rider knows under what circumstances this is likely to happen, and obviates it by slow and careful riding. The increased weight of a motor-bicycle, if suitably distributed, does not increase this danger at the same speeds; and if the rider will observe the same caution and go at the same speed over grease with his motor that he would with his ordinary bicycle, he will negotiate it with equal safety.

The suitable distribution of the weight to ensure stability involves its being placed as far as possible high up on the machine, to obtain a high centre of gravity. This point is not generally realised, but may be easily illustrated by the ease of balancing a billiard cue or a hammer on the hand with the heavy end up, and the difficulty of doing it the reverse way. Motor-bicycles have been built with the engine in almost every possible position, but the most successful and popular type up to the present time has been the Werner, in which the motor is placed in front of the handle-bar and drives the front wheel by a thick narrow belt, the speed ratio being about 8 to 1. It is air-cooled, and has a bore of 65 mm., with a stroke of 72 mm., and a nominal horse-power of $1\frac{1}{2}$. One handle forms the usual switch for controlling the ignition, while adjoining the other is a movable ferrule with a $\frac{3}{4}$ -in. hole, the rotation of which regulates the air supply, and thereby the quality of "mixture," the petrol vapour passing from the carburettor up the steering pillar, and there mixing with the air arriving along the hollow handle bar. On the top of the cylinder is the dome covering the inlet valve, surmounted by a small handle which works a throttle, and which when turned forwards closes same and opens a hole in the top of the dome, admitting cold air to the cylinder. Behind the middle of the handle bar is a handle, working vertically, for regulating the time of ignition; when this is raised it retards the ignition for starting, and when lowered advances it for running at speed. The petrol tank is suspended from the top bar of the frame, and is divided into three compartments, of which the rear one contains the two-cell accumulator, the centre one (which is entirely closed except for the filling aperture and a tap communicating with the bottom of front compartment) the petrol, and the front forms the carburettor. This last is kept filled to the depth of an inch or so through the tap referred to on the bird-fountain principle, and has a perforated cloth-enwrapped frame inverted in it, from the interior of which the pipe to the

engine takes its supply of vapour. The handle of the tap protrudes at the top of the tank, and should be kept turned off when not in use to avoid overfilling the carburettor, which can be emptied by the screw plug on the left side.

In order to learn the management of the machine familiarity with an ordinary free-wheel bicycle is of advantage; the free-wheel is the only point of difficulty which may puzzle the novice and cause a fall when trying to dismount, it being needless to say that a fall, harmless to an ordinary machine, would injure the motor. Having got accustomed to the running of the machine with belt off, the latter may be replaced, and the motor started. To do this the compression cock, which has a long lever resting on the left-hand part of the handle-bar, should be opened, also the tap of carburettor, until the latter is filled up to the level of the plug at the side; if overfilled, the petrol can be run off by this plug, and returned to the tank, the tap being closed during this operation. The opening of the petrol tank should be carefully screwed up, as the proper feeding of the carburettor depends on this being air-tight.

The air inlet at right handle-bar should be partly opened, the ignition handle raised to retard the firing point, throttle opened, and switch (left handle) turned on; the rider can then mount, and get up speed with a little vigorous pedalling (it is preferable to learn on a gentle down grade). On turning off the compression the engine should start with, if necessary, a little manipulation of the air inlet at right handle, which should always be kept as wide open as is consistent with good running, to avoid the evil effects of too rich a mixture. The ignition lever can now be depressed to advance the sparking, when the engine will pick up speed, which can be regulated by the throttle and sparking lever, which latter should of course be raised when engine is running slowly or before stopping. The band brake on the back



THE PARIS-BERLIN RACE—RIVIERRE ON HIS WERNER MOTOR-BICYCLE.

hub will be seen to make a double circuit round the drum, giving it great power for its dimensions, while switching off the current causes the engine to act as a retarding force, sufficient for all but steep hills.

The crank chamber requires a small charge of good lubricating oil, such as Price's heavy "motorine," every twenty miles or so. Half an ounce is quite enough, as an excess is very prejudicial to the running of these small engines, which foul easily, and are very sensitive to the quality of oil used; in fact, if they begin to run poorly during a ride it is generally due to this, and a small can of paraffin should always be carried to inject into the cylinder on such occasions, while the same precaution is necessary on returning from a run, or they will probably not start on the next occasion. The belt fastening is a somewhat weak point, and the holes for the fastener should be punched and then slit back, as a plain slit is apt to tear out. Castor oil, or, perhaps, preferably, Collan oil, which seems an excellent preparation, should be the only dressing employed, though a little belting brick (such as Stern's), is useful to have in the tool-bag for emergency.

With regard to the ignition, the subject has been so fully treated—*passim*—in connection with tricycles, that there is little necessity for further remarks about it, but a spark-gap of little over half a millimetre is about sufficient, as the electrical arrangements are cut rather fine. A dirty trembler is, of course, a possible event, and should be looked for in cases of stoppage, but, perhaps on account of the engine being as a rule kept cleaner than that of a tricycle, it does not seem of such frequent occurrence. The absence of the exhaust lifter, fitted to the earlier machines, seems a somewhat retrograde step, but, of course, may be easily remedied.

With ordinary care devoted to them, users of these machines will, I think, agree that there are few more reliable ones, while, in the event of an absolute *panne*, the removal of the belt will give a bicycle that is little heavier than those we used to ride without grumbling twenty years ago, and can be easily pedalled to the nearest repairer's.

R. W. BUTTEMER.

HERE AND THERE.

THE Locomobile Company of America have just issued an attractive poster to draw attention to their steam cars.

FINLAND has been selected for the scene of a record motor tour by the Grand Duke Cyril Vladimirovich, who is, perhaps, of all the Russian Imperial family, the most enthusiastic on this subject.

MR. CHARLES E. MILLER, of 96, Reade Street, New York, is putting on the market a new collapsible rubber bucket for the use of motorists. It is fitted with a strainer and spout, which enables the user to fill his tank from a brook or water trough without any sediment being deposited in the tank.

SEVENTY-FIVE members of the Chicago Automobile Club recently started to make a tour through the Wisconsin lake region. The party will visit Oconomowoc, Waukesha, Lake Geneva, Delavan, Highland Park and other points of interest. The route includes some of the most beautiful scenery of the lake region.

THE ninth run of the Yorkshire Automobile Club will be to Settle, Ripon, and Harrogate, on Saturday, Sunday, and Monday, August 3rd, 4th, and 5th, leaving Leeds City Square to-day (Saturday) at 2 p.m., and Manningham Park, Bradford, at the same time. Leeds and Bradford contingents meet at Burley-in-Wharfedale. For the convenience of members not wishing to go on the three days' tour, a run to Harrogate has been arranged for Monday at 9 a.m., City Square (Leeds), and Manningham Park (Bradford), entrance near Lister's Monument.

AT a recent meeting of the Automobile Club of America an attempt was made to bring about some sort of a league of the various automobile clubs in the United States. After a thorough discussion it was finally settled to call a convention, to which all the automobile clubs of America will be invited to send delegates, and at which some action will be taken regarding the formation of some sort of a national league. The outcome of this proposition to invite outside clubs to join in holding a convention was that a committee of seven was appointed to take such measures as might be found necessary for the calling of such a convention.

At a meeting of the Enniscorthy Rural Council at Enniscorthy, Ireland, last week a resolution was adopted to the effect:—"That we, the Enniscorthy Rural District Council, hereby call upon the County Council to rescind their resolution refusing permission to use the roads of the county to the Automobile Club of Great Britain, as we consider such a resolution is detrimental to the interests of the country, inasmuch as the money which would be sent to this country is expended elsewhere." In proposing the resolution, Mr. Nowlan said the members of the Automobile Club, if they were allowed to come into Ireland, would spend thousands of pounds, and he could not understand why the members of the County Council refused their permission. The chairman, in putting the resolution, said in his opinion the resolution refusing permission to the Automobile Club to come into the county was the most short-sighted resolution ever passed by a public body.

THE Cardiff Corporation is considering the question of adopting motor dust carts.

AN international automobile exhibition is to be held in Turin, Italy, in May and June, 1902.

THE Newcastle and Gateshead Water Company, Limited, has ordered a Thornycroft steam waggon.

THE motor-car service between Kelsall, Farvin, and Chester has, we hear, been discontinued through lack of support.

FOLKESTONE MOTORS, LTD., are now running motor charabancs at frequent intervals from Folkestone to Sandgate and Hythe.

THE automobile gymkhana which was to have been held at Sheen House Club on Saturday last was abandoned in consequence of the bad weather.

AT a meeting of the Institution of Mechanical Engineers at Barrow, on Wednesday, Mr. Holroyd Smith read a paper on the development of motor-cars.

BY the capsizing of a motor-car into a ditch near Byfleet, on Tuesday, a young lady of Clapham was thrown out and sustained injury to the ribs and severe shock.

THE Bradford Fire Brigade Committee has directed Chief Officer Scott to prepare a report on the feasibility, or otherwise, of applying motor-traction to the local fire-engines.

MR. E. COLLINS, of 2, Bishopgate Green, Coventry, has taken up the sale of the Werner motor-bicycle, and will be working the county of Warwick for some little time to come.

MR. VICTOR HART, of 228, Brixton Hill, S.W., has been appointed by Messrs. Botwoods, of Ipswich, agent for the Teras (Gobron-Brillié) cars for London and the South of England.

IN addition to holding the district agency for Benz cars, Messrs. Simkiss and Knighton, of Parliament Street, Derby, are well equipped to undertake repairs to all types of motor-cars.

MR. LONG announced in the House of Commons last week that he was considering representations from local authorities as to allowing motor-cars to be driven at greater speed in rural than in urban districts.

A MANCHESTER motorist was fined 10s. and costs for causing an obstruction by leaving his motor-car unattended at Alderley Edge whilst he went to watch the Manchester Wheelers' hill-climbing competition.

THE Accumulator Industries, Limited, notify us that their registered offices have been transferred to the works premises at Maybury, Woking, Surrey. The London offices remain as heretofore, 14, Silver Street, Bloomsbury, W.C.

A WALTON motorist was recently summoned for driving his motor-car on the footpath in High Street, Walton. Defendant pleaded that the road was being repaired, and the Bench dismissed the summons on payment of 8s. 6d. costs.

THE Singer Cycle Company are issuing an artistically arranged pamphlet anent their motor-cycles. An excellent diagram makes the mechanism of the "Singer" motor wheel quite clear, and the rest of the booklet is devoted to testimonials which should carry weight.

WE are informed that the business of the Bromley Autocar Company is about to be taken over by a company having a capital of £7,500. As well as the development of the motor trade, the company's objects include the starting of several services of motor buses.

A MOTOR-BRAKE now runs daily between Cardigan and Newcastle-Emlyn, doing the ten miles journey under the hour. It is also stated that the Great Western Railway Company intend connecting their terminus at Cardigan with that of Newcastle-Emlyn by a service of motor-vehicles.

MESSRS. R. BURLAND AND SONS, of Bishopgate, Wigan, stock petrol, oils, and lubricants. Mr. R. O. Burland, of the firm, acted as local honorary secretary during the recent trials of the Liverpool Self-propelled Traffic Association, and motorists will find in him a sympathetic and attentive caterer for their wants.

IN connection with the forthcoming Glasgow trials, the Automobile Club has decided to extend the period for entries of delivery vehicles and for vehicles propelled by electricity, and also for the entry of tires and other parts of automobiles, including ignition apparatus, until Wednesday, the 14th inst., at twelve noon.

THE Forman Motor Company, of Day's Lane, Coventry, are about to place on the market a small motor suitable for a motor-bicycle. The engine will be fitted with a patent automatic oil feed, doing away with the large carburettor now in vogue, and giving greater facilities for carrying a larger supply of petrol.

TENDERS are being invited for the supply of two motor (not electric) omnibuses for the Metropolitan Asylums Board. Forms of tender and general particulars can be obtained upon application at the office of the Board, Victoria Embankment, E.C., where tenders are to be delivered by 10 a.m. on September 23rd.

FOLKESTONE MOTORS, Limited, has been registered with a capital of £5,000, to manufacture and deal in motor-cars. The first directors (to number not less than three nor more than seven) are T. F. Maltby (chairman), C. E. Perry, and H. R. Martingell. The registered office is at Bank Chambers, 27, Sandgate Road, Folkestone.

MR. VAN RADEN, of Coventry, has introduced an improvement in his watch-shaped volt-meter and combined volt and ampéremeter. He has now arranged the reading of the volt-meter over a larger surface, and from 0 to 1, and from 1 to 2 volts divided into tenths of volts, so that the exact voltage of small cells can be read in tenths of volts.

WE learn that the City and Suburban Electric Carriage Company, of 6, Denman Street, Piccadilly Circus, London, W., have been favoured with an order from Her Majesty the Queen for an electric Victrolite exactly similar to the one previously supplied to Her Majesty, and which she intends for presentation to her sister, the Dowager Empress of Russia.

WHILE a party of excursionists were at Hopton on Sunday evening one of them slipped from the step of the brake and dislocated his kneecap. A motor-car belonging to Lowestoft, privately engaged by some ladies and gentlemen, was passing at the time, and the occupants consented to convey the man to the hospital, where he arrived in about twenty minutes. The party wish to thank the unknown occupants of the motor-car.

THE Borough Councils are being appealed to by the National Cyclists' Union on the subject of the excessive watering of roads and dangerous tramlines. The Union suggests more frequent collection of dust, the use of a finer rose in the watering-cart pipes, and the giving of instructions to road surveyors to keep a more watchful eye on the tramlines, so that the latter should be always kept flush with the paving.

BROMLEY is about to extend its motor-car service, that to Biggin Hill having demonstrated the value of such communication with outlying districts. The local automobile company now proposes to run a regular service to Sevenoaks and intermediate villages. Rumour is also connecting Bromley with Catford,

Beckenham, and even Croydon, but up to the present these last routes exist only in an imaginary stage.

IN connection with the Flower Show at Blankney, Lincolnshire, on Wednesday last week, the usual sports were held. Included in the events was a Motor Pursuit Race (ten laps). Winners of heats: T. H. Tessier, London, bicycle (Werner); A. Plumridge, Lincoln, 2½ h.p. tricycle. Final: Plumridge gained an early advantage, and kept it, though Tessier recovered some ground in the last two laps. Time, 4 min. 40 secs.

ONE of the most refreshing sights seen in London during the hot weather last week was the motor water-van now operating in the Strand and Holborn. It is a great improvement on the old cart, inasmuch as the van moves so much quicker that the water is really sprinkled, without leaving pools in the road. Judging by appearances, the van does quite three times as much work as a horse-drawn vehicle, and therefore it is not necessary to deluge the road with water, since the same space can be covered three times to one as formerly.

AT the last meeting of the Gravesend Town Council the Watch Committee reported that Mr. J. Baxter, of Harmer Street, had submitted for inspection four motor hackney carriages to be licensed to ply for hire in Gravesend, to run between the following places at the following prices:—Brunswick Road to Parrock Street, 1d.; Parrock Street to Elephant's Head, 1d.; Elephant's

Head to Leather Bottle, 1d.; Leather Bottle to Huggens' College, 1d.; Clock Tower to Huggens' College, 2d.; or the complete journey 3d. Licenses for the four vehicles were granted.

IRISH motoring circles have incurred a great loss by the death, announced in our last issue, of Mr. J. McDonald, of Dublin, who was a keen and enthusiastic motorist and manager of the Cycle and Motor Company's depot in that city. It is a matter of great

concern to his many friends to learn that Mr. McDonald's widow and children are left practically penniless, and a fund to assist them is being raised, of which Mr. D. W. Alexander, 1, Stephen's Green, Dublin, is the treasurer, who will be pleased to receive donations. We feel sure that many of our readers who had the pleasure of Mr. McDonald's acquaintance will be glad of this opportunity of showing respect to his memory.

ONE of the finest motor 'buses constructed at Coventry by the Motor Manufacturing Company, Limited, has just been supplied to Craiglockhart Hydropathic Company, Limited, through its Scottish representative, Mr. John Love. The vehicle, which has been specially designed for the work, is of 8 nominal h.p., developing 10½ h.p. Entrance for passengers is effected from the left side at the front, two broad steps making access or exit easy. A glass screen and door separate the passengers from the driver, who is protected from the weather by a glass window fixed to the dash board. The car is upholstered in morocco leather, and painted in primrose and black. It is now running between the Hydro and the station at Merchiston, N.B., for the convenience of guests.



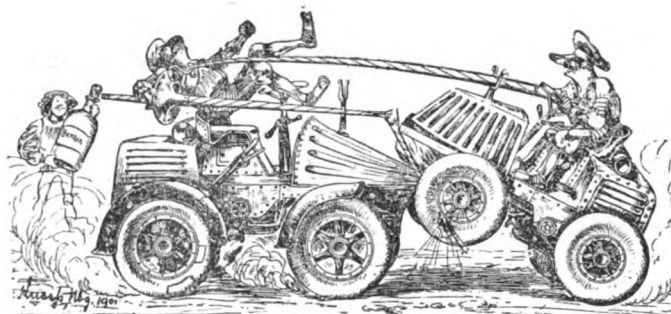
THE 5-TON ELECTRICAL WAGONS BUILT BY HERR HEINRICH SCHEELE, OF COLOGNE.
(Cliché de) [Allgemeine Automobile-Zeitung.]

THE MAYBACH FLOAT-FEED CARBURETTOR PATENT ACTION.



Is the Chancery Division of the High Court of Justice, on Tuesday, last week, Mr. Justice Farwell had before him the case of the British Motor Traction Company, Ltd., and others, *v.* Friswell and another. It was an action brought to restrain the alleged infringement of the Maybach patent, No. 16,072 of 1893, for improvements in the method of producing the explosive mixture of hydrocarbon engines. The defence was shortly a denial of the infringement, and that the patent was bad by reason of certain anticipations. Mr. Fletcher Moulton, K.C., Mr. A. J. Walter, and Mr. Hume (instructed by Messrs. J. B. and F. Purchase), appeared for the plaintiffs; while Mr. T. Terrell, K.C., Mr. Roger Wallace, K.C., and Mr. E. G. Mears (instructed by Messrs. Firth and Co.), represented defendants.

Mr. Moulton, in opening, said this was a patent which had already been sustained. It was a patent for a carburettor, whereby the petroleum which were used—especially the not very light petroleum employed—in motor-carriages, could be thoroughly and effectively turned into vapour for the purpose of being used as the explosive mixture in the cylinder; but the characteristic of this carburettor—which was practically far more largely used than any other—was this: It was so regular in the automatic way in which it acted that one could use it for speeds which varied from one to ten. That was to say, one could use it for eighty revolutions per minute, or 800 revolutions, because, by this arrangement, the suck was so powerful during the short time it lasted, and, when slow, was so little powerful that the mixture was the same at all speeds. No other device did its work so efficiently as this. This meant half the battle in connection with motor-cars; and, if he proved this, it was inevitable that merit must follow. Part of the



evidence would show that defendant did plaintiffs the honour of taking the patent, but it would be alleged that it had been anticipated. He pointed out that some of the anticipations were dealt with in the previous case, and some of them were new; but he was perfectly certain his friends could not prove that one of them would do the work as well as the plaintiffs'. [Mr. Terrell: Indeed, we shall.] They were all different arrangements—radically different in principle, some of them—but all of them markedly different in the arrangement of the parts. That it was novel to suck in the supply of petroleum by means of the suck of piston, counsel did not pretend; but to do it successfully, as in this case, was another thing. Dealing with the infringement, the main difference between it and that shown in Fig. 1, was this: In Fig. 1 the needle was fixed to the float and pointed upwards. What the defendant had done was this: He had a couple of "toggles," so that when the float went up the needle went down, and thus he placed the hole at the bottom. When the float went up it plugged the hole, and the needle went down. It was exactly the same thing here. The claim counsel relied on was claim 1, "The method of producing the explosive mixture, in hydrocarbon engines, consisting in sucking liquid hydrocarbon out of a nozzle *c* fed from supply basin *a* by pipe *c*, and extending into connection *b* between air inlet channel *b* and mixing chamber *b*, said sucking being performed by the air sucked by the working piston through said channel *b*, connection *b*, and mixing chamber *b*, and the level of the hydrocarbon within basin *a* being kept on the same height by a swimmer valve *d*, acting on the main supply tube *e*, substantially as described." Counsel added that what the defendant had done was the mere mechanical equivalent of the plaintiffs' patent.

Mr. Dugald Clerk was the first witness for the plaintiffs. He described the object of the invention as enabling a charge of oil to be taken into a motor cylinder of an engine, always in strict proportion to the air entering the cylinder. It was necessary, to obtain an explosive mixture, that the proportion should be kept within very narrow limits. For instance, in the gas engine, they had one volume of gas entering eight or nine volumes of air; and what they needed in the oil engine was a small volume of air to make an explosive mixture in the same proportion when vaporised. It was very important in the motor-carriage, or in any oil engine, that the proportion of oil and air should remain constant automatically, and Maybach accomplished it in a very simple way. He generally bore out

counsel's opening statements, and added that he had read the prior specifications pleaded by the defendant, but did not find the plaintiffs' invention there. Defendant had attempted to do the same thing as the plaintiffs, but it was a failure. The article produced was, in witness's opinion, an infringement. Cross-examined by Mr. Terrell, witness admitted that nowhere in the letterpress of the specification did he find any statement as to what the level of the liquid was to be in C 1; but he understood it to be shown in the drawing. At this point the hearing was adjourned.

On Wednesday, the 24th ult., Mr. Dugald Clerk concluded his evidence, and was followed by Mr. James Swinburne, who corroborated; but in cross-examination he admitted that he had never seen a Maybach exactly like Fig. 1 in the specification, or exactly like Fig. 2; nor had he ever tried to see if Figs. 1, 2, 3 would work exactly as there shown. There was an arrangement for varying the air-draught, and such an arrangement was always necessary in a governing engine. An engineer would have no difficulty in understanding the drawings. Witness doubted whether it was important that the liquid admitted at the nozzle should strike the top of the mixing chamber. It did not matter whether it did or not, and would work just as well in either case so long as it was well sprayed. Mr. A. J. Boulton and Mr. S. F. Edge were next examined. The latter stated that some years ago he tried a Butler carburettor, and it looked to him a complete failure for motor-car work.

Mr. Terrell, opening the case for the defence, said that the claim of the patentee was for a process of working which, in this connection could have but one meaning. He put it to Mr. Swinburne that each one of the steps of the process was to be found in Butler and in Wilkinson if his (Mr. Terrell's) view was right. If that were so, then the defendants ought to succeed. Let them see what a man claimed. Mr. Justice Buckley had said that one ought to read the whole specification in construing a claim, but the Court of Appeal were not of that opinion, and it was pretty obvious why. As to Wilkinson, they had it that he had an air-tight chamber, and so had Maybach. Wilkinson did not say whether it was an air-tight chamber or not, but counsel was going to show that he meant an air-tight chamber, and that Maybach did not. The defendants said that this was a claim for a method, and the plaintiffs were in this dilemma: If they said their patent was sufficient to catch the defendants as to infringement, the defendants answered that for the same reason the patent was bad by reason of anticipation. He asked the Court to put a construction on Wilkinson which was simple and natural, and he submitted there could be no infringement of letters patent which had been anticipated. As to the judgment of Mr. Justice Kekewich against Sherrin, which had been referred to, counsel said it was not a judgment upon a matter of law, but only of fact, and as such it could only be cited here. From that point of view he asked the Court now to look at the additional evidence here and judge accordingly. The hearing was again adjourned.

On Thursday, the 25th ult., Sir Frederick Bramwell was the first witness for the defence, and he said that he found all the essential details of Butler in Maybach; and, with regard to the alleged infringement, he found the outlet nozzle in Wilkinson that was in Maybach. In cross-examination by Mr. Walter witness admitted that he had had no practical experience of these oil engines, nor much experience of the conditions and details of working them. Mr. W. Astell, manager of the New Orleans Motor Company, having also given evidence, counsel addressed the Court, and his Lordship reserved judgment.

Mr. Justice Farwell delivered his judgment on Monday in the following words:—

The plaintiffs are the owners of letters patent 16,072 of 1893 for improvements in the method of producing the explosive mixture in hydrocarbon engines, and they claim an injunction to restrain the defendants from infringing their patent. The defendants deny the infringement, and say that if they do infringe, the plaintiffs' patent is bad. The original patentee was one Maybach, and his specification has been considerably amended. He describes his invention thus:—"My invention relates to hydrocarbon engines, in which the explosive mixture is produced from air and a liquid hydrocarbon, as petroleum, ligroin, benzine, naphtha, or the like, and my improvements in the composing or forming of this mixture relate to the manner in which the liquid hydrocarbon is moved and dispersed by, and thoroughly mixed with, the air sucked by the working piston into the cylinder through a special feeding channel, into which a nozzle supplying the hydrocarbon extends in any direction, and at any place, and the object of my improvements is to produce a mixture of never-varying composition, irrespective of the speed of the engine as well as that of the piston in different parts of the path of this latter." His first claim in the original specifications ran thus:—"The method of producing the explosive mixture in hydrocarbon engines, consisting in sucking liquid hydrocarbon by the air sucked by the working piston, substantially as described." This was followed by claim six, which is now claim one, and runs thus:—"The method of producing the explosive mixture in hydrocarbon engines, consisting in sucking liquid hydrocarbon out of a nozzle C 1, fed from supply basin *a* by pipe *c* and extending into connexion *b* 2 between air-inlet-chamber *b* 1 and mixing chamber *b*, said sucking being performed by the air sucked by the working piston through said channel *b* 1, connexion *b* 2, and mixing chamber *b*, and the level of the hydrocarbon within basin *a* being kept on the same height by a swimmer valve *d*, acting on the main supply tube *e*, substantially as described." The intermediate clauses, also now struck out,

claimed separately and respectively each of the various items which are combined in six, except the preservation of the level by the swimmer valve. It appears from the evidence that in these machines it is essential that the charge of oil to be taken into the cylinder of the engine should be always in strict proportion to the air entering the cylinder; that it is necessary in order to obtain an explosive mixture that the proportion should be kept very nearly constant, and that this is most effectually done by causing the oil to be sucked by means of the air sucked by the working piston; as the velocity of the piston is increased the rush of air is increased, and as the rush of air is increased the quantity of oil drawn out is increased also, and *vice versa*. The first question is the true construction of the patent, and, as a matter of construction, I hold that the patent is for a method, not for a machine. It is true that the method is and must almost necessarily be defined by reference to a machine in order to make it intelligible, but the gist of the claim is for the method. I will illustrate my meaning by referring to the great case of James Watt's patent for steam engines, "*Boulton v. Bull*" (2 H. Bl., 463; 3 R. R., 439). Lord Chief Justice Eyre says at p. 470:—"The substance of the invention is a discovery that the condensing the steam out of the cylinder, the protecting the cylinder from the external air, and keeping it hot to the degree of steam-heat, will lessen the consumption of steam. This is no abstract principle, it is in its very statement clothed with practical application"; and at p. 471, "Some machinery, it is true, must be employed, but the machinery is not of the essence of the invention but incidental to it." Again, Mr. Justice Rorke, at p. 451, says:—"When the present patentee set his inventive faculties to work he found fire-engines already in existence and the natural qualities of steam already known and mechanically used. He only invented an improvement in the mechanism by which they might be employed to greater advantage. There is no newly-discovered natural principle as to steam, nor any new mechanical principle in his machine; the only invention is a new mechanical employment of principles already known. The objection is that there is no drawing or model of a particular engine; and where is the necessity for such drawing or model if the specification is intelligible without it? Had a drawing or model been made, and any man copied the improvement, and made a machine in a different form, no doubt this would have been an infringement of the patent. Why? Because the mechanical improvement would have been introduced into the machine, though the form was varied. It follows from thence that the mechanical improvement, and not the form of the machine, is the object of the patent." So here, I hold that the mechanical improvement, not the form, is the object of the patent, and that the machine is not of the essence of the invention, but incidental to it. In Watt's case there were no drawings at all, and it is said that the use of the lettered descriptions in the drawings to the present specification shows that the patent is not a method patent, pure and simple. No doubt the use of letters in a patent for a machine has the effect of limiting and restricting the generality of the claim, but I take the specification as a whole, and, having regard to the first paragraph followed by the words "In order to make my invention more clear, I refer to the accompanying drawing, in which similar letters denote similar parts," and to the fact that this is left untouched in the amended specification, I have come to the conclusion that the claim is for a method defined as stated above, and that the letters are used for the purpose of illustration only and not by way of delimitation and restriction. I am confirmed in this view by the difficulty that I have found in discovering on any other construction what the real gist of the supposed invention is—a difficulty which appears to be shared by the plaintiffs' experts and counsel. It is said that the preservation of the level of the liquid immediately below the nozzle is the essence of it—i.e., that the patentee discovered that it was essential to keep the oil close under the nozzle and to keep the nozzle pointing in an upward direction so that the oil should not run out. I can only say that he does not say so. It is strange, if this be so, that all express reference to it and all explanation of its importance are omitted from the specification, and as regards the nozzles the contrary appears on page 1 of the specification, where it is stated that a nozzle extends in any direction and at any place. Moreover, on the evidence it is really almost immaterial. A motor-car will run just as well for all ordinary purposes although the oil be a short way down the pipe, and it is to be remembered that these carburettors are very small and that it is a matter of the fraction of an inch. It was suggested that the striking of the jet of oil on the top of the chamber immediately above the nozzle was of importance, but this was not seriously pressed, and it is to be observed that this element does not occur in Fig. 3. The truth is that Maybach thought that he had discovered the mode of maintaining the proportion of the air and oil by the action of the piston, and his amended patent is merely an attempt to save something from the wreck when he found that his supposed discovery was old. Unless the patent is for the method defined and illustrated by reference to any nozzle, channel, mixing chamber, and so on of any sort, it fails, in my opinion, for want of subject-matter. But if it be for such a method, then it fails for want of novelty. Maybach told the world nothing that was unknown before, and the actual method by nozzle, channel, mixing chamber, and so on, had been anticipated by Wilkinson and Butler. It was urged that Mr. Justice Kekewich decided the contrary as regards Butler, but it is clear that the evidence before him was of a very different character, and the defendant in that case seems to have been in a very accommodating mood when in the box. In this case it has been proved that Butler's will work, and will work as well as, if not better than, any other. I do not place so much reliance

on Wilkinson's, because the experiments were not so satisfactory. If a machine made according to a prior specification is relied on as a practical anticipation, the machine ought to be made according to the whole specification, and not with omissions the materiality of which would raise a fresh and by-issue. Finally, even if the patent were valid for a machine, I should be of opinion that the defendants had not infringed. The first claim states in terms that the sucking is performed by the air sucked by the working piston; in the defendants' the air comes down in opposition to, and not in accordance with, the outcome of the jet. The claim is for direct suction by reason of the vacuum caused by the piston as distinct from the induced vacuum caused by the air rushing past, used by the defendant. The plaintiffs' claim fails, and their action must be dismissed with costs.

THE METROPOLITAN MOTOR MANUFACTURING COMPANY, LIMITED.

A PETITION for the compulsory winding-up of the Metropolitan Motor Manufacturing Company, Limited, has been presented by Mr. A. E. Creease. Mr. J. Edwards, who supported, asked for an adjournment in order to amend the petition by ordering another affidavit. A few days ago the company held a meeting and passed what was stated to be a resolution for voluntary liquidation. Mr. Vaughan Williams opposed, and asked that the petition be dismissed. Mr. Edwards said there was a charge against the present liquidator that he had wasted the assets, and he asked for an undertaking that he should not deal further with them pending an adjournment. His Lordship said that Mr. Edwards was not in a position to ask for that or anything else at present. He would, however, adjourn the hearing for a week, the petitioner to pay the costs.

PETROLEUM SPIRIT FOR MOTOR-CARS.

At Southwark, last week, Mr. J. W. Godfrey, from the Solicitors' Department of the London County Council, attended with regard to the council's pending appeal against the dismissal of the prosecution under the Petroleum Acts, on April the 24th. The case was one of special interest to the motor-car industry, the defendant being Mr. Montague Stanley Napier, of Vine Street, York Road, a manufacturer of motor-cars. It was agreed by Mr. Minton-Senhouse, barrister, that the petroleum found on the defendant's premises by the county council inspector was exempt from the licensing provisions of the Petroleum Acts, and was subject only to the rules and orders of the Secretary of State under the Locomotives on Highways Act, 1896, and that, therefore, the defendant did not require a licence from the county council to store petroleum for the purposes of his business. The magistrates took that view, but agreed to have a special case on the point of law, which was then raised for the first time, and which was regarded as equally important in the interests of public safety, on the one hand, and the requirements of the motor manufacturers, on the other. It now appeared that the matter had been taken up by the Motor Union, of which Mr. Napier was a member, and by the Automobile Club, and, in the absence of Mr. Minton-Senhouse, those bodies were represented by Mr. G. F. Emery, barrister, instructed by their solicitor, Mr. Staplee Firth. Mr. Paul Taylor invited the gentlemen representing the respondent to accompany Mr. Godfrey, representing the appellants, to the magistrate's private room, where he held a prolonged interview with them, and eventually settled the terms in which the case should be stated for the opinion of the High Court. There had apparently been some difficulty in the matter, as this was the last day but one allowed for the preliminaries of the appeal.

AN OBSTRUCTION CASE.

At the Bournemouth Borough Police-court, George Dorey, a motor-car driver, was summoned for preventing the free passage of the highway in the Christchurch Road, Bournemouth, on the evening of July 8th. Mr. Turner appeared for the prosecution, and Mr. C. Lamport for the defence. Walter Ireson, driver, employed by the Southbourne Omnibus Company, said that at about 9.30 p.m. on the evening of July 8th he was driving along the Christchurch Road in the direction of Bournemouth. He pulled up at the Derby Road to set down a passenger, and when he started again the defendant's car passed him. Witness was driving on the near side of the road, and when the defendant had got in front of him he stopped without any warning within three or four yards in front of his (witness's) horses, and set down some passengers. In the endeavour to avoid an accident witness pulled his horses up very sharply, but in doing so the middle horse of the team went down. The horse had broken its leg, and it had had to be shot. The Rev. Robert Boyd Morrison corroborated the evidence of the witnesses.

Mr. Lamport then addressed the Bench for the defence, and in doing so criticised the whole proceedings as being a case brought in that court to prejudice future litigation in a claim for compensation for the horse that fell down. He also pointed out that the summons was worded "unlawfully and wilfully did prevent, hinder, and interrupt the free passage

of a certain carriage," and he argued that there had been no evidence to show that there was anything wilfully done, and he submitted that, on the evidence of the prosecution, he was entitled to have the case dismissed. Some discussion ensued as to whether or not the summons had been taken out under the right section of the Act, and the Bench retired to consider the evidence. Upon their return, the Mayor said the Bench had considered the evidence in all its bearings, and had come to the conclusion that they must dismiss the case. Mr. Turner said that in that case he would ask that a fresh summons might be issued under Section 4 of the Act. Mr. Lamport asked the Bench to make an order as to costs, but this the Bench would not do.

FURIOUS DRIVING CASES.

At Daventry, W. A. Stevens, of Peckham, was summoned for driving a motor-car above the rate of fourteen miles an hour, at Weedon, on the 11th ult. The Rev. Henry Hughes Crawley, Stowe-Nine-Churches, stated that his man was driving witness from Weedon Station to Stowe at 2 p.m., when witness saw the motor-car coming down Stowe Hill at thirty miles an hour. Witness was not an expert, but the pace was tremendous, and he could not see the men for dust. The car was also on the wrong side of the road. Defendant said that he had a broken tire, and it would have been impossible to travel at that rate. He had driven a car for three years and had never been cautioned before. Fined £2 and 7s. 4d. costs.

At Stockport, George P. Cookson, of Old Trafford, was summoned for furiously driving a motor-car at Cheadle. Constable Bowden stated that defendant covered 220 yards in twenty-five seconds, which worked out at over eighteen miles an hour. The defendant said the car was only geared up to fifteen miles, and that speed could only be attained when everything was favourable. Going down hill he shut off the gas. Thomas Freeman, who was with the defendant, said the speed did not exceed twelve miles an hour. A fine of 10s. and costs was imposed.

At Southampton, Harry Gearing, of London, was summoned for furiously driving a motor-car in Winchester Road, Shirley, on the 17th ult. Defendant pleaded not guilty. P.C. Warden stated that the vehicle did the quarter mile in thirty seconds, being equivalent to thirty miles an hour. Defendant said the machine was only made to go twenty-five miles an hour. Fined 5s. and costs.

At Hastings, Philip Paddon was fined £1 and costs for furiously driving a motor-car on July 17th. The police said the car was going from fourteen to sixteen miles an hour, but the defendant said the speed was only twelve miles an hour.

At Kingston, Mr. T. Harveyson, the proprietor and driver of a four-hand coach running between London and Guildford, summoned Mrs. B. Weguelin, of Coombe End, for furiously driving a motor-car along the Portsmouth road to his "great annoyance and risk." Mrs. Weguelin disputed that she drove furiously or recklessly. She had driven a motor about 30,000 miles all over England, and never been complained of before. On this particular occasion she slowed down to less than twelve miles an hour as she was passing the coach. Mr. Harveyson was the only gentleman on the Portsmouth road who objected to her driving. Each time that she passed him he became very excited, leaning over the coach and waving his hat about, and once in his excitement he knocked off the hats of four of his passengers. Mr. Arthur Newton, for the defence, informed the Bench that before Mr. Harveyson applied for this summons one had been granted against him at Guildford for an alleged assault upon Mrs. Weguelin on the occasion of his demanding her name and address, which he had no right to do. The summons against Mrs. Weguelin was dismissed.

At Huntingdon Divisional Petty Sessions, Arthur James Robertson, of Peterborough, was charged with driving a motor-tricycle at a greater speed than twelve miles an hour at Brampton, on July 9th. Defendant pleaded guilty. P.C. Storey stated that he was near Brampton Hut at 2.26 p.m. on the day in question in company with P.C. Purser. They saw the defendant riding on a motor-tricycle coming from the direction of Buckden. The tricycle covered 750 yards in 80 secs., which was at the rate of nineteen miles 310 yards an hour. Defendant said he went at a slow pace through the inhabited parts of the country, but admitted that in the open country he went more than twelve miles an hour. The magistrates retired, and on their return into the Court the chairman said it must be clearly understood that the magistrates of the county of Huntingdon were determined to have the law carried out. The pace in this case was not so very excessive, and looking at all the circumstances of the case, they would only fine the defendant £1 and 3s. costs.

At the Aylesbury Petty Sessions on Saturday, the 27th ult., Mr. Noel Kenealey was summoned for driving his motor-car furiously to the danger of the lives and limbs of persons on the highway. The evidence on behalf of the police had been elaborately got up. One witness suggested that the three gentlemen on the car were disguised with masks in order to avoid detection. Evidence was also given by three cyclists, who were with a party of five, one of whom was knocked down and his machine smashed, and on whose behalf the proceedings were watched by a solicitor, apparently with a view to commence a civil action. The case was thrashed out at considerable length, and ultimately, after retiring to

consider their judgment, the Bench returned into court, and stated they had come to the unanimous conclusion that the case must be dismissed. Mr. Staplee Firth appeared for Mr. Kenealey, and conducted the defence.

It is stated that Tod Sloan, the American jockey, has entered for the forthcoming Erie to Buffalo automobile road race in the United States, and has ordered a special Mors car for the competition.

A CONFERENCE was held last week at the Automobile Club to consider the suggestion of the French Automobile Club that racing cars should be limited in weight to 1,000 kilograms. The result of the meeting was as follows: This conference recognises that the Committee of the Automobile Club of Great Britain and Ireland should consent to the proposal of the Automobile Club of France, that racing cars generally should be limited in weight to 1,000 kilograms. As regards the Gordon-Bennett race, however, there should be no limit, but the race should be run under the same rules as this year. The meeting was largely attended both by Club members and representatives of the trade, and the matter was fully discussed.

WE are pleased to be able to record that at last our military officers have decided to give automobiles a practical trial. During the last nine or ten days the Speedwell Motor-Car Company, of Reading, have been driving General Buller and his aide-de-camp during the manœuvres on Salisbury Plains, on a 5 h.p. Renault tonneau. The General expressed his entire satisfaction with its performance, both while on the country roads and on the Plains, as well as while visiting the Volunteers stationed at Aldershot. The car took the rough ground and the deep loose sands admirably. During the whole of the time, although the work was extremely rough, there was not a single mishap, breakdown, or adjustment required. The Speedwell Company also supplied a 10 h.p. Daimler brake to carry the General's servants and baggage.

TO CORRESPONDENTS.

All communications intended for insertion in this Journal or relating to Editorial matters should be addressed to THE EDITORIAL DEPARTMENT, MOTOR-CAR JOURNAL, 39 and 40, Shoe Lane, London, E.C. Letters must in all cases be accompanied by the name and address of the writer, as no notice will be taken of anonymous communications.

The Editors cannot undertake to return MSS. or drawings, although every effort will be made to do so in the case of rejected communications. Where such are regarded as of value, correspondents are requested to retain copies.

The Editors do not hold themselves responsible for the opinions expressed by their correspondents, or for statements and facts which do not appear in the editorial columns.

The Editors and publishers beg also to state that they will accept no responsibility for unsolicited contributions, even if used, unless payment for same is directly specified in forwarding, and the terms arranged before publication.

To insure insertion communications and contributions must be in the Editor's hands by Wednesday forenoon of the week in which the same are intended to appear. Disappointment may be caused by non-compliance with this rule, and to avoid this earlier receipt, if possible, is necessary.

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COMMENTS.



SOME months ago General Sir Redvers Buller inquired of the Automobile Club whether he could hire a motor-vehicle for use during the Cavalry Manœuvres, and was informed that members of the Automobile Club were willing to place their vehicles at his disposal during the manœuvres. As a consequence, arrangements were made that Mr. Mark Mayhew, the vice-chairman of the Club, with his 7 h.p. Panhard, Mr. John Hargreaves, J.P., with his 12 h.p. Daimler, and Mr. J. Holder, with his 16 h.p. Napier, should be at the disposal of General Buller during the Cavalry Manœuvres which commenced on Monday, the 22nd ult., and continued throughout that week. Mr. Shrapnell Smith also arranged with Captain Lloyd, R.E., the Secretary of the War Office Committee on Military Transport, to take that gentleman during the manœuvres on his Ariel quadricycle, in order that he might have an opportunity of judging of the use of automobiles for Staff purposes, and as to the working of the three Thornycroft vans, and the Milnes petrol van, which were being used for transport purposes. Mr. Mark Mayhew was engaged for the greater part of the time in conveying Major-General Hemming, who was delighted with his automobile experiences. Mr. Hargreaves drove General Buller all day on the 24th July in spite of a terrific thunderstorm. The people in the villages turned out to see General Buller and cheered him heartily as he was driven along at twenty-five miles an hour. The drive was across Salisbury Plain, by lanes and cart tracks, General Buller being delighted with his experience. At other times Mr. Hargreaves was engaged in taking members of the Staff and in reconnaissance duties. The motor-vehicle was able to take scouts at high speeds to within a few yards of the top of a hill, drop them, allow them to advance on foot to the brow of the hill, and by this means to discover the enemy and return on an automobile to communicate their discovery in a very short period of time. The weather on the whole was very bad throughout the week.

More Military Exploits.

THERE seems to be no end to the favourable impressions which the motor-car is creating in the military mind. Fresh from their achievements during the cavalry manœuvres, motorists are winning unqualified praise by the manner in which they are assisting in the training of a large body of military cyclists at Aldershot. The Hon. C. S. Rolls and his Mors carry Major-General Douglas, who is in command of the wide field of operations. Other members of the staff are also conveyed by members of the Automobile Club, and on Wednesday Sir Redvers Buller followed the very trying march on a motor-car. Lateral communication between columns operating on parallel roads has also been maintained by motor-cars, important despatches have been carried at unheard-of speed, and scouting has been done in a creditable manner. The future of the cyclist as a separate arm is assured, as is the necessity of the motor-car to follow the lightly-equipped wheelmen with baggage and munitions of war, to say nothing of adding to the ubiquity of officers commanding their operations.

Sequel to a Summons.

As reported last week, a summons taken out by Mr. Harveyson, a coach driver, against Mrs. Weguelin, for driving a motor-car furiously along the Portsmouth road, was dismissed by the Kingstons Bench. It seems, however, that the incident was not to end at this. Mrs. Weguelin had suffered considerable indignity at the hands of the not too chivalrous exponent of the much regretted ways of our forefathers. On one occasion Mr. Harveyson went so far as to lay hands violently upon the fair automobilist whilst demanding her name and address. A summons was taken out for assault, but the coach driver had the good sense to apologise fully. Mrs. Weguelin, with commendable forbearance, accepted this, thus closing a truly painful incident of the Portsmouth road.

The Speed of Motor-Cars at Darlington.

MOTOR-CARS and the speed at which they travel along the country roads was one of the subjects discussed by the Darlington Rural District Council on Monday last. These cars have so far been allowed to run in the rural districts in a truly "reckless fashion," as Mr. John Feetham, J.P., described their method of travelling. But it is doubtful whether motorists will in the future stop to read a poster informing them of the nature of the statute in "such case made and provided," which the Darlington Rural Council propose to display for the benefit of the motor-car owners in the district, and who are alleged to have been seen riding about the country at the rate of thirty miles an hour. There was some reason in the suggestion that persons in motor-cars should be requested to ride slowly through the villages, but this did not find favour as against the motion of Mr. J. Feetham that posters should be issued. Henceforward the countryside will be spoiled by the posters warning motor-car drivers of the perils they run when driving at great speeds.

'Ware Essex

WHEN Mr. Courtland took his seat on the Bench at Halstead Petty Sessions the other day he delivered a short homily on motor-cars, which their drivers would do well to keep in mind before touring in that part of Essex. Mr. Courtland, the Chairman of the Bench, remarked that drivers occasionally went beyond the fixed limit of twelve miles an hour. One he was told passed his residence the other day at a speed which must have been fifty miles an hour. The Bench were agreed they would do all in their power to stop this practice, as when going at an excessive speed it was impossible for drivers to pull up in order to avoid knocking down children or infirm people who might be in the way. There was a difficulty about the matter, it was true, because some people said the police were not able to judge of the speed. He, however, did not see why a policeman should not be able to judge speed as well as anyone else, and the Bench must take their judgment. Another difficulty was that drivers of motor-cars who came from a distance did not care when a policeman called out to them, for they knew they could go faster than he could. There was one thing, however, went quicker than the motor-car, and that was a telegraph message,

and he suggested the police should avail themselves of this means, and at once wire on to the next town. He did not know whether the expense would be allowed by the County, but their own Bench would be happy to guarantee the police any such expense incurred.

Fruit Transport by Motor-Car.

It is not only in the south that experiments have this summer been made with motor-cars for the rapid conveyance of fruit from the nurseries to market. Messrs. Watson and Co., of Liverpool, inform us that during the recent strawberry season they carried successfully daily for three weeks in one of their cars a load of 360 baskets of strawberries direct from the fields at Farndon and Holt, where they were picked in the morning, to Liverpool, a distance of nearly thirty miles. The car arrived in Liverpool between eleven and twelve o'clock every morning, so that the public were able to buy strawberries which had been picked but a few hours previously. The fruit always arrived in splendid condition, and the experiment was so satisfactory that it is to be repeated next season.

Mr. W. M. Letts.

CONGRATULATIONS to Mr. William M. Letts, of the Locomobile Company of America, on his marriage, which took place on Tuesday last. There are not many motorists in the London district who do not know Mr. Letts, who has done much to popularise the light steam car in England. It was about two or three years ago that he came to the front in the



motor world, he at that time having charge of the business of the British Motor Coupé Company. Early in 1900 he went out to the United States, and during the time he was there made a tour of the various automobile works, devoting much attention to American motor-cars—both petrol and steam. Returning about six months later, he accepted the appointment as sale manager of the Locomobile Company, since which time over three hundred of these now well-known steamers have been sold in England.

Cheap Sites for Motor Tracks.

A SOMEWHAT original suggestion was made lately as to a method for obtaining the necessary land for the suggested motor road—namely, to buy up an old canal! There are many miles of useless canals in the country, some of them half or quite dry, the rights over which could be obtained for a mere song, and which could probably be converted into practicable automobile routes more cheaply than such could be obtained in any other way, while the necessary bridges, etc., would be already in existence; whether broad enough or high enough is another question. We remember seeing the proposal to convert them into high-speed electric railways in a work of fiction some years ago, but the more recent idea seems almost practicable

enough to be considered by automobilists, if Mr. Behr is not beforehand with them. The average width of a canal is from 30 to 50 feet and depth 5 feet, which are not unfavourable dimensions for the use suggested; while the comparative freedom from sharp bends, and the fact that the routes were designed to connect important centres, supply additional arguments for the idea.

Fast Driving.

THE Reading Automobile Club has issued a warning regarding fast driving, which, while intended specially for its members, is well worthy of the attention of automobilists generally. "We particularly wish to urge our members," state the committee of the R.A.C., "to exercise great moderation in the pace at which they negotiate the town thoroughfares in particular. Hitherto we have had no disagreements of this kind, and we should all extremely regret to see one of our members taxed with want of care and consideration. Unfortunately, quite recently, several complaints have been made to the Committee about the reckless driving of some of our members, and the complaints have come, not from biassed and prejudiced individuals, but from the police themselves, who, it is universally acknowledged, have treated us with unwonted fairness and courtesy. As these complaints are undoubtedly justifiable, they can only, if continued, have one result, and we appeal once more to all our drivers to exercise that moderation in pace which every other user of the road has a right to demand, and which sharply defines the difference between the gentleman and the common scorchers. We would have our readers remember that the seconds saved by fast driving in towns will about equal the number of months during which the prejudice they cause will live."

An Innocent Admission.

THE reluctance of police superintendents to stand cross-examination as to the instructions they give to their subordinates has been a conspicuous and amusing feature in many recent cases, but chance may elicit what the art and skill of the Bar does not always succeed in doing, as appears from a recent incident at Frimley. A cyclist, with some friends, was coasting down a hill in that picturesque neighbourhood, when he was stopped by a constable and cautioned against "scorching." A chat with the representative of the law elicited the naïve confession that he had been put there to catch Count —, whose big car has attracted some attention in the neighbourhood. The cyclist, we understand, has heard nothing further of the matter, such trivial catches being beneath police notice in the excitement of the chase after higher game. In all seriousness, however, the laxity of the force in their ordinary duties consequent on their attention being monopolised by official schemes of persecution is arousing some comment in several localities at the present time.

The Roads of England.

THE creation and maintenance of roads was last week the subject of a deputation to Mr. Walter Long, M.P., at the office of the Local Government Board. Mr. Robert Todd (the chairman of the Roads Improvement Association), who was the chief speaker, said the deputation represented the following bodies, in addition to his own association: The Cyclists' Touring Club, the National Cyclists' Union, the Automobile Club of Great Britain and Ireland, the Scottish Automobile Club, and the National Traction Engine Owners' and Users' Association. He said their opinion was that it was time some alteration was made in the present way of making and repairing roads. Cyclists had sprung up in thousands, and of late the country had aroused itself from its sleep in the matter of mechanical traction. The present roads were not large enough for all this new traffic. He asked the Government to take steps to carry out the recommendations of the Royal Commission on local taxation to make one half of the cost of the roads a national charge, conditional

upon efficiency. In reply, Mr. Long said he had listened with interest and some wonderment, for some of their proposals were of much greater magnitude than they seemed to think. The main question would be one of finance, and if they wanted to drive it home to the Government they must first overcome that difficulty. He himself travelled about a good deal, and he did not think he was prepared to accept the condition of the roads as they had been described. He did not hesitate to say that they had been enormously improved in the last twenty years, and he did not think the authorities deserved the blame which had been cast upon them. In any question of widening it must be first clear that sufficient cause existed, and then he was not quite certain that the ratepayers would provide the money for the purpose, while he did not think the State would provide even a small portion. He could not help thinking that sooner or later the growth of self-propelled traffic would require that special steps should be taken, but these would have to be largely at the cost of those who used these vehicles. He was bound to say that he had received many complaints as to those who used cycles and motor vehicles, and who made no contribution to the maintenance of the roads which they injured. Finally, he expressed his willingness to facilitate in any possible way the use of new means of transit. He would consider what had been said, and he asked the deputation to consider what he had said in reply.

Five Years Since 1896.

On August 15th, 1896, Sir David Salomons, president of the Self-Propelled Traffic Association, which is now merged into the Automobile Club, wrote to the papers expressing the gratitude of his Association to those who had helped the passage of the Locomotives on Highways Bill, 1896, into an Act, and urging motorists to act with prudence and consideration. Five years have nearly passed, and it must be recognised by all fair-minded people that automobilists have justified the adoption of that measure. There have been none of the murders on the highways that were predicted if motor-cars were not made to crawl behind the red flag; and altogether the position is very satisfactory to those who, like Sir David Salomons, spent long nights and days in convincing legislators that motorists were not more terrible than other human beings.

The Press and Automobillism.

AUTOMOBILISM has been a boon to the press. The mishaps of motor-cars have filled many a corner, and the demonstrations of the Club, the exhibition, and the letters from prejudiced opponents and enthusiastic supporters of the automobile, have provided column after column of good reading. When a provincial paper is hard up for matter it generally secures a motor-car ride for a representative, and then the column comes along without difficulty. Most of these journalists, who profess to start with fear and trepidation, return thoroughly converted to the pleasures of the motor-car. There is scarcely a provincial journal of any standing which has not published such an article during the summer.

Another Conversion

WHERE newspaper scribes are inclined to show an antipathy to automobiles, motorists should endeavour to see to their education. A writer in the *Surrey Comet* recently thought fit to lecture the drivers of the many motor-cars passing through Kingston. The result was a call from Mr. Montague Grahame-White, who challenged the erring journalist to a practical demonstration. The scribbler mounted the car, which soon attained a pace that "made tears stream from the eyes," but he confessed "the sensation was a very delightful one"—an impression which all who try the new means of locomotion gather; hence the growing popularity of the motor-car.

Dirty Streets.

AT a time when scientists are discussing the ravages of consumption and attributing its prevalence to the wretched spitting habits of many individuals among our millions, we may be pardoned for suggesting that the effect of horses on the public health of our great cities might well be considered. They are mainly responsible for the dirt of our streets, and we have it on the authority of Mr. T. Blashill, F.R.I.B.A., the late superintending architect to the London County Council, that all other materials in the roadway are of small account "compared with the great bulk, which was simply from horses, worked up by wheels into slush in wet weather and ground into dust in dry." This is a point which should be remembered by those who are disposed to thwart the progress of the automobile. Not only will the general introduction of the motor-car into great cities facilitate rapid transit from one locality to another and ease the congested character of the public thoroughfares, but it will prove one of the greatest aids that sanitary science has received for at least a decade.

Motor-Cars to the Rescue.

IN our last issue we referred to the good work done by motor-cars during the recent heat wave in New York in conveying people prostrated by the heat to the hospitals. That the authorities of the latter fully appreciated the services is clear from the following extract of a letter sent by the Superintendent of the Roosevelt Hospital to the Locomobile Company,



7 AUTOMOBILE SNAPSHOTS FROM AMERICA.—AT WILLETT'S POINT, LONG ISLAND. [Automobile Magazine.]

of America:—On behalf of the Trustees of this hospital I wish to express to you their grateful acknowledgment of the very valuable assistance rendered the institution by your company on the occasion of the period of excessive heat with which this city was afflicted during Tuesday and Wednesday, July 2nd and 3rd. The hot spell of that time rivalled that of the year 1896, when, for the first time in the history of the hospital, it became needful to not only secure the assistance of the patrol wagons of the police department in bringing cases of heat prostration to the institution, but to impress grocery wagons and delivery vehicles of various kinds into the service for a similar purpose. The necessity for doing so on the recent occasion was happily obviated by the very generous response made by your company for the use of surreys and the further offer of the New York Electric Transportation Company, to place at the disposal of the hospital such of its vehicles as were required to enable the institution to effectively perform the work of its ambulance service. The work done by the "Locomobiles" was really a marvel. I was informed that one of your surreys brought in thirty-seven patients on the first day of the hot spell. Such a record could not be equalled by one of our horse-drawn ambulances.

The Storage of Petrol.

AN American motorist sends some interesting particulars to a transatlantic contemporary of a means he has adopted of storing petroleum spirit: "I procured a strong galvanised iron tank having a capacity of 120 gallons. Into one side of this I inserted three pipes; one an inch and a quarter in diameter, through which, by means of a funnel and an ordinary oil pump, the petrol is drawn from the barrel and conveyed into the tank. Near this is a small quarter-inch pipe. Then a three-quarters inch pipe extending down within half an inch of the bottom of the tank. All three of these pipes are screwed in, and made secure against leakage under pressure, and each has a globe valve selected and tested with care to make sure that it is perfect and will not leak under pressure. I then buried this tank about eighteen inches under ground in front of my stable, the afore-said pipes being long enough to extend up six or eight inches above the surface. A piece of rubber hose is attached to the three-quarter inch petrol pipe, and a box with hinged cover on top, with hasp and staple for lock, encloses all these pipes. Into this tank I put two barrels (something over a hundred gallons) of petrol at one filling. When I wish to draw out petrol, I simply attach an ordinary bicycle pump to the air pipe and force air into the tank until the petrol runs out. This is quickly and easily done, and the entire arrangement is found to be both a safe and convenient way of storing petrol, and is secure against a possibility of waste by evaporation, provided the valves are kept closed when not in use, and the enclosing box kept securely locked."



AUTOMOBILE SNAPSHOTS FROM AMERICA.—BEGINNING OF JERICHO PIKE, LONG ISLAND. [Automobile Magazine.]

A New Danger.

IN view of the recent unfortunate accident at Messrs. Carless, Capel, and Leonard's Works, at Hackney Wick, a word of warning given on the subject is of especial interest. At the inquest this week the chief officer of the County Council Public Control Department, Mr. Alfred Spencer, considered that the safest way to store spirit was by underground tanks, as insisted on by the County Council. He added, however, that the flood which was the cause of the accident disclosed a new danger with the storage of spirit, and that the danger of flooding sunk tanks would have to be met and guarded against.

A MOTORIST was recently compensating the mother of a boy whom he had knocked down and injured with his motor-car by giving her half a sovereign, when he was seized by a policeman and charged with having been drunk whilst in charge of the car. To this charge he had to answer at the City Police Court the next day, and, though he repudiated the statement that he was drunk, the Bench fined him the maximum sum of 40s. and costs.

DERBY TO YARMOUTH ON A WERNER BICYCLE.

SEEING a letter of Mr. A. L. Benett's in a recent issue of the *Journal*, describing a very good run on his Werner, I thought it might be of interest to many to know what can be accomplished on a motor-bicycle. On Saturday, June 29th, I started from Derby at 6 a.m. for Yarmouth, riding through Nottingham, Grantham, and Spalding, arriving at King's Lynn, ninety miles, at 12 p.m. Making a rest there of three hours, and after a good lunch at the Duke's Head, I left at 3 o'clock, passing through Swaffham, Dereham, and Norwich, arriving at Yarmouth at 7 o'clock in the evening, my counter registering 166 miles. The only trouble I had was near Norwich, when the engine began making loud explosions. On examination I found the platinum tip had come off the trembler. Having a spare one, this was very soon put right. On Sunday, after breakfast, I rode all over the town, leaving there at 10.30 for Cromer, where I arrived at 12 o'clock after a splendid run on very good roads. After looking round the place for two hours, I started for Hunstanton, through Sheringham, Blakeney, and Wells, arriving at 7 o'clock, the only trouble being a puncture in the back wheel near Blakeney, which caused a long delay, for, after mending the puncture and on getting on again, the cover blew off and made a big burst, a hole three inches long. Leaving the machine at a fisherman's cottage, I walked backed to the village, three-quarters of a mile away, to find a bicycle repairer. He happened to be in chapel, causing me half an hour's wait. He turned out to be the village boot-mender, and a very obliging fellow he was. He had some prepared rubber sheeting, and I was soon put right again and on the way to Hunstanton, where I arrived at 7 o'clock, eighty-three miles run, and put up for the night.

The next morning was very black, and heavy rain had fallen in the night. I started at 10.30 for Lynn. After riding about six miles the rain began to descend, and through the Sandringham district it came down in torrents. However, the motor still went on, and I got into Lynn about 12 o'clock, and called on Mr. Morris, who kindly lent me the use of his bath-room and a new pair of dry stockings and leggings. As the rain continued, I put the machine in the train and returned home. Here is where the motor-bicycle comes in—it only cost 4s. to Derby.

At Derby Station I got on the machine, and it went off right away, after its thorough wetting. There was a very strong head wind all the way to Yarmouth, and this caused my main tank to give out at sixty-six miles instead of eighty. In one case the Werner has run eighty miles on one tank, and in another case eighty-three miles. I have now run the machine 1,300 miles, and have had practically no trouble.

J. SIMKISS.

It is reported that Charron has sold the racing car he used in the Paris-Berlin contest for £3,200.

It is but a little while since the motor-car was of a clumsy and primitive character, handled only by a few enthusiasts and regarded rather as a curious toy than as a vehicle promising much usefulness. Now it is familiar everywhere; the work of the construction has become an important industry; it is used for business as well as pleasure, and the prospect of its wide employment exceedingly promising.

THE British Automobile Commercial Syndicate, of 97 and 98, Long Acre, has just put in a large hydraulic lift, which communicates between the four floors used as show rooms. A well equipped workshop has also been established on the top floor, where repairs of all kinds can speedily be effected. The Syndicate have just received the large Mors car in which the Hon. Evelyn Fitzgerald and Lady Rosslyn met with an accident recently. The car is in a fearfully smashed condition and will take from six weeks to two months to repair. It speaks well for the repair department of the Syndicate that they are able to undertake such a work.

END TO END ON A STIRLING PARISIAN PHAETON.



ON Friday, July 26th, I decided to run over what I believed to be the most trying course for a vehicle of any description—namely, John o' Groat's House to Land's End—in order to put to the test a light motor-car which my company is placing on the market, and which will be known as the "Stirling Parisian" phaeton. Next day a stock car was oiled up and despatched by train to Wick, where I followed it on Monday morning, after telephoning Messrs. Peter Lee and Sons, High Street, Glasgow, to have a supply of petrol for me at Perth and Carlisle. After an early breakfast on Tuesday (July 30th), John o' Groat's was left behind in a morning mist. The roads had a thick coating of dust, for rain had not fallen there as it had done the previous day in the south. The surface was far from good, being covered in many places with loose stones. Especially was this the case on the dangerous hills at Dunbeith and Berriedale, the latter having a gradient of 1 in 9. At Mound Station a wrong turn was taken, which sent us round by Lairg Hotel on our way to Bonar Bridge, adding ten or twelve miles to the journey to Tain, which was reached in time for lunch. Thereafter we drove on through Dingwall and Beaulie to Inverness, which was reached at six. Passing through Dingwall rain began to fall heavily, and continued until within ten miles from Inverness. After dinner, the weather looking more settled, it was decided to continue the journey, and a start was made at eight o'clock. The city had scarcely been cleared when the rain again made its appearance, and for the next fifteen miles we had literally to plough our way through soft, spongy clay and mud of a dangerously greasy sort. The low gear was inevitable if the car was to be kept parallel with the road; only occasionally was the high gear slipped in when the road surface became harder. Darkness coming on, and neither the roads nor the weather improving, it was decided to stop for the night at Freeburn Inn, 181 miles having been covered during the day.

Leaving Freeburn at 7.30 a.m. on Wednesday, we travelled well over roads still wet and having some stiff gradients, on through Kingussie and over the Grampians, the summit of the road being 1,500 ft. above sea-level. A fine run down the other side was obtained in spite of the loose state of the road. The crawling pace of a train just here on the Highland line, drawn by two powerful engines, gave us a reminder of the steepness of the grade. Some time before the summit was reached the sky was clearing, and by and by the sun shone out brilliantly and continued with us as we quickly and in succession passed through Blair Athole, Killiecrankie, Pitlochry, Dunkeld, and into the fair city of Perth for lunch at the Station Hotel. The petrol store was renewed here, and at about 3.30 a start was made for Edinburgh. Burntisland was reached about six and the Granton Ferry crossed at 6.30. We reached the Royal Hotel, Princes Street, Edinburgh, shortly after seven and in time to keep an appointment at 7.30. During the last two hours rain had fallen plentifully, and Princes Street was almost deserted when we turned into it after the long steep climb up Pitt Street. Distance for the day, 140 miles.

Edinburgh was left next morning at five o'clock. The rain had ceased but the roads were heavy in places. Conditions, however, improved as Biggar and Abington were passed, the fine Glasgow and Carlisle road being struck at the latter place. After passing through Crawford and Elvinstown the ascent to Beattock was commenced, followed by a flight down the gentle slopes on the south side. The road continued good through Lockerbie, and Carlisle was reached at 10.50, the run of 98½ miles having been done on one charge of the petrol tank, which holds 21.5 gallons. After a good meal and replenishing the oil tanks, Carlisle was left about 12.30. A few miles out we met what appeared to be a Wolseley car making its way north. The road over Shap Fells was in fair condition, and it was only necessary to get down to the low gear on nearing the summit, the rest being easily surmounted on the second speed. Weather and roads

continued fine through Kendal, Milnthorpe, Carnforth, and Lancaster, but rain and wet greasy roads were again encountered ten miles out of Preston, the stopping place for the night. Run for the day, 186½ miles.

Leaving Preston after an early breakfast on Friday, having had the tanks refilled the previous evening, we travelled by Wigan and Warrington, after which the road was somewhat difficult to find, being without the strip map by Gall and Inglis for this portion of the route. The road taken was through Northwich, Sandbach, Stafford, and, as I had an appointment to keep in Birmingham, the road through Walsall, instead of the more direct route, was followed. After a stay of 45 minutes we passed on to Bromsgrove, where a late lunch was partaken of and the car oiled up. Good running was made through Worcester on to Gloucester, and thereafter to Bristol, which was reached shortly after nine, putting up at the Royal Hotel.

Making an early start on Saturday morning, the last lap of the journey was entered upon. Some trouble was experienced in getting on to the right road out of Bristol, we going several miles out of our way through misdirection. After Bristol the roads were not of the best, and further south, where traction-engine work is common, they were badly cut up. They, however, improved considerably as Bridgwater was approached. We stopped to shake hands with Mr. Roberts, coachbuilder, who is an enthusiastic motorist, and, in addition to his own business, undertakes the overhaul of motor-cars of every description. Although it was our intention to spend only a few minutes here



JOHN O'GROAT'S.



LAND'S END.

we found an hour and a half had been absorbed in looking over Mr. Roberts's well-equipped works and showrooms. The roads were excellent to Taunton and fair to Exeter. Leaving Exeter a sharp thunderstorm was experienced, and we had to face two hours of heavy rain as the Devonshire hills, some of which are as trying as those in the far North of Scotland, were climbed. The weather thereafter cleared and, although the roads were heavy, no more rain was encountered on the journey. The route now lay through Launceston and Wadebridge to Truro. After supper the journey was continued on to Penzance, where most good people were evidently asleep, and after leaving the well lighted streets we plunged into the blackness and darkness of the road out to "the end." The good folks of the house had turned in, but very quickly "turned out" on hearing the sound of our car, and received us with every hospitality, and thus the long journey was ended. Distance for the day, 199½ miles. During the whole journey of 900 miles not a bolt or nut worked loose. The travelling time of the trip was 59¼ hours, and the petrol consumed twenty-eight gallons. The motor required attention only on one occasion; this was at Tain, where the engine did not start up briskly and we washed out the inlet valve, in which we found a little grit. Although the car is fitted with both tube and electric ignition, only the latter was used. The sparking plug was never cleaned or even taken out for examination until a few miles south of Launceston, when a few misfires

were for the first time observed. This was after 817 miles had been covered. On inspection, the plug was found "sooty" but otherwise in perfect condition. The cooling water used was four gallons. A word should be said of the tires, which were Dunlops. They went through the entire journey without a puncture, and were not even reinflated once by the way.

JOHN STIRLING.

CONTINENTAL NOTES.

BY "AUTOMAN."

THE lunches at the A.C.F. Club House in Paris seem to be becoming more and more popular; it was most difficult to get a place the other day, in spite of the season being over. I noticed one of the Mors brothers, who confirmed the fact that his firm have been inundated with orders since his success in Berlin. I also noticed M. Falconnet, M. Cuenod, the President of the Swiss Club, and many other familiar faces.

WHILST driving through the Bois de Boulogne I met Captain Laycock and Fournier in a dark green car with a large tonneau body, the whole looking very newly painted, and seeming to have no resemblance to the dusty, oily racing car which I had last seen as it was steered victoriously by Fournier to the winning post on the Berlin racecourse. On making inquiries from M. Mors, however, I was informed that this was the famous car just out from the carriage-builders' hands. I learned, further, that Captain Laycock had paid a visit to M. Santos-Dumont to make inquiries as to the cost of a navigable balloon, so that it is just possible that this first-class sportsman may come sailing over the Channel shortly with aerial navigation added to his other pastimes.

MAJOR KREBS, of the Panhard and Levassor, will, it is reported, shortly produce a new petrol motor of such extraordinary lightness that the weight per horse-power will be only 5 kilogrammes. As Major Krebs formerly worked with the brothers Renard, the motor, it is believed, is intended for aerial navigation purposes.

A MOTOR-CAR to run on a railway is a seeming paradox. A French railway company is, however, giving the matter serious consideration, and has built several vehicles of a new type. Each of these is practically an entire railway train on a small scale. The same vehicle contains the engine, compartments of three different classes, a luggage and a guard's van, the total length being about 88½ feet. The engine is a steam motor of 125 h.p., capable of propelling the vehicle at an average speed of some thirty-eight miles an hour with its full complement of eighty passengers. The peculiarity of the new railway motor-car is that the engine room is in the middle. The driver stands on a box raised sufficiently above the roof of the rest of the vehicle to allow of his obtaining a full view of the line, front and back, and can drive the car either way. The Northern Company is experimenting with the new vehicles on the line to Pontoise, and contemplates eventually putting them into general use for the local service on its Paris suburban system, in preference to the ordinary trains, as a considerable saving of expense will, it is estimated, thus be realised.

AN exemplary punishment has been meted out by the Correctional Court to a French motorist who knocked down a foot-passenger while driving a car in the Avenue de la Grande Armée, Paris, with fatal results. The automobilist pleaded that the accident was due to the rashness of the deceased in crossing just in front of the car. While not entirely rejecting this explanation, the Court, nevertheless, sentenced the motorist to two months' imprisonment, ordering him to pay £2,400 damages to the widow of the dead man.

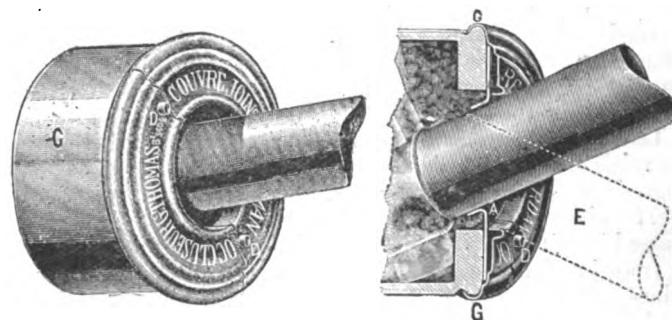
VARIOUS localities have been suggested by French automobilists as suitable for the construction of motor-drômes on a large scale, but all have up to the present proved on investigation

to be possessed of disadvantages, such as remoteness from Paris or too flat a surface, which more than outweigh considerations of low price. A more promising site has, however, recently been suggested. Report has it that the Duke of Parma is willing to reserve for motor-racing a private carriage-drive, twenty miles in circumference, which runs round the superb park of the famous castle of Chambord. Moreover, that on occasions when races are held there grand fêtes would be given in the Château. The road itself is described as admirably fitted for the purpose to which the Duke of Parma is believed to be willing to devote it. All that would be required, the advocates of the scheme say, would be to create a few artificial hills, and to increase slightly the gradients already existing.

THE Motor Club of Lyons held a series of kilomètre speed contests with flying start a few days ago, but no new records were set up. In the class for cars of over 20 h.p., Deydier was first on a 24 h.p. Audibert-Lavirotte car in 1min. 7sec. Rivat was the winner in the class for cars of from 8 to 12 h.p., he covering the kilomètre on a 12 h.p. Panhard in 1min. 3sec. In the category for motor-cycles of over 3 h.p., Germain on a 6 h.p. tricycle covered the kilomètre in 46½sec.

THE THOMAS UNIVERSAL-JOINT PROTECTOR.

THE universal joints employed on cars of the Renault and Darracq type have so far been open to the double disadvantage of requiring unsightly and ineffective leather washers, not too well adjusted, and thus open to the entry of dust and mud. M. G. Thomas, of Agen, France, whose name is associated with more than one invention for motor-cars, has



FIGS. 1 AND 2.

recently brought out another ingenious little contrivance for the covering of universal joints, of whatever form, which combines the advantages of simplicity, elegance, and interchangeability. The device, which is both dust and watertight, consists of one rigid piece of metal, box-shaped and nickel plated, which fits to

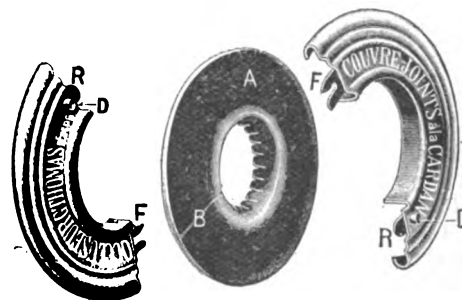


FIG. 3.

the fixed parts of the joint, and into which is inserted a pliable or elastic piece of leather, india-rubber, or felt, hidden in the rigid piece in such a manner that the movable piece of the joint retains the freedom of its movement, yet is hermetically sealed against all exterior and detrimental agents. A general view of the protector is given in Fig. 1, while Figs. 2 and 3 show details.

BELT v. GEAR.

THE ADVANTAGES AND DISADVANTAGES OF BOTH SYSTEMS.

TO the prospective purchaser the first serious question will be, "Shall I buy a belt or gear driven car?" As there is something to be said for each system, the writer will just touch upon the most important points.

Belt-Driving.—Belt-driving may be divided into two divisions—(a) fast and loose pulleys, (b) jockey pulley. The first of these is the commonest, and, speaking generally, the most satisfactory; in the second, where a jockey-pulley is employed to tighten the belt, care must be taken about changing speeds or broken belts will inevitably result. There are also cars where belt and gear are employed, and these will be discussed later. The advantages of belt-driving are—(1) it is practically noiseless, (2) ease of manipulation and general simplicity. The disadvantages of belt-driving are—(1) the belts are liable to slip, (2) or break, since in a large number of cars offered to the public the belts are of insufficient width for the power they transmit. Referring to the above-mentioned advantages, noiselessness is a great point in favour of a car. As regards manipulation, most of the readers of the *Journal* are probably aware how extremely simple it is to change speed on a Benz car. The above are really the only two advantages which can be claimed for the belt-driver; and now as to the disadvantages. Belts slip. In wet weather leather belts are simply wicked in this respect, unless they are very adequately protected; and when a belt really does slip the only satisfactory method of preventing this is to cut a piece out, which is a truly delightful job to perform on the road with the rain pouring down. They break—well, one is not surprised to see that a belt breaks when it has to transmit a good deal more power than it is intended to. A belt to transmit, say, $4\frac{1}{2}$ h.p. should not be less than three inches broad. The slipping tendency of belts depends largely on the material the belt is made of. A very satisfactory belt will be found in Dick's belting. This belt grips at a much lower tension than most, and consequently there is less loss of power. If a belt-driven car is to be satisfactory, it must not weigh more than 6 or 7 cwt., the belts must be adequately protected, and of a suitable size for their work.

Belt and gear driven cars.—These may be divided into two divisions—(1) where the belt takes the place of the clutch and takes the drive from the engine to the gear box; (2) where the central of three pulleys is loose, the other two being in gear with the back axle through different sized spur wheels. For the former there is really very little to be said—perhaps there is less chance of damage to the gear, as if the speed is changed without throwing off the belt it will probably slip and thus save the teeth of the gear wheels. The latter system is extremely simple, as the changing simply consists of pulling a small handle into one of three positions, the middle one being the out of gear position. This system is very successfully used on the New Orleans, Pieper, Sports, Simplex, and other cars. Of course in this system, as in the others, the belt should be properly protected.

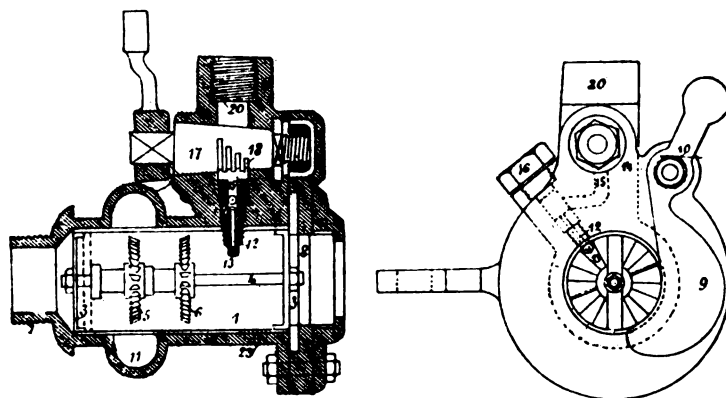
Gear-driven cars.—People very often assert that a gear-driven car is very noisy. So it is, sometimes. But does all the noise come from the gear? The writer is very nearly certain that in cars like the M.M.C. voiturette, York, and others a considerable share of the racket is accounted for by the high-speed engine. Take the Daimler car, for instance; its normal speed is about 850 revolutions; this car is noisy, but nothing out of the way, on the low speed up hill, and what car is not? It is comparatively silent, however, on the fourth speed. Another source of noise lies in the fact that a good many car owners fail to look after their gear properly. The gear-driven car is an all-weather car, and in that is an inestimable advantage. Clutches, it is true, do slip, but not if they are properly constructed and the tension spring or springs properly looked after. The best gear is, in the writer's opinion, the Panhard. Changing speed is more or less of an art; it is soon learned, however, and once acquired is not forgotten. There are several systems of gear-driving:—(1) The Panhard;

(2) improved (3) Panhard; (3) clutches. Everyone is probably familiar with the Panhard gear, so the writer will not discuss it. As to the improved pattern, it is questionable whether it is an improvement. The wheels are always in mesh, and locked to the axle by a sliding key; this, to the writer, seems a wasteful type of gear, owing to the number of idle gears. Sometimes, also, they do not change readily. Gearing by clutches is similar to the last named, only clutches are employed to lock the wheels. This type of gear is extremely simple to operate.

In conclusion, the writer hopes that he has made the various points clear, and that the prospective purchaser may not be any longer in perplexity. C. A. R.

A NEW NON-FLOAT FEED CARBURETTOR.

ONE of the novelties at the recent exhibition at the Agricultural Hall was a new non-float feed carburettor, which is being introduced into this country by Autocar Supplies, Limited, 66, Great Russell Street, London, W.C., and of



FIGS. 1 AND 2.

which we are now able to give illustrations. The petrol enters the carburettor at 20 from a higher level (the reservoir), and is regulated by the tap 17, which is grooved at 18, and connected to a governing handle. The air enters at 8, and the amount once regulated by the slide 3 requires no further attention. The suction of the motor causes the petrol to gush up through 13 and against the fans 5 and 6, which revolve in opposite

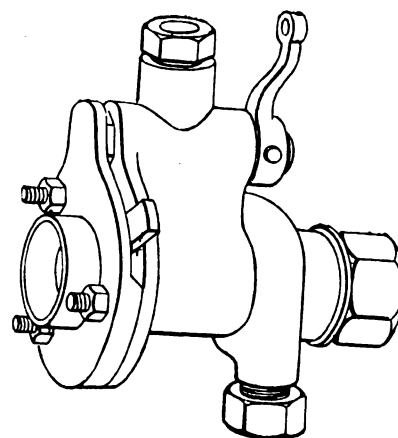


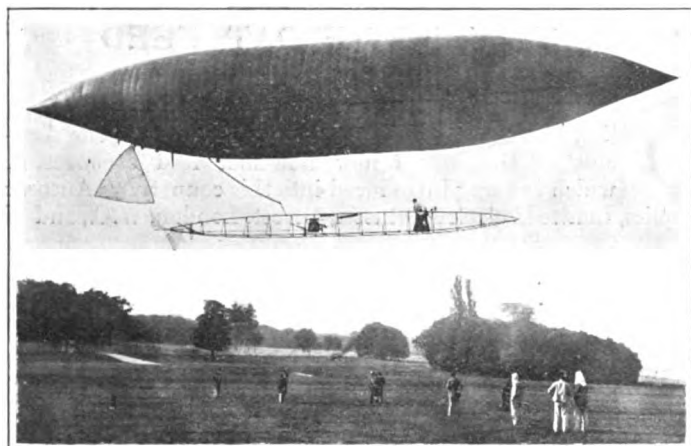
FIG. 3.

directions. The spirit, thus vaporised and mixed with air, passes to the explosion chamber of the motor through the opening 7, through metallic sieves, which have the effect of keeping back any spirit which may not have been thoroughly vaporised. A small overflow hole 23 prevents the flooding of the carburettor in case the tap 17 should not be shut. A heating chamber is provided at 11, this being connected by a curved pipe to the exhaust.

M. SANTOS-DUMONT AND HIS NAVIGABLE BALLOON.

BY AUTOMAN.

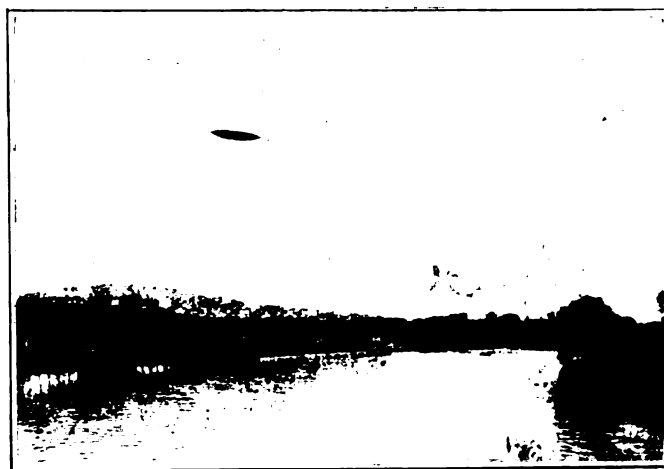
CROWDS of people are trooping out daily to Suresnes in anticipation of seeing M. Santos-Dumont take a trip in his navigable balloon. Not only are the grounds of the Aero Club black with visitors, but the hills and bridges and any point of vantage in the neighbourhood are also lined with spectators. Particularly noticeable amongst those who visit the



THE SANTOS-DUMONT NAVIGABLE BALLOON AT LONGCHAMPS.

Aero Club are many well-known automobilists. I saw the Marquis De Dion, M. Serpollet and his wife, Captain Laycock, Fournier, and many others, all of whom expressed their admiration for the perseverance of M. Santos-Dumont, who has done so much to solve the problem of aerial navigation. The balloon and all the apparatus are so simple that the first thought that strikes everyone is, Why has it not been done before? As to the balloon it is cigar-shaped, about twenty metres long, and containing 550 cubic metres of hydrogen gas. To this is suspended by means of cords and piano wires a sort of light triangular keel, made of three strips of wood bound together by cross stays and coming to a point at each end, the weight being about a cwt. In this keel a 16 h.p. four-cylinder Buchet air-cooled motor is fixed; in connection with the engine is a long shaft projecting out past the pointed end of the keel, and having at its termination a screw propeller, very much like the ordinary propeller of a steamship, but four metres in diameter and made of wood and silk; this is the stern of the keel. Towards the bows there is a basket in which the navigator stands, and near which are attached all the necessary cords for manœuvring the whole apparatus. Between the keel and the balloon at the stern end a rudder is suspended, which, being made of silk stretched on a wooden frame, very much resembles a sail. The cords from this rudder pass forward along the balloon and descend to the steering wheel just in front of the basket, and by the side of which is fixed, not a compass as in ships' navigation, but a barometer to show at what height the balloon is. A clutch is introduced between the engine and the propeller shaft by means of which the propeller can either be stopped or started without stopping the engine. Curiously enough, the clutch is kept out of gear by the elastic part of one of Sandow's chest expanders. It has been said and repeated in nearly every paper which has commented on the subject that the machine is lighter than the air. This, however, is a mistake. I have it from M. Santos-Dumont himself, that when ready to take flight, the machine, ballast and occupant weigh some thirty pounds more than the air, and therefore, rest on the ground until the propeller is put in motion; the power produced by the propeller turning against the air overcomes this thirty pounds and gives a push of an additional twenty pounds as far as he can estimate.

To understand the principle that M. Santos-Dumont has established readers of the *Journal* must imagine the balloon already in the air, and in a horizontal position. The navigator has, however, a movable weight, which is movable in the direction of the length of the machine. If he wishes to travel horizontally he puts the weight in such a position that the balloon will be horizontal to the earth's surface. Should he wish to rise, the weight is drawn backwards towards the stern, so that the bows of the air-ship point upwards. Should he desire to descend, the weight is run forward and the bows promptly point downwards. To the uninitiated this may seem comparatively unimportant and a little explanation is therefore necessary. When an ordinary balloon is sent up it is of course much lighter than the air, and would continue ascending indefinitely if it were not stopped at a desired altitude, by the opening of the valve to let out the hydrogen; the balloon then begins to descend. As it is quite impossible to balance it accurately in the air, and as the hydrogen condenses slightly and loses its pressure, the balloon then takes a descending course, and to stop it descending it is necessary to throw out ballast, when the balloon begins to reascend and the same process has to be constantly repeated. Each time the distance between the points of change of direction becomes greater, until finally all the ballast has been thrown out and the balloon has to redescend to earth by means of the escape of hydrogen. All this limits the time in which a balloon can be maintained in the air, and renders it impracticable for travelling purposes. It will be remembered, however, that M. Santos-Dumont makes his balloon ascend or descend simply by means of the propeller and balance weight, and loses practically no hydrogen, so that the time he can remain in the air depends upon the amount of petrol he can carry to keep his engine working. In his own words he has already been up in the air for 4½ hours, without throwing out any ballast or losing any gas, and maintaining the whole time a height of 300 yards; this, too, in the morning when the sun was gaining force, and therefore expanding his hydrogen. M. Santos-Dumont gave me all these details at his beautiful home on the Champs Elysées, where I found him, accompanied by his faithful henchman, M. Emmanuel Aimé, busy opening letters of congratulation. He is quite a young man, being only twenty-eight years of age, and the son of a rich Brazilian coffee planter. He went to Paris some five or six years ago with a fixed idea of making a flying-machine. This is the fifth which he has made since then, all of which without exception have been successfully navigated by him,



THE BALLOON CROSSING THE SEINE AT 4.30 A.M., JULY 29.

though not, of course, nearly as successful as the present one. "It is not a question of invention," said M. Santos-Dumont, "but of careful progressive experiment, and now that I am able to actually experiment in the air, I shall be able to learn all its secrets. My balloon is a combination of the balloon and the aeroplane: the cigar shape of the envelope gives it a tendency to float in the air. Since I have made my successful flights, I have

received many offers from engine builders prepared to make me motors far lighter than the one I am employing, and I have no hesitation in saying that as far as use in war is concerned, I am ready. You can imagine how convenient it would be to take a flight in one of my machines over the enemy's territory and see the exact disposition of his forces. Then, again, if aerial navigation is a success, and I see no reason why it should not be, the actual authors of a war will be themselves in personal danger, for nothing would be easier than to send a flying machine to hover over a palace and drop a bomb on the originator of a conflict." "But what about the wind?" I asked. "The wind," said M. Santos-Dumont, "is a great difficulty; but then you must not forget that the wind is only in layers, so to speak. If you send up twenty-five balloons in the same spot at the same time, no two of them will be blown in the same direction, and therefore I have only to ascend or descend to find a favourable wind. The dew, however, is the great enemy of the flying machine. Imagine the whole surface of my balloon being wet with heavy dew. It would make a difference of more than a cwt. and bring me down. I shall, of course, continue my experiments, though I do not claim any great invention. Still, I have been the first to use the petrol engine, and I well remember how I was ridiculed when I suggested applying a petrol engine so near to a mass of hydrogen gas. I was the first, too, to use piano wires for the suspension of the keel, and this is a great advantage from the point of view of weight and of resistance to the air."

AN automobile club has just been formed at Liepzig, Germany.

MR. C. J. FIELD, of the De Dion-Bouton Motorette Company, New York, has, it is stated, ordered a 24 h.p. Napier car.

THE City Council of Rochester, N.Y., has passed an ordinance limiting the speed of automobiles to six miles per hour within a radius of one mile from the centre of the city.

MR. CHARLES G. WRIDGWAY, who is well known in this country, and who has been connected with the De Dion-Bouton Motorette Company of New York for the last eighteen months, is now the assistant general director of the company, he coming next to Mr. Cornelius J. Field, vice-president and general manager. Those who are acquainted with Mr. Wridgway will congratulate him on his advancement.

THE American Bicycle Company, who recently purchased from Messrs. Julius Harvey and Co., 11, Queen Victoria Street, London, E.C., an English-made steam-motor van, have now decided to build heavy cars, and have, we understand, just put in hand a dozen large motor-wagons. Messrs. Harvey, in addition to some good orders for motor-wagons, have just shipped to the East a mile of portable railway, with trucks, etc., and a steam road roller for the Government of Perak, which latter, although not a racer or motor within the meaning of the Act, certainly comes under the head of self-propelled vehicles.

THE Steel Cushioned Hub Company, of Worcester, Mass., are the makers of a new hub for automobiles and other vehicles which they call the Steel Cushioned Hub. It consists of a hub shell with flanges a little larger than the ordinary, which is engaged by a cone that takes hold by means of a clutch. This cone acts on another inner cone, which acts on a strong spiral steel spring encircling the axle. The hub proper never comes into contact with the axle. It is claimed that the device relieves the axle from the shocks due to bumpy roads and obstructions.

THE Duryea Co., of Reading, Pa., U.S.A., are using a special form of lock-nut in their motor-cars. It consists of a nut provided with two or more prongs projecting parallel to the bolt and adapted to be held from rotation by a cotter-pin placed through the bolt. This construction permits a half, quarter, or sixth turn of the nut (depending upon the number of prongs) to be made when adjustment is necessary, after which the cotter-pin may be replaced and further movement in either direction is impossible. The company state that they have used many forms of safety devices in the past ten years, and that this one meets the conditions more fully than any other.

CORRESPONDENCE.

GREASE TROUBLES.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—In response to Mr. Frank Apperley's complaint, I have exactly the same experience of the grease wasting through the bearings of the gear box of my Darracq. I am at present trying Wm. Lea's, of Berry Street, Liverpool, grease, and so far I find it has a silencing effect on the gear, and think it is a good thing, but it will have to be greatly reduced in price if taken up generally.—Yours truly,

F. COOP.

AERIAL NAVIGATION.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—The interesting letter by Sir David Salomons in your last issue opens up a wide field for careful thought, for unquestionably M. Santos Dumont has furnished a valuable contribution to aerial navigation, whether we accept the proposition that the future air-ship will consist wholly or in part of a balloon or not.

As a very humble student and experimenter in this fascinating branch of engineering, may I solicit the favour of a little of your valuable space for a few remarks thereon, which, although necessarily rather incoherent and scattered, yet may perhaps assist others who, like myself, have endeavoured to solve the knotty problem, and in a slight degree supplement Sir David's able remarks thereon?

It is no doubt superfluous to ask the question, but has Sir David access to the back volumes of that well-known store of information, *The Mechanics' Magazine*? If so, he will find an illustrated description of Mr. Henson's flying machine, which was, considering the times, a clever attempt to press the steam engine into service with a special boiler and an air-cooled condenser. The scheme failed, I believe, through the boiler, but in many respects it foreshadowed Sir H. Maxim's steam aeroplane.

Much information may be gained by, and great credit is due to M. Santos Dumont's perseverance, but, as far as my few experiments have led me to form an opinion, I consider that for a practical machine the aeroplane must eventually supersede the aerostat, and it may be questioned if Professor Langley is not, after all, nearer the solution of the problem. If I may be permitted to submit a scheme, may I suggest the future air-ship should consist of a light hull similar to Professor Langley's model, with an aeroplane on either side and a central one disposed like a "centre board" to preserve the equilibrium? The question of disposing the propellers is the most difficult part of the whole matter, for, if not carefully arranged, the balance of an air-ship may be easily upset entirely by the unequal forces set in motion. Four screw-propellers disposed beneath each aeroplane fore and aft seem to afford most advantages, and it may be suggested that they should be connected in pairs. As to the method of raising the vessel from the ground, might not this be carried out by a modification of the principle employed by Count Zeppelin (although employed long previous), namely, a weighted car, which is drawn to either end to rise or fall, or stationary in the centre when the ship is required to pursue its course horizontally? By using this device, the ship being supported in any suitable manner by light wheels, for instance, the head of the vessel is inclined upwards and the two side aeroplanes (which should be pivoted so as to be capable of horizontal movement), are likewise set at the same inclination. The motor is then started, and it is presumed the vessel would then rise, making an angle with the horizon depending on the position of the aeroplanes and ballast car. These ideas are doubtless very crude, but perhaps worth a trial, for should they prove effective the difficulty of mounting vertical propellers, together with the enormous power required to drive them, would be avoided. Mr. F. H. Wenham, whose authority I presume no one will question, states that from actual experiments carried out by him the power to raise 100 lbs. in the air vertically is as much as 3 h.p. (actual). We have here a basis for future experiments, while M. Santos-Dumont has already nearly solved the problem of a suitable motor.

The steering difficulty I scarcely think will be so troublesome as the actual raising of a machine without the assistance of a balloon. According to what has been done in this direction the hollow square rudders of the ingenious American experimenters, Messrs. Rufus Porter and Marriott, seem to afford the simplest device for the purpose.—Yours faithfully,

SIDNEY RUSSELL.

THIRD-PARTY INSURANCE RISKS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I see in your last week's *Journal* that "H. G. E. C." asks for the address of an insurance firm who undertakes third-party risks for motorists. Mr. Cuthbert R. Callard, of 25, Golden Square, Regent Street, London, undertakes these for a well-known firm (though I forget just now which) on very reasonable terms. I have always found him most obliging, and I feel sure he would willingly send full particulars to any motorist who wished to be so insured.—Yours faithfully,

J. REGINALD EGERTON.

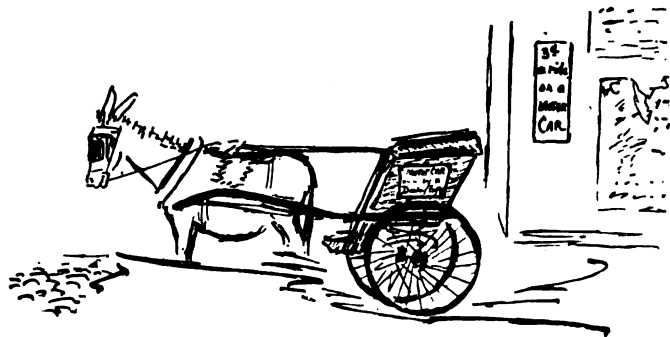
SIR,—In your issue of last week, "H. G. E. C." asks amongst other questions what insurance company undertakes third-party risks. If I am not mistaken, I think that he will find that the Law Accident Insurance Society, of 215, Strand, takes such risks at a small cost, also covering the car against damage, fire or theft, and the owner or his engineer against personal accidents. The Society was certainly issuing such policies from its stand during the last Motor-car Exhibition at the Agricultural Hall.

Yours truly, POLICY HOLDER.

THE LATEST IN MOTOR-CARS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I was staying in the Isle of Man a week or two ago. Of course I kept a sharp lookout for any sign of automobilism. During a fortnight's sojourn this is the only *mototial* evidence I came across. There was a label on it, on which the waggish owner announced that it was *A motor-car* worked by a donkey-engine! It was waiting for hire by the halfpenny ferry on



the old quay at Douglas, and the proprietors earnestly invited me to have a threepenny ride. The memories of my childhood concerning mailcarts or donkeys, did not require jogging, so I declined with thanks, and told the grinning Manxman that I had one as good at home, and my very own! When I enquired, he said that there was a gentleman on the island who possessed a real motor-car, but it was not for hire, neither was it much *en evidence*.—Yours truly,

AMITA.

YORK TO LONDON.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I have been much interested in reading in the *Journal* the different views expressed by some of your correspondents of my account of "A Run from York to London." One of them "J. E. H." reckons my time at 19½ hours, but I hope that he does not think that I sat on my car all that time. From this 2½ hours must be deducted for a stop at Retford, 2 hours

for a stop at Stamford Bridge and another hour for a stop at Colliers End. Besides these three stops, some delay was caused by my friend taking an occasional spell at the wheel, and the road being closed for repairs between York and Selby. This last led to my taking a wrong turning in the dark and added another twenty miles to the journey.

My sole object in sending you an account of the run was to point out the difference in cost between bringing the car to town by road and by rail. Still, as it is, I claim to have averaged a speed when travelling of twenty-four miles an hour. Had I been seeking to establish a record I could have done much better as regards both time and cost. As to "J. E. H.'s" surmising that his 8 h.p. Panhard could have done the journey in half the time and at half the cost, I can only say that for the last week I have been travelling in company with an 8 h.p. Panhard, and find that I have the best mileage at the lowest cost. "J. E. H." asks what a poor man with a steam-car does on an ordinary run. In my opinion, the poor man with a steam-car will in course of time beat any other man on a petrol-car. I may also mention that though I have driven a Gardner-Serpollet since first that car was introduced into this country, I have never been hung up on the road. Some companies make a feature of advertising the thousands of miles their cars have run; I think that I could double and treble any such records, having used my car every day since 1897.—Yours truly,

F. H. HUNT.

MR. J. W. COULSON writes:—Can one of your readers give the cause of the exhaust box bursting with a tremendous bang, and also state what is the best plan to adopt for preventing a new exhaust box from doing the same?

REFERRING to a letter *re Grease Troubles*, which appeared in a recent issue, we are informed by Mr. H. Harris, of the Elephant Chemical Company, Neat Street, Old Kent Road, S.E., that they supply a grease manufactured with the special object of obviating such troubles.

MR. M. O'BRIEN, 30, Angier Street, Dublin, undertakes repairs to motor-cars of all kinds and keeps a stock of all the usual parts.

THE Daimler Motoren Gesellschaft, of Cannstatt, Germany, are now building a Mercedes car of 15 h.p. weighing between 950 and 1,000 kilogrammes.

M. SIMAIS, Director of the Persian Customs on the Persian Gulf, has just left Paris, taking with him a 9-h.p. De Dietrich car on which he intends to make a tour up the valley of the Euphrates.

ONE of the items of the ninth annual exhibition of flowers, plants, fruits, and vegetables held under the auspices of the Spittlegate Workmen's Institute, at Grantham, on Tuesday last, was a motor-car demonstration arranged by the Lincolnshire Automobile Club.

THE constant use which the King is making of his motor-cars affects the railway companies to some degree, states the *Court Journal*. Upon the occasions on which His Majesty has driven to Windsor the arrangements at London and Windsor, the cost of special trains and their attendant expenses, have naturally disappeared. This was also the case upon the occasion of His Majesty's week-end visit to Lord and Lady Alington at Down Place, Berkshire. The disappearance of the inevitable ceremonies of the departure and arrival comes, of course, as a pleasant relief and a considerable saving of time.

AT the last meeting of the Standing Committee of the Automobile Club the Secretary suggested that there should be displayed in the Club premises maps of the United Kingdom on which could be shown, by small flags, the towns in which the sale of petrol and motor spirit had been established by Messrs. Carless, Capel and Leonard, and the Anglo-American Oil Company, respectively. Letters were submitted from these firms agreeing to the suggestion, and the Secretary reported that the Anglo-American Oil Company had offered to present suitable maps for use by both firms.

THE IMPERIAL PETROL CARS.

WE are able this week to illustrate two of the different types of petroleum-spirit motor-cars which have lately been put on the market by the Imperial Autocar Manufacturing Company, Ltd., of Manchester. The company had taken space at the recent Show, but at the last moment were unable to avail themselves of it owing to the pressure of orders on hand. They had several cars finished, but as delivery had been promised definitely to their customers they had unfortunately to forego the publicity of the 1901 show. Fig. 1 shows the Imperial voiturette adapted to seat two or three persons. It is driven by a water-cooled motor of $3\frac{1}{2}$ h.p. The engine, which is located in the front part of the frame, is of course provided with electric ignition. Usually a two-speed gear running in an oil bath is fitted to this car, but three speeds ahead and one reverse can be provided for if desired. No chains or belts are employed in the transmission, the power of the motor

FRENCH AUTOMOBILE PROGRESS.

A WRITER in *Le Velo* presents a scientific review of recent automobile construction in France. There is still much to be done, he says, from all points of view. The field of experiment with automobiles is still very large, as they undoubtedly do not yet approach their final form. Nevertheless, the last exhibition left its mark on the road of progress, as it noted, as special characteristics, the disappearance of the motor-cycle, the eclipse of the voiturette, and the advent of the light vehicle, which is not only solid and strong, but graceful and elegant at the same time. It has often been said that the motor-cycle was only a step in the progress of the automobile, a necessary intermediary without doubt, but one which would soon disappear as a result of its defects; want of comfort and of protection against mud, dust, and accidents, and especially its frailty. The voiturette was the next stage. It has a regular seat for two, and

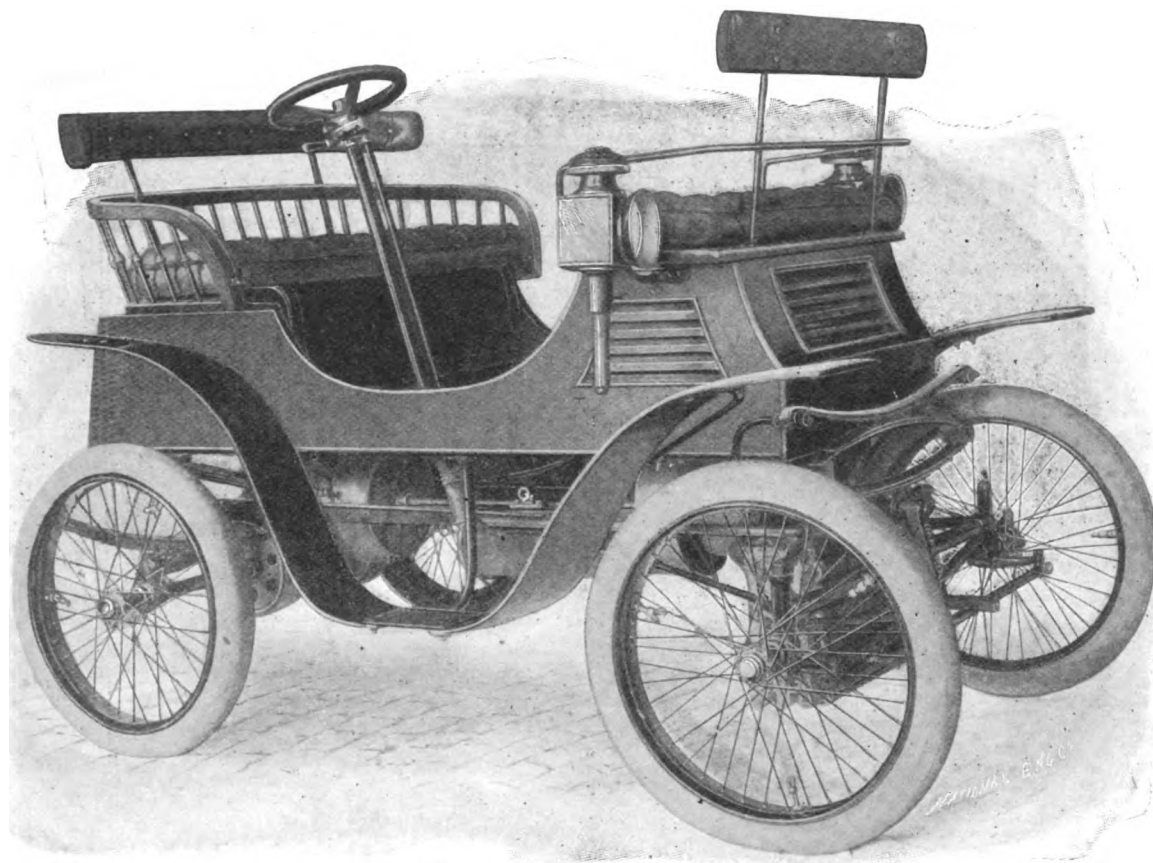


FIG. 1.—THE IMPERIAL VOITURETTE.

being conveyed direct to the rear axle by bevel gearing. The road wheels are of the cycle type, shod with pneumatic tires, while steering is controlled by an inclined hand wheel. Two independent and powerful band brakes are provided, these acting in both a forward and rearward direction. Fig. 2 (p. 434) shows the Imperial light car with *tonneau* body to seat four persons. This is a more powerful car than the voiturette, being fitted with a vertical water-cooled engine of 6 h.p. Three speeds forward and one reverse are available, the power being transmitted direct to the rear axle by bevel gearing, no chains or belts being used. The steering is of the inclined wheel type, while the cycle type road wheels are shod with pneumatic tires. Great attention has been paid to the braking power, the rear axle being equipped with no less than four band brakes. The Imperial Company also make a 6 h.p. Spider phaeton on the same lines as the car illustrated in Fig. 2. We hope to have an early opportunity of trying the Imperial cars, when we shall probably have something more to say about them.

therefore offers more comfort. But its construction is still too light, and its insufficient power became very apparent when an incline of some steepness forced one of its occupants to step out and push until the top was reached. On the other hand, the light vehicle, with a more powerful motor, a strong frame, and elegant carriage work, is more practical, while differing greatly from the heavy vehicle in price as well as in elegance and in the general arrangement.

Frames are being built stronger. U-section iron and steel is substituted more and more for the cold-drawn steel tubes. The bodies which are adapted to these frames are dismountable; there are fewer levers, coils or wires to be loosened, and less piping to be taken off. Suspension on semi-elliptic and C springs becomes general. The diameters of front and rear wheels approach each other, which is an advantage in so far as it reduces the extra pieces to be carried on the road. In general, designs are becoming more refined and vehicles are

lengthened. The centre of gravity of the whole vehicle is lowered, and thus safety in turning corners is increased.

The motors, generally placed in front, are air-cooled up to $2\frac{1}{2}$ or 3 h.p., and sometimes have air-cooling ribs on the cylinder and a water-cooled head. But in the majority of cases recourse is had to water cooling for both cylinder and head, the water being circulated by a pump or by thermo-siphon action. But a rotary pump is preferably used, as it permits radiating coils to be placed entirely in front of the vehicle, where they are fanned by the air currents, and thus reduce the amount of water used per day to a few litres. The valves and the piping are enlarged, permitting the motor to give its full power. The admission valves are always automatic, while the exhaust valves are operated mechanically, mostly by cams. A regulating device varies the lift of the valve according to the speed. On large vehicles a special device does away with the effect of the governor when approaching steep hills, to obtain the full power of the motor. In two models a new form of regulator was shown which does not act on the exhaust, as has been the custom heretofore,

motor with tube ignition in which the time of ignition could be advanced by a variation of compression.

Carburettors a *barbotage* (in which the air bubbles through the petrol) are disappearing; those working on the constant level principle and using a sprayer may be seen everywhere, the various models differing but little from each other. Automatic distributors, which are still very rare, seem to be specially adapted to carburetted alcohol in explosion motors. Friction clutches are nearly always conical and are operated by a pedal. Speed changing gears present more novelties. The belt finds less and less favour; gears are generally used, either with the well-known shifting gear arrangement or with the newer construction, in which the teeth remain always in mesh and free on the motor shaft, to which they are fastened either by a movable key, friction clutches, or positive clutches, these diverse organs being operated by a small handle mounted near the steering post. The reverse motion is nearly always obtained by the interposition of an intermediate pinion between the pinion and gear of the slowest speed. Transmission to the wheels is generally by chains in the large

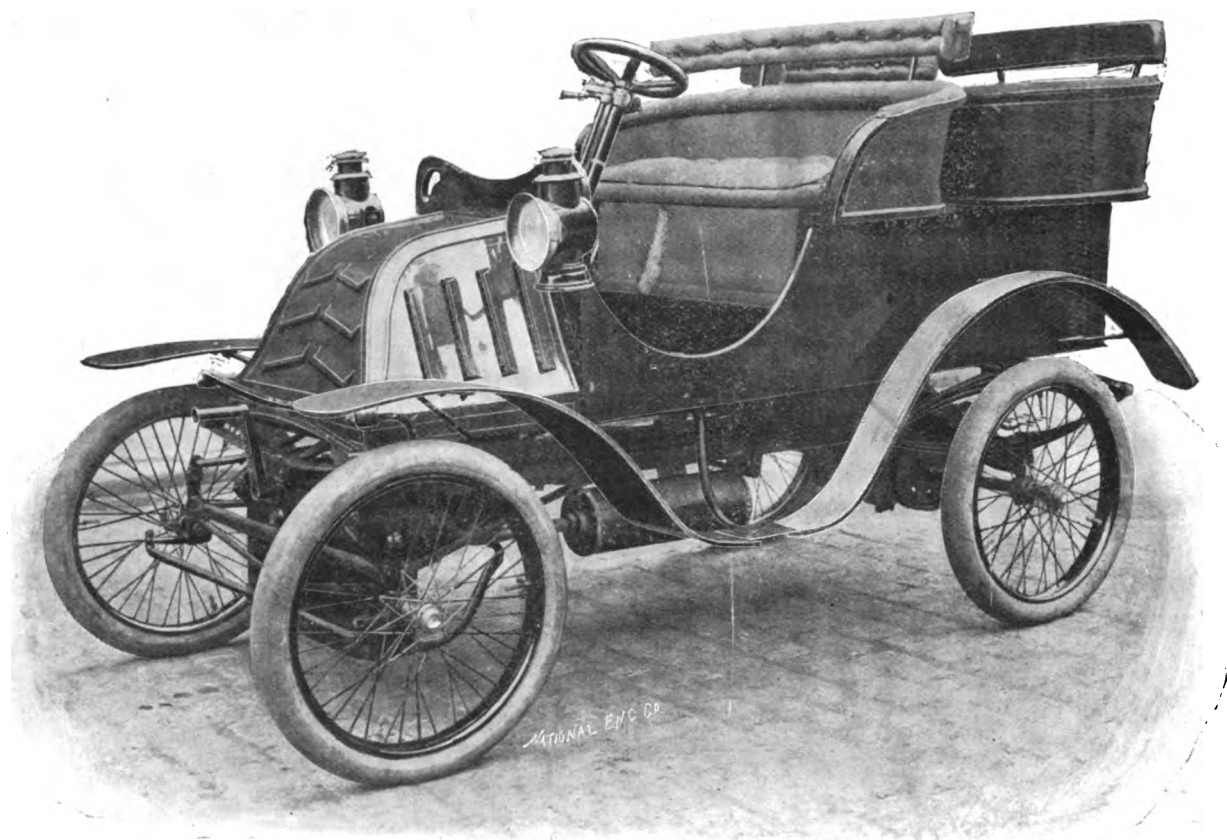


FIG. 2.—THE IMPERIAL LIGHT CAR (see page 433).

but on the admission of the charge. Experience will show whether these two systems are practical.

Handle steering has been abandoned, and the hand-wheel with inclined axis is universally used. Around the steering head post are grouped the operating handles, including the levers for changing the gear and for timing the ignition. Steering is controlled by the front wheels, pivoted on short axles, through the intermediary of a gear sector and a pinion, a demultipliering device which is always reversible, at least according to the statements of the manufacturers. Brakes are more powerful. There is nearly always one on the differential, and two on the hubs of the rear wheels. These are band brakes which must be carefully isolated from the interior mechanism that they may not become covered with oil and grease, which would prevent an effective braking. Electric ignition has become general on account of flexibility secured by an advance of the ignition; we have, however, pointed out how desirable would be the advent of a

vehicles, and by a single central shaft with Cardan couplings in light vehicles.

THE success which has attended the day service of motor-vans between Tunbridge Wells and London has led to the rapid inauguration of the promised night service. The first night car took the road on Friday last week, and, having accomplished its journey without a hitch, delivered its consignment of goods in and about Tunbridge Wells early on Saturday morning.

THE three days' run of the Yorkshire Automobile Club to Settle, Ripon, and Harrogate commenced on Saturday last, members leaving City Square, Leeds, at two o'clock for Settle, where the night was passed. Under varied meteorological conditions the tour was continued, Sunday evening finding them at Ripon, and Monday with the North of England Cyclists in camp at Harrogate.

HERE AND THERE.



THE directors of Friswell, Limited, have declared and paid a dividend of six per cent. for the first six months of this year.

AFTER their wedding at St. Peter's Church, Tunbridge Wells, last week, Mr. and Mrs. M. S. Bower left Dunorlan, the residence of the bride's parents, on a motor-car for Malling, en route for Scotland.

UNDER the heading of "The Cult of the Ungainly," the *Birmingham Daily Argus* has delivered a pleasant little lecture on moderation in the speed of motor-cars. Perhaps this ought to settle the vexed problem.

A SCHOOL of instruction in practical automobiling has been opened at 1684, Broadway, New York, in the "Central" storage and repair station which has recently been established there by the New York agents for the "Gasmobile."

TO-DAY (Saturday) the members of the Manchester Automobile Club will hold a run to Buxton.

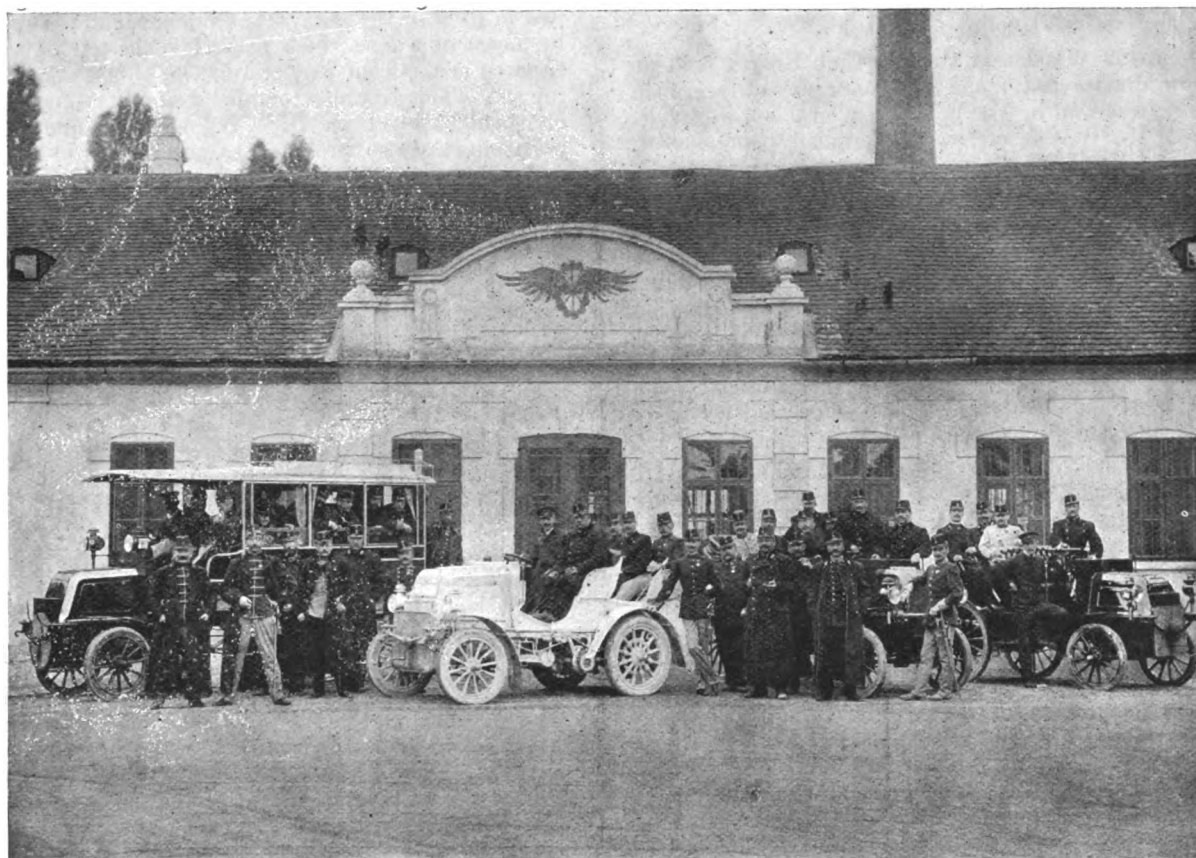
THE Municipal Council of Singapore has ordered a Thornycroft steam tip-waggon.

A SPECIAL motor-car is, it is announced, being constructed by Messrs. Charron, Girardot, and Voigt, of Paris, for the conveyance of racehorses between that city and Maisons-Lafitte.

THE Automobile tour of Ireland started from Dublin on Thursday. At the time of writing we learn that over twenty-five cars have been entered for the tour.

WE understand that the British Motor Traction Company, Ltd., have lodged an appeal against Mr. Justice Farwell's decision in the Maybach carburettor action.

THE Municipal Council of Philadelphia has authorised the city controller to sign the warrants for an automobile to be used by the city architect.



VISIT OF AUSTRIAN MILITARY OFFICERS TO THE AUSTRIAN DAIMLER MOTOR WORKS AT NEUSTADT, VIENNA.
(Cliche de) [Allgemeine Automobil-Zeitung.]

A TWO-MILE motor-cycle handicap race at the Harrogate Athletic Sports on Monday last resulted as follows:—A. Farnell, Bradford, 1; J. W. Stocks, Birmingham, 2; H. Rayner, Cleckheaton, 3.

MR. MARK FOY, of Sydney, has placed an order with the Austral Cycle Agency for a 10 h.p. Panhard car. The car is to have special fittings for Australian roads, and is, it is stated, to cost £1,000.

THE Caledonian Motor-Car and Cycle Company, of Aberdeen, furnished one of their Caledonia motor-cars to drive Colonel Eustace Balfour, the commanding officer of the London Scottish Volunteers, during the route march from Aberdeen to Blairgowrie from the 3rd to the 10th inst.

CLUB GARAGE, LIMITED, is the title of a concern which has been registered with a capital of £2,000 to acquire under an agreement with C. Harrington Moore the business carried on by him as the Club Garage, and, generally, to carry on the business of storers, dealers in, and proprietors of motor and other carriages, etc.

H.R.H. THE DUKE OF CONNAUGHT, while visiting the Forces in Ireland recently, drove to Blackrock in the Locomobile steam-car belonging to Major-General Sir H. M'Calmont.

THE new De Dion voiturette with the engine in the fore part of the frame is expected to make its appearance in November next.

THE members of the Reading Automobile Club had a run to Southampton last week end, for Cowes Regatta; to-day (Saturday) there will be a run to Beaconsfield.

MR. J. BAXTER, of Gravesend, has purchased five motor-cars with the intention of making excursions daily from Gravesend to interesting places in Kent. Lord and Lady Darnley were taken for a trip round some of the Kent villages by Mr. Baxter one day last week.

THE contributor of the article entitled "A Run on a Gardner-Serpellet," in our issue of July 20th, writes to point out a slight error. The phrase "a hill with a gradient rising from 1 in 30 to 1 in 90," page 383, col. 2, line 3, should read "from 1 in 30 to 1 in 9½."

MR. G. OWEN, of 69, Port Street, Stirling, N.B., is now keeping a stock of petrol, and is able to undertake motor repairs.

THE Bexhill Motor Company, of Bexhill-on-Sea, are well laid out to undertake repairs to motor-cars and have a useful inspection pit.

THE Reading Automobile Club's Petrol Consumption Trial has unavoidably been postponed until later in the season. It is hoped that the Committee will be able to fix a date in September for the trial.

THE Automobile Club will soon have recorded its 1,000th member. The latest list of elected candidates brings the total up to 986, and includes Lord Plunket, the Marquis of Downshire, Sir J. H. P. Hume-Campbell, Bart., and many other well-known people.

THE Brighton and Sussex Motor-Car and General Engineering Works, Gloucester Road, Brighton, have been appointed sole agents for Brighton and district for Van Raden's Woven Glass accumulators and ignition apparatus and also for Boulton Bros. and Co.'s "Wilburine" and "Valvoline" motor oils.

AT the Doncaster Wanderers' Cycling Club Sports, held at Bennithorpe on Monday last, a one mile motor pursuit race, open to members only, was won by Mr. C. Parker, on a motor-bicycle, in 2 min. 19 sec., Mr. W. Corkett, on a motor-quad, being second, 2 min. 21 sec., and Mr. J. W. Brown on a motor-car third, 2 min. 25 sec.

AT the quarterly meeting of the Lancashire County Council, at Preston, last week, Alderman W. W. B. Halton, in moving the report of the Main Roads and Bridges Committee, referred to the licensing of the drivers of motor-cars, and to the placing of caution boards along the roads where necessary. He said it was not intended to reduce the maximum speed of twelve miles an hour. In answer to a question as to what size it was intended the identifying numbers should be Alderman Halton said that they would probably be about six inches in length.

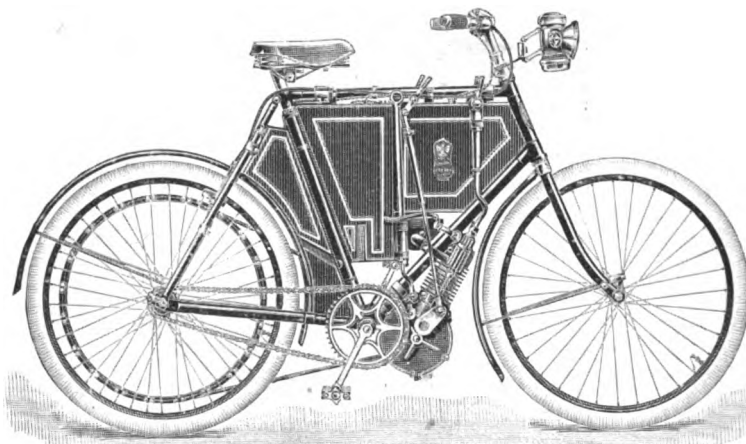
THE International Motor-Car Company, Limited, of 76, High Street, Marylebone Road, London, W., have sent us a copy of a useful and interesting booklet they have issued, giving instructions for the driving and management of the Charette. Lettered illustrations are given, so that the main features of the motor and mechanism can easily be identified. The instructions, which have been written by Mr. F. Oscar Seyd, are both practical and comprehensive. The booklet runs to 25 pages, the last two being devoted to some brief but useful "Points to Remember."

LORD ROTHSCHILD made the occasion of his presenting prizes at the Aylesbury Athletic Sports the opportunity of expressing his views on motor-cars. His lordship remarked that in their search for novelties the committee had introduced races for automobiles, and he candidly admitted that he regarded these machines with as much dread as did cyclists. He should like to see motor-cars paying a heavy licence to help to keep the roads in proper order, and their speed should be so regulated that they would not be a danger to foot passengers or to those who used carriages.

THE Winton Motor-Carriage Company, of Cleveland, U.S.A., are issuing an artistically illustrated and arranged booklet, descriptive of their petrol motor-cars. The various types of these which decorate its pages are models of neatness and apparently comfort also, whilst the many views of the company's various workshops, dying away in dim perspective, suggest an enormous output. But what will be still more interesting to prospective purchasers of motor-cars is the stubborn array of facts, in the form of records established under all sorts of conditions by Winton cars, which is also to be found between the covers of the booklet. It is claimed that no user of the Winton motor has ever been the victim of accident resulting from fire or explosion. Friction is reduced by means of direct gearing to an improved differential upon a new rear axle. Water circulation is maintained by means of a small rotary pump, and a new system of brakes, which can be locked so as to hold the car on the steepest hill, adds yet another feature to the security and comfort claimed for the Winton cars.

THE PHOENIX MOTOR-BICYCLE.

THE accompanying illustration shows a new motor-bicycle which has just been put on the market by Mr. J. Van Hooydonk, of the Phoenix Cycle and Motor Works, 736, Holloway Road, London, N. As will be seen, the arrangement of the motor and driving gear is similar to that adopted in the Minerva and Excelsior motor-bicycles, but in the new machine Mr. Hooydonk has incorporated several additions and improvements. The bicycle itself is a strong roadster of normal dimensions, built with two 26-in. wheels, having special Clincher or Dunlop pneumatic tires. The frame tubes are reinforced wherever necessary to enable them to withstand the strain set up by the motor drive. Pedals are provided, geared in the usual way by a chain to the back wheel, to enable the rider to start the machine from a standstill, an ordinary free-wheel clutch being fitted whereby the pedals serve as footrests immediately the engine takes up the work. The engine itself is clipped on to the lower tube of the bicycle just in front of the pedal crank bracket, and is supplied with gas by means of a pipe which leads from the top of the carburettor situated in the front part of a flat brass box suspended from the top rail. This box also contains a supply of petrol sufficient to carry the bicycle from 70 to 80 miles without refilling. Compartments are also provided to accommodate the sparking coil and accumulator as well as spanners, oil can, and all the little



accessories which would otherwise have to be carried in a tool bag slung behind the saddle. The whole of the engine's movements are controlled by four little taps situated on the top rail, and the electric spark is switched on or off by turning the left handle. It may also be mentioned that the motor is fitted with a useful exhaust valve lifter, the first movement of the lever controlling the same being to interrupt the electrical circuit. A powerful rim brake operated by Bowden wire mechanism is fitted to the rear wheel. A simple means is adopted for the lubrication of the engine, a supply of lubricating oil being carried underneath the coil box; this oil can be instantaneously injected into the crank chamber by means of a ball-valve pump whilst driving along at full speed. Another improvement is a tank for carrying a reserve supply of petrol. This is made to fit behind the seat pillar tube, following the curve of the back wheel and connected to the carburettor tank by means of a pipe, so that when the ordinary supply of petrol is exhausted after seventy or eighty miles riding the carburettor tank can be replenished by pumping the petrol from this reserve tank by means of an ordinary tire inflater. This enables a supply of petrol to be carried to drive the bicycle in all about two hundred miles, so that the tourist need never be stranded for lack of fuel. Mr. Hooydonk informs us that he has made several journeys of 200 miles without having to refill the petrol tanks.

SIGNORA ELEONORA DUSE is one of the latest converts to the automobile. She is so delighted with the new means of locomotion that she has ordered a 12 h.p. car for her own use.

THE MODERN VERSION OF JOHN GILPIN'S FAMOUS RIDE.

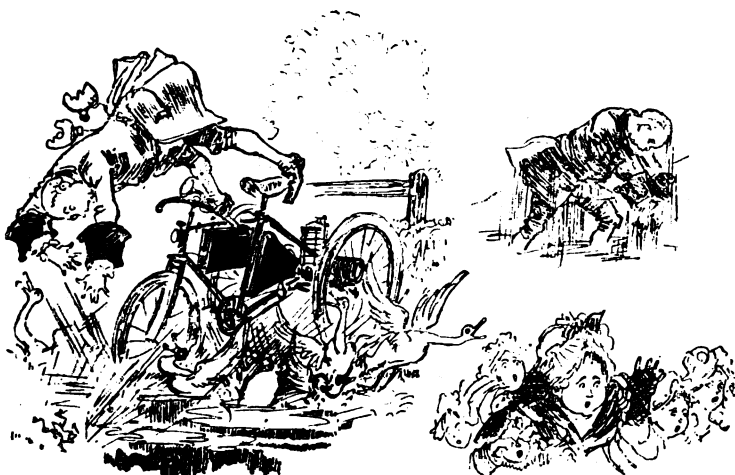
TO commemorate the twentieth anniversary of his marriage John Gilpin, an honest draper of London, has decided upon a little party at the "Bell," at Edmonton. Mistress



Gilpin and the children being despatched in a carriage, John mounts his motor-tricycle.



On his agile mount he makes the pace, but the two bottles of good wine which he carries at his belt suffer, and off goes his wig.



Quick as the shaft of a brawny bowman, Gilpin, out of breath and against his will, overshoots the "Bell," and comes to the pond at Islington.

Mistress Gilpin, at the "Bell," becomes alarmed.

At Islington, however, Gilpin has a trusty friend, who lends him some clothes and a wig. Gilpin remounts his steed, cooled

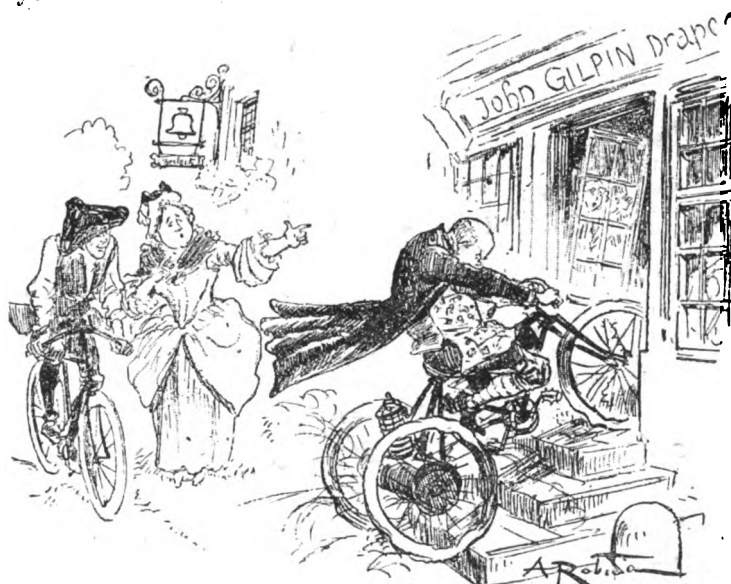
by the bath—an incomprehensible accident, which cannot happen again, he declares.



Alas! what whim has taken the swift steed! Once more it refuses to stop, and repasses the "Bell," frightened no doubt by the barking dogs.



"Jump on to your bicycle," said Mistress Gilpin to a lad at the "Bell," "and try to catch my husband. Here's a shilling for you."



But the steed, seeking the stable, would not stop before reaching home, and then went right into the shop. Next time John Gilpin mounts it, may we be there to see him!—From *La Nature*.

FURIOUS DRIVING CASES.

At Bournemouth Dr. Harrold Simmonds was summoned for furiously driving a motor-car on July 23rd. P.S. Greenslade stated the defendant came across the Square from Commercial Road at about 14 miles an hour. There was considerable traffic about, and a collision nearly occurred at the approach to Richmond Hill. Fined 14s. and 6s. costs.

At Otley Ernest Broadbent, who was charged with furiously riding a motor-tricycle at Baildon on July 20th. Evidence was given by P.C. Rouston that the defendant travelled 220 yards in 25sec., and by a Baildon resident, who said Broadbent was travelling at the rate of 24 miles an hour. A fine of 10s. and costs was imposed.

At Guildford Mr. A. Van Andra was fined £10 for travelling at excessive speed on a motor-car on the Ripley road. A constable said the pace was 22½ miles an hour.

At Huntingdon Division Petty Sessions, G. F. Cecil, of Stretton, Rutland, a lieutenant in His Majesty's Army, was charged with driving a motor-car at a greater speed than twelve miles an hour at Alconbury Weston on July 12.—Defendant pleaded guilty.—P. C. Bozeat said he was on the North Road at Alconbury Weston at 4.40 p.m. on the day in question and he saw a motor-car coming at a very fast rate. He stopped it and said to the defendant "You have come half a mile in fifteen seconds under the minute." There were two men in the car and defendant said he was in charge of it. Witness had received several complaints about the rate at which it was travelling.—Fred Hubbard said he was leading a horse at Alconbury Weston, and a motor-car came by at a terrific rate and frightened the animal, which ran away. A child narrowly escaped being hurt.—After the magistrates had retired, the chairman said it was a serious case. Defendant was driving at a terrific pace through the village, and the public must be protected. However the bench would deal leniently with defendant and he would have to pay £5 and 14s. 6d. costs.

MR. ROBERT H. HUMPHRYS, of Sevenoaks, was summoned at the Winchester Petty Sessions for driving his motor-car from Basingstoke to Winchester at a greater speed than twelve miles an hour and furiously so to endanger the lives and limbs of persons on the highway. A police constable gave evidence to the effect that the motor-car was going at the rate of twenty miles an hour, and this statement was supported by a man who stated he was near the police-constable. After a searching cross-examination of the witnesses, Mr. Staplee Firth, who defended, put his client and his nephew, who were both in the car at the time, into the box and then addressed the bench for the defence. The case was dismissed.

FATAL ACCIDENTS.

ON Saturday afternoon last as Mr. H. A. Hoy, chief mechanical engineer of the Lancashire and Yorkshire Railway Company, of Bromley Cross, Bolton, was proceeding in a motor-car through Galgate towards Lancaster two children were crossing the road. At the sound of his horn the elder child let go the younger, Herbert Benson, aged three, and the motor-car passed over him causing instant death. At an inquest held on Monday it was stated that the child "dashed across the road like a hare." The police evidence agreed that the speed of the motor-car was twelve miles. A verdict of accidental death was returned, and Mr. Hoy was acquitted of blame, but the jury added a rider to the effect that the speed of motor-cars should be reduced to less than twelve miles an hour when passing through villages.

ON Thursday last week a lengthy coroner's inquiry was held at Gravesend touching the death of Frederick Charles Curtis, aged five years, son of a Northfleet engine-driver, who was knocked down and killed on the London road between Northfleet and Gravesend by a motor-car driven by Sidney Lodge, in the employment of Messrs. Smith and Day, motor-car proprietors, Gravesend. Deceased, whose skull was fractured, ran off the pavement into the road in front of the car. The driver stated that he was going at a speed of from nine to ten miles an hour; he did not see deceased until within six yards of him. He had been a motor-car driver a week, having previously had about a week's tuition for the duty.—After considerable deliberation the jury returned a verdict of "Accidental death," and expressed the opinion that the drivers of motor-cars should be instructed to slow down speed in crowded thoroughfares and where children assembled, such as in front of public schools.

CHARGING ARRANGEMENTS FOR ELECTRICAL VEHICLES.

A CONFERENCE of firms interested in electrical vehicles was held at the Automobile Club on Thursday, the 25th ult. There were present:—Mr. Theodore Chambers, of the British and Foreign Electrical Vehicle Company, who was voted to the chair; Mr. Roger W. Wallace, the chairman of the Club; Mr. Paris Singer, of the City and Suburban Electric Carriage Company; Mr. H. W. Buttler, chief engineer of the Electrical Power Storage Company; Mr. Percy Northley, of the Electric Motive Power Company, Limited; Mr. Carl Oppermann; Mr. Joel, of the Electric Carriage, Motor and Battery Syndicate; and the Club Secretary. Mr.

Chambers explained the purpose of the meeting, and submitted a map which he had prepared showing some 130 charging stations in England and Scotland. A letter was read from Mr. Frederick Shippey, of Shippey Brothers. Mr. Roger Wallace stated that makers and users of electrical vehicles were much obliged to Mr. Chambers for the trouble he had taken in preparing this map. Mr. Chambers submitted replies from charging stations received by Mr. R. E. Phillips, in response to a circular issued by him, from which it appeared that engineers in charge of electrical charging stations were quite ready to afford facilities for the charging of electrical vehicles. It was agreed that the editor of the *Electrical Review* should be asked to publish a copy of Mr. Chambers' map, and to invite the co-operation of readers by informing the editor of electrical charging stations, whether public or private, the owners of which would be willing to give a charge of electricity to electrical vehicles touring in the country. It was further agreed that the Automobile Club should be invited to write to the engineers of charging stations in the country asking whether they can give 110 volts, and whether they will have resistances to bring the current down if necessary to 90 volts, and whether they will agree to charge not more than 3d. per unit as the uniform charge; further asking whether they will provide facilities by which electrical vehicles may be charged rapidly and without delay. It was reported that the Automobile Club had decided to have a special class for electrical vehicles in connection with the Glasgow Trial, and it was agreed that the Committee of the Automobile Club should be asked to call a meeting of those interested in the manufacture and sale of electrical vehicles, to consider arrangements for a trial of electrical vehicles in London.

A NEW system of storing and using petrol, which claims to avoid all danger of explosion, is to be exploited by a New York company. The system, which will be known as the "gasogas," is applicable to automobiles and other machines. The petrol is contained in an absorbing material. A *bidon*, which will hold 5½ gallons of liquid petrol, will with this system have a capacity equal to 1,000 feet of illuminating gas.

THE following additional entries have been received for the Glasgow Trials:—Section I.—Durham, Churchill and Co., Sheffield, one vehicle; Stirling's Motor-Carriages, Limited, Glasgow, two vehicles; and the Mo-Car Syndicate, Limited, Paisley, two vehicles. Section II.—Mr. Harvey du Cros, jun., Mr. J. D. Siddeley, Mr. Walter Creber and Mr. James Burns. So far fifty vehicles have altogether been entered for the trials.

THE Dublin County Council has resolved to ask the Local Government Board to reduce the limit of speed allowed for motor-cars from fourteen to twelve miles an hour, and to insist upon a regulation making it essential that the cars should be provided with a number in a conspicuous place to enable identification to be effected.

DURING the Pan-American meet of the League of American Wheelmen, to be held in Buffalo from August 12th to 18th, the E. R. Thomas Motor Company will give free lectures and demonstrations at its factory in that city on the use and misuse of air-cooled motors. To these lectures all cycle riders, dealers and repairers are invited. Preliminary to the demonstrations visitors will be shown the various tools, jigs, etc., that enter into the construction of bicycle motors. Following this will come the lectures and demonstrations, and the latter will include the testing of motors as carried on by the Thomas Company in its daily routine of manufacture, and also the means for putting motors right when trouble arises.

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COMMENTS.



MOTORISTS generally will learn with sorrow of the serious accident which befell Captain Laycock and his friends on Sunday last. The cause of the mishap, an account of which is given on another page, is, in the meantime, involved in mystery, but will doubtless be explained in due time. Curiously enough, another well-known motorist, Mr. E. Kenealy, of Watford,

passed over the same route on his Delahaye car, half an hour after the accident, on the way to Scotland. Needless to say he stopped to render any assistance that he could. In the course of a letter to us on the subject of the accident Mr. Kenealy states: "Captain Laycock wanted me to drive him home (seventeen miles), but the doctors would not let him go. This was a pity, as we could easily have taken him in an hour and he would have been better off. The French driver was absolutely uninjured. The car, which was a 24 h.p. Panhard, was not very much damaged. It turned right over and then righted itself, facing the direction from which it had come. My opinion is that the brake on the right hand wheel worked and the other did not. This threw the car round and it struck a mound at the side of the road broadside on, turned right over, and then righted itself." Captain Cradock, who was so seriously injured in the accident, has seen over twenty-five years' service in the Navy, and was promoted only last year for his gallantry in the storming of the Taku Forts during Admiral Seymour's attempt to relieve the Pekin Legations. We are glad to learn that his condition has taken a slightly more hopeful turn and that the other victims of the disaster are progressing favourably.

Killing the Goose.

THE hotel interest has not been slow, as a rule, to recognise the beneficial influence of the motor-car in restoring to some extent the prosperity of the old coaching days, and it was with some surprise that, when passing through Keymer lately, we saw a notice over the entrance gates of the Downs Hotel, "Motors Not Admitted Here." Automobilists, as a rule, are pretty sure of a welcome at good hotels, and though foolish and short-sighted prejudice may exist, it has rarely been displayed by mine host, even in the early days of the movement. There is little fear, however, of the notice not being carefully observed by owners of motor-cars, who, as the proprietor of the Keymer establishment may come to realise, are a rapidly increasing source of profit to country hostleries.

Why not Automobile Ambulances?

A DEPUTATION representing the Committee of the Manchester and Salford Medical Charities has waited on the Watch Committee of the Salford Corporation, requesting them to consider a proposed horse ambulance service in the borough, and pointing out the desirability of adopting more expeditious means of conveying injured persons to the hospital. The Committee has appointed a sub-committee to inquire into the working of the horse ambulance service in other towns. The

attention of the Committee might well be drawn to automobile ambulances, which have recently done such good service in New York.

A Too-Frequent Impudence.

WE have been often surprised at the touching confidence with which owners of valuable cars of the smaller kind will entrust them to small boys as *mécaniciens*. There is often a difficulty, it is true, in getting an expert driver, while if the owner takes the trouble to train his man himself he runs the risk of the latter seeking a more lucrative post in view of his newly-acquired knowledge. When a man, however, who would certainly not trust horses of equal value to an inexperienced stable-boy lets a callow-youth take out his car, it argues a firm faith both in the docility of the automobile, which is usually justified, and in the skill and resource of the juvenile, which is of the nature of credulity. Such were the thoughts suggested by the sight of the wreck of a good car last week, with buckled front and back wheels, and both axles bent, while the ability of the boy in charge may be gauged by his expectation that the repairer to whom he took it would restore it to running order in time to return that afternoon!

The Liverpool Heavy Vehicle Trials.

IN our issue of June 15th we detailed the awards made in respect of classes A, B, and C of the recent heavy motor-vehicle trials at Liverpool, stating that the awards in class D would be delayed for a few weeks. It will be remembered that in this class there were three competitors—the Thornycroft Steam Wagon Company, Messrs. T. Coulthard and Co., and the Mann Patent Steam Cart and Wagon Company, the latter firm being represented by two vehicles. The awards of the judges in class D, which have just been made, is as follows:—D1 (Thornycroft), gold medal; D2 (Coulthard), gold medal; and D3 and 4 (Mann), each a silver medal. In making the awards the judges remark:—"We have confidence in recommending the vehicles to which gold medals have been awarded for adoption where haulage of goods by mechanical means is contemplated. We also draw attention to vehicle No. B1, the performance of which, in respect of load and consumption, was highly creditable, whilst the tare was below the present legal limit of 3 tons. In Class D, the vehicles Nos. D1 and D2 had several points in which they were practically equal and some in which each excelled the other. We, therefore, had no alternative, where each had high merits, but to award two gold medals in this class." The report on the trials will be issued later in the year.

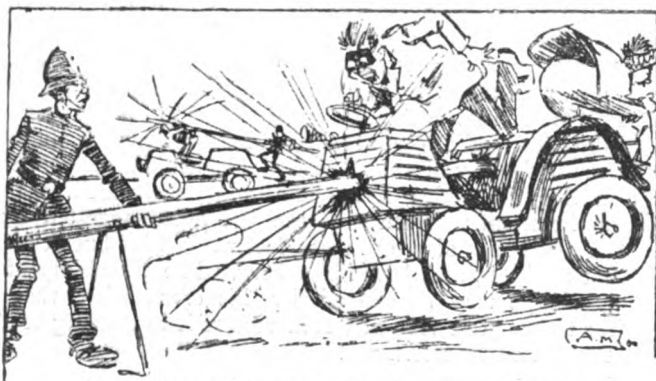
An Irish Guide Book.

"BEAUTY-SPOTS in the South-East of Ireland and how to see them by Car and Cycle," is the title of a most acceptable shillingsworth, by C. P. Redmond (Redmond and Co., Waterford). The book is strongly bound in cloth, boldly printed, and profusely illustrated. Roughly speaking, the ground covered is, as shown by the map in front, from Mizen Head on the East coast, westward to Nenagh, and from that town southward to Cork Harbour. The general plan followed is the division of

the district between these boundaries into one to four day tours. Each route is minutely described, and a good deal of general and historic information imparted by the way. For the tourist who may feel disposed to break his journey and make a closer acquaintance with some of the lovely spots passed through the prospects of sport and recreation are discussed. Not the least useful feature of the work is the hotel list with its detailed tariff. The wonder is that the beauty-spots of South-East Ireland are so little known to the majority of tourists who year after year spend their holiday in the same overcrowded resort or in lengthy and costly Continental railway journeys.

Strange Proceeding at High Wycombe.

THE Watch Committee of the High Wycombe Town Council, at the instance of Head Constable Sparling, on Tuesday last considered the excessive speed at which motor-cars are driven through the crowded streets of that borough. The Head Constable said the only plan to adopt to check the speed of motorists was to place scaffold poles across the streets through which their vehicles passed on their way from London to Oxford. Otherwise it was simply impossible for the police



THE "STAR'S" IDEA OF THE SCAFFOLD POLES.

to stop the cars. He further stated that under present conditions identification of motorists was altogether out of the question, as they wore goggles and dust-shields, which rendered their faces unrecognisable. The Watch Committee unanimously decided to support the police in checking what it is felt has become a nuisance and a source of danger to the lives and limbs of the community. This is not the first time that Head Constable Sparling has been heard of in connection with scaffold poles. Just about two years ago he tried similar tactics, which, however great their grievance against certain motorists who insist on exceeding the speed limit, to the general detriment of the automobile movement, is hardly a credit to the High Wycombe police force.

The Automobile Industry in England.

IN the course of an article on this subject the *Practical Engineer* remarks that it is well known to those who have followed the gradual developments which have taken place in connection with the manufacture of motor-vehicles in this country; both for purposes of pleasure and trade, that the backwardness of our Legislature in years gone by has been the means of our losing hundreds of thousands of pounds worth of trade, which has undoubtedly been captured by manufacturers of these vehicles in France, Germany, and the United States. So far as our own country is concerned, the manufacture of automobiles may be considered as only just commencing. It was only after removal of restrictions by the Light Locomotives Act of 1896 that any considerable effort was made to develop the manufacture of road vehicles in this country. Our makers are now going through an experience which our French and German rivals passed through some years ago, and they are almost totally unprepared to meet the pressing demands for vehicles on all sides, both for light and heavy work. Not-

withstanding the many drawbacks, there has undoubtedly been formed in this country the nucleus of a trade which we hope to see reach gigantic proportions within the next ten years. That it is progressing there is no doubt whatever, the greatest strides having been made in the building of private cars, though, as was shown at the recent Liverpool trials for heavy vehicles, the manufacture of the latter has been taken up in a spirited way by some half-dozen firms, most of which are now in a position to turn out vehicles which will stand an average amount of wear and tear, and do very economical work as compared with horses.

Starting from the Seat.

A NEW method for starting motors from the seat of the car by a touch of the foot has been devised by Dr. Colohan, the well-known Irish automobilist. The coil and wires are so arranged that by simply touching an electric button set in the footboard of the car the engine starts at once. It is claimed that the car may be left for hours at a time and yet a touch starts the engine each time without the least fear of failure. The great beauty of the invention is its simplicity and the absolute certainty of its working. The device will be a vast advantage, particularly to doctors, or indeed all motorists, as it will enable them to stop the engine dead whilst making calls, and start it again after taking their seat by a simple touch of the toe, this doing away with the unpleasant vibration when the car is stationary and the engine is running. Dr. Colohan has promised to furnish us with full particulars of the arrangement as soon as the question of patents is settled.

A Projected Long-Distance Tour with an Electrical Car.

IN a recent issue we referred to the run to Reading and back—altogether about 95 miles—of the British and Foreign Electrical Vehicle Company's electrical car "Powerful." We now learn that this car has completed a total distance of 2,000 miles with the same cells, and that it is proposed to run the car to Glasgow to take part in the reliability trials. Arrangements have been made all through the country for charging the battery, and the company propose making the run to Glasgow a five-day trip. As this is the first long tour undertaken with an electric car, we are looking forward to the result with interest. It is expected that the accumulators, which are of the Leitner type, will be good for at least 5,000 miles. A fortnight ago a four-day tour through Surrey, Sussex, and Hampshire was successfully carried out with the car. The matter of accumulator charging was arranged without any difficulty at Brighton, Salisbury, and Winchester, the charge being generally 3d. a unit. The only difficulty experienced has been with the pneumatic tires, not from punctures, but from occasional "bursts." The 90 mm. tires are now being replaced with 120 mm., with the view of obviating any further trouble. The car starts on its long journey on the 21st inst, via Peterborough, Nottingham, Sheffield, Bradford, Lancaster, Carlisle, and Carstairs.

Anti-Vibration Devices.

THE attention these are attracting at present in connection with cycle construction may serve to remind us that the questions connected with them are by no means finally worked out as regards motor-cars. The well known fact that comparatively heavy cars are less affected by road vibration than lighter ones, as far, at least, as the comfort of their passengers is concerned, is no doubt to be attributed in part to their heavier springs, and we have found a distinct increase in comfort with a light car accompanied by the substitution of stiffer springs for the light ones on which it was previously supported. Too much elasticity of suspension, as well as too little, causes discomfort; and elasticity *per se* is not the only desideratum (putting aside durability) in springs and tires; the limits of deformation of these under the forces usually at work must be comparable with the size of the road irregularities; if less the car will vibrate, if greater it will bounce, and the effect is more marked the lighter

the car and its load. The value of large pneumatics may be partially due to the fact that the smallest of the surface inequalities average themselves out over the whole surface of the tire in contact with the ground, leaving larger ones to be mitigated by the springs. Most drivers have noticed that there is a speed of maximum vibration with any particular car, and this is not always the highest speed; but the whole question, involving the period of vibration of the car as a whole, and its wheels and axles separately, deserves fuller consideration.

Motor-Cars at Bexhill.

MOTOR-CARS are very much in evidence at Bexhill-on-Sea, the familiar sound of the horn being heard at all hours of the day. The cars, which make frequent trips to Hastings, Sidley Green, and other places in the neighbourhood, appear to be well patronised by the visitors, and must prove an additional attraction to a town which already enjoys so many advantages. Mr. Bradney-Williams, the manager of the Bexhill Motor Company, informs us that they have three cars in constant use, and are expecting another shortly. They are all 12 h.p. Daimler wagonettes, with omnibus tops for bad weather, built specially for them. Since the company started the service last Whitsuntide, business has been good, and they hope to be able to run through the winter, more especially between places which are not served by the railway. Automobilists who may think of running to or through Bexhill can obtain petrol or lubricating oil from the company, who have ample storage accommodation for a number of cars.

Horse-Breeders and Motor-cars.

MR. WYNFORD PHILIPPS, M.P., gave utterance to a very pronounced expression of opinion with regard to the future of horse breeding at the North Pembroke-shire Farmers' Club Show luncheon, at Fishguard, last week. Replying to the toast "Prosperity to the Club," he said there was a future for breeding hunters and cart horses and a future for cobs, because they would always be a fancy article. But he did not think there was going to be any future for breeding big hackneys. He believed the market for matched pairs to which he referred would be gone in ten years. The motor-car would absolutely substitute the pair-horse carriage. (Cries of "Never.") This was a matter of opinion. He was not saying what he wanted to see, but what he thought he was going to see, and if anyone saw anything he thought was of interest to breeders it was his duty to tell it. Where there was one motor-car in London last year there were twenty now, and they were being improved as fast as the bicycle was improved from the old bone-shaker to its present form. All the rich and highly-placed people were vieing with each other in driving them, and he was expressing his own opinion when he said they would hardly see a five hundred guinea match pair of swell hackneys in London in ten years' time. They should go on breeding small hackneys, cobs, ponies, and such like; go on breeding hunters, but if anyone had any high-priced hackneys he should sell them out when he could get a market for them. It was their duty to see what was coming in the future, and be prepared to meet it. The market for the carriage horse—he did not mean in a small way in the country, where there would always be some use for them—but the really valuable carriage horse, he believed, was going to die out.

The Numbering Question at Aberdeen.

At a meeting of the Aberdeen Town Council last week the Town Clerk read a letter from a certain Mr. H. J. S. B. Cunliffe, of Oxford, suggesting that the Town Council "should make a by-law to the same effect as that which now existed in Belgium and other countries, to the effect that all cyclists and motorists should be compelled to wear a metal plate bearing the name of the town issuing it, as also a number, the same as hansom cabs." The reading of the letter raised quite a storm in a teacup, Councillor James Gray (a local cab-hirer) de-claiming against "these heterogeneous vehicles that did as they

pleased," and strongly advocating the adoption of the suggestion. Councillor Kendall Burnett, while prepared to admit that there might be something in the suggestion made by Mr. Cunliffe, said it was quite evident that this was not a question for any individual Town Council to take up. He further pointed out that the writer of the letter had no influence whatever; he had been communicating with lord mayors and mayors throughout England, but that no action had been taken. Councillor Gray moved that the question be remitted to the magistrates for their consideration, a motion which was adopted.

An Italian Motodrome.

IN consequence of the prohibition of a motor-car race billed as starting from Padua, Italian automobilists have seriously tackled the problem of a motodrome. A site suitable for such a project has been selected and the moving spirits amongst the many automobilists of that country are now engaged upon the details, which it is hoped will place the undertaking upon a firm business basis. The proposed site is close to Brescia, equidistant also from Calcinate, Montichiari, and Ghedi. The track will be thirteen kilometres in circumference, bounded on the north by the Brescia-Verona Railway. To the south it will run parallel to the Brescia-Mantona road and will include a straight run of four kilometres. It also proposed to erect in addition two grand stands and other buildings incidental to a racecourse, club-house, *garage* and workshop.



ROUND ABOUT SNOWDON. ONE OF MESSRS. DEACON'S PLEASURE PARTY CARS.

Photo by

[Mr. J. H. Crompton.]

Random Justice.

PERHAPS the most disgraceful thing about automobile "justice"—except the infliction of fines at all, in most cases—is the utter absence of reason or proportion in the scale of these, which, depending on the "discretion of the magistrates," and varying inversely as this, is calculable by no known law. A short list of the amounts in a few cases picked at random from recent reports will illustrate this, and give food for reflection.

Locality.	Speed alleged.	Fine.
Cardiff.	Furious driving—10 miles.	£5 and costs.
Carlisle.	Over 20 miles.	£1 and costs.
Consett.	Over 20 miles.	Dismissed on payment of costs and a guinea to poor-box.
Braintree.	18 to 20 miles.	5s. and costs.
Bournemouth.	13 miles.	2s.
Bournemouth.	13 miles.	£1 and costs.
Ryde.	20 miles.	1s. and costs.
West London.	19 miles.	£5 and costs.
Epping.	30 miles.	£10 and costs.
Southampton.	16 to 18 miles.	4s. and costs.
Nottingham.	16 miles.	£5 and costs.

There is, moreover, little or no justification for these discrepancies in the attendant circumstances, none of which were marked by accident, and yet such flagrant inability to make "the punishment fit the crime"—flagrant, whatever view we may take of the criminality of going at 12·1 miles an hour, is to be accepted as "justice." It only needs a reference to any police column to compare these with the usual fines to drunken carters, furious butcher-boys—though these, unfortunately, seldom appear in court till they have knocked someone down—and there is no need to occupy space with such comparisons. Enough has been said, however, to show the necessity for some system of unification of penalties for corresponding offences, and incidentally, perhaps, for magistrates who are qualified for their office by legal knowledge instead of local property.

Trouble in Long Acre.

It was expected that a case of much interest to the motor-car industry would have been heard in the Chancery Court last week. The Mercers' Company are the owners of a considerable amount of property in Long Acre, which for generations has been one of the chief centres of carriage manufacture. During the past year several motor-car warehouses have sprung up in the same locality. It appears that the Mercers' Company have in each of their leases a clause which prohibits the use of any premises for dangerous occupations. They allege that automobiles in themselves and in their manufacture are dangerous, and they are seeking to restrain two of the tenants from infringing the terms of the lease. When the case was mentioned in court last week it was at once seen that it would be one of much importance, and the hearing was postponed until the 5th November.

Yorkshire Farmers and Motor-Cars.

At a meeting in York, last week, the members of the Yorkshire Union of Agricultural Clubs had under discussion the subject of motor-cars, the reckless conduct of many of their drivers, and the speed at which they are driven, an interesting and unexpected discussion arising. The subject came up in the form of a resolution from the Market Weighton and District Farmers' Club, strongly urging the Union to use its influence with the members of Parliament representing their interests, in urging upon the Government the desirability and necessity of a measure compelling drivers of motors to produce some test of efficiency, as well as to carry a distinguishing mark or number on some conspicuous part of the machine. Mr. A. Dunhill, of Market Weighton, explained how the resolution came to be passed. It arose through one of the members of the Farmers' Club being placed in jeopardy through the recklessness of a motor-car driver, who, when he saw the gentleman's horse had become restive and had thrown its driver into the hedge, merely shouted, "Hi, Hi! How are you, my friend? Good day!"—and then disappeared. Such conduct, which was not uncommon, created a discussion as to whether motor-cars should be allowed to usurp and monopolise the entire roadway. He moved a resolution in terms similar to that from the Market Weighton Club, with the addition that "drivers should be compelled to reduce speed when motioned to by persons driving." Colonel Lloyd-Greame, in supporting, thought some test of efficiency was necessary in the interest not only of those who happened to be driving on the road, but in that of motor-car drivers themselves. The members adopted the resolution unanimously.

Technical Education.

It is to be feared that many more tons of petrol will have to be consumed in this country before a professorship of automobilism comes into being, though such an educational functionary is not unknown on the other side of the Channel; but it is an encouraging sign of the times that a wish for the services of such should be expressed, as we heard the other day in a small country town with a well-appointed technical

school. The tradespeople thereof are many of them quite alive to the business value of motors, and one, speaking of the difficulty of training existing drivers to the use of motor vehicles, expressed a wish that such instruction formed part of the County Council technical courses, with the opinion that it would soon be quite as important as the courses of plumbing, carpentry, and the like. Perhaps when the governing bodies in question have quite finished their attempts at restricting the new industry, they may—who knows!—repent at the eleventh hour and try some such means of encouraging it.

End to End on a Werner Motor-Bicycle.

STILL another end to end automobile trip has to be recorded, this time by a Werner motor-bicycle, ridden by Mr. Hubert Egerton, of Weston Rectory, Norwich. It will be remembered that Mr. Egerton went over the end-to-end course in December last in a Locomobile steam car, and although he had hardly ridden 100 miles on a motor-bicycle, the idea of a run from Land's End to John o' Groat's no sooner suggested itself to him than he started to carry it out, successfully accomplishing the trip in four days and eight hours. On two of the days continuous rain was experienced, while at Bristol a delay of twelve hours was caused by the difficulty of obtaining inlet-valve washers; the valve being eventually "botched" up with asbestos twine. Leaving Land's End on the morning of Saturday, the 3rd inst., Bristol was reached the first day. The second day's run was to Preston, and the third from Preston to Perth, *via* Shap Fell, Carlisle, and Edinburgh. Up Shap Fell the machine behaved well, making the first seven miles of the ascent without it being necessary to resort to pedalling. After leaving Edinburgh wet weather was encountered, the ride to Perth, what with the rain and the darkness, being anything but pleasant. The fourth day saw no improvement in the weather, the journey from Perth to Golspie *via* Inverness being again made in the rain, which, as Mr. Egerton puts it, "converted my air-cooled motor into a water-cooled." Between Blair Athol and Dalwhinnie the railway and road ran almost together for some distance. A railway train coming along and a clear road being available, Mr. Egerton let his motor go all out, eventually leaving the train in the rear, much to the interest of the passengers, who were all crowding round the windows of the carriages "watching the fun." The last day's run from Golspie to John o' Groat's was an unfortunate one for Mr. Egerton, for, two miles beyond Wick, a cyclist, on his wrong side of a straight broad road, and in broad daylight, ran right into Mr. Egerton, whose leg was cut very deeply and badly by the pedal of the cyclist's machine. As for the Werner, it was found that, as a result of the accident, seven of the spokes of the driving wheel had been wrenched away. A cart was obtained, in which Mr. Egerton and his machine were conveyed back to Wick. Undaunted by the accident Mr. Egerton got his machine quickly repaired and his leg attended to, and finished the sixteen miles which separates John o' Groat's from Wick. There have been many attempts to carry through end-to-end runs on motor-cycles, but this is the first occasion in which success has attended the attempt. Mr. Egerton is, therefore, not unnaturally proud of the performance and speaks in glowing terms of the "Werner" which carried him through so successfully.

FRENCH military experts are at present engaged upon a war motor which is being constructed at Saint Denis, and is expected to make its debut at the forthcoming army manoeuvres.

A SERVICE of electrical omnibuses has just been started between Reichenau and Payerbach, in Austria. Messrs. Jacob Lohner and Co., of Vienna, built the vehicles.

STOCKBROKERS and bankers in Wall Street, New York, have found a new use for automobiles since the activity in the stock market has become so pronounced. Several of the large houses employ automobiles now to carry messages from their offices to the new headquarters of the Stock Exchange. The vehicles can be seen during the busy hours of the day rushing along the streets carrying messenger boys and brokers.

THE IRISH AUTOMOBILE TOUR.



THE motor-car tour, organised under the auspices of the Automobile Club of Ireland, started from the Shelbourne Hotel, Dublin, on Thursday morning last week. There was a considerable gathering to see the start. The cars commenced to marshal at the rendezvous shortly before nine o'clock, and a dozen of various types were soon waiting in readiness for the drive to Waterford. Shortly after nine o'clock a start was made, Mr. R. J. Meerey, as pilot of the party, leading the way in his 9 h.p. Daimler; he was followed by Mr. E. F. James, of Knockdrin Castle, Mullingar, in an 8 h.p. Panhard. Three vehicles belonging to the Hon. Leopold Canning—a 6 h.p. Panhard, a 5 h.p. Century tandem, and a 6½ h.p. Century tandem followed next in order; and after them came Mr. G. G. O'Grady in a 5 h.p. Mignonette, Mr. C. Jarrott in a 7 h.p. Panhard, Mr. L. S. Macrory in an Orient Express, Mr. R. H. Fuller in a 4½ h.p. De Dion Voiturette, Mr. M. Grimshaw in an M.M.C. car, Mr. H. Du

Borris to Graigueenamanagh, where the hospitable rector, Mr. Burnett, treated the party to an afternoon tea. A fast run to Waterford followed, and on its termination Alderman W. G. D. Goff, the president of the Automobile Club of Ireland, entertained the party to dinner. At Waterford the number of cars was considerably augmented by the arrival of several English motorists. The interest taken all along the line of route in the passage of the cars indicated how keenly people of all classes realise that the tour may be a very potent advertisement of Ireland as a touring ground. The weather held up splendidly until the evening was well advanced. Amongst those who made part of the journey on the first day was the Chief Commissioner of the Metropolitan Police.

SECOND DAY.

Over a dozen cars left Waterford for Cork on Friday morning (the 9th inst.). Mr. Goff, on his Panhard, joined the party, which was also accompanied by several local motorists. At Dungarvan a most demonstrative reception was accorded, a



A PLEASANT MOTORING PARTY AT GRIMSTON, NORFOLK.

Cros in a 16 h.p. Panhard, Dr. J. H. Colohan in his 7 h.p. Daimler, Mr. Valentine Grace on a motor-tricycle, Dr. Glenn in a Daimler, Sir H. B. Bacon in a 12 h.p. Panhard, Rev. the Hon. B. J. Plunket in a De Dion voiturette, Mr. W. R. Dalton in a Marshall car, and Mr. T. R. Bradshaw in an Argyll car.

The Panhards and Daimlers setting a good pace, the open country was soon reached, and over the well-surfaced main road to Nass the going was excellent. A stiff wind prevailed, but the road was almost free from dust. Heavy clouds threatened rain, but fortunately the dullness went from the sky, and the tourists were treated to smiling panoramas of the lovely country which lies almost undiscovered in the heart of Ireland. A halt for lunch was made at Carlow, the cars being drawn up in the market place, to the great delectation of the inhabitants. Resuming the journey, a rapid passage was made through

native enthusiast having published telegraphic bulletins of the progress of the party through the principal towns. At Cappoquin, too, a great reception was in store for the motorists, the entire town seeming to have turned out to receive them. The glorious scenery along the Blackwater from Cappoquin to Lismore was keenly enjoyed. At Lismore Castle a lengthy stay was made, and from many an ivied terrace and battlement peeps were taken by the visitors at the enchanting Blackwater, which at this point is not inferior to the loveliest spot on the Rhine. A fairly rapid passage was made via Fermoy to Cork, the roads gradually deteriorating until within a few miles of that city, when they became abominable. The contrast between the roads of that district and those of Dublin, Carlow, and Waterford was very marked. The people of the villages *en route* assembled to welcome the motorists, and everywhere they were greeted with enthusiasm. Cork was reached about six o'clock,

and just then the weather changed, the late arrivals reaching the southern capital in a downpour.

THIRD DAY.

Saturday's journey from Cork to Killarney extended over a distance of 95½ miles. Thirteen cars, all told, took up the running. The weather was exceptionally good, belying all the gloomy forebodings to which the previous night's experience had given rise. A warm sun, a stretch of country rich in all that makes the southern landscape charming, gentle streams, vistas of bold hills, with occasional broad stretches of rich meadow land, continued to make the motorists pleased with themselves and everybody else. From Cork the cars sped north-west to Macroom, then there was a dip to the south to Keimaneigh Pass, and still further to beautiful Glengariff, which looked its best bathed in glorious sunshine. The way then lay northward through Kenmare into Killarney. It was a choice trip in the way of scenery, but the roads were for the most part risky. Up among wild mountains the track climbed till finally a hair-raising downward sweep of ten miles over a narrow road twisting back on itself incessantly took the tourists to the level once more. The sensation was delightful, notwithstanding the knowledge that any failure to negotiate a corner meant exceeding the narrow margin of safety and plunging over the mountain side. No incident beyond a few punctures, however, occurred on the road, and everyone expressed themselves highly pleased at the run. Mr. Fuller's car ran into the grounds of the Lake Hotel at five minutes to seven, and Mr. Du Cros came in a quarter of an hour afterwards. Mr. Grimshaw joined the party here, having driven all the way from Cashel.

FOURTH DAY.

The tourists had perforce to keep quiet on Sunday. Even Killarney never witnessed such a downright torrential day. There were a few brief spells of sunshine, but they only served to mock the visitors, who were hardly able to leave their hotels.

FIFTH DAY.

Monday was on the whole fine, though there was at least one heavy bout of rain, which made the roads muddy and sticky, and did not tend to increase the comfort of the party on the first portion of their journey to Waterville, for which all the cars started early in the morning. Twelve vehicles assembled at the Railway Hotel, Killarney, and then made a triumphal progress through the town. This was the first time the "city" of Killarney had been passed through by such a large number of cars, and needless to say the incident was regarded by the natives and the tourists stopping at the various hotels as unique. The route followed was via Looberidge, Kenmare, Parknasilla, Caberdaniel, and Derrynane. At the latter place Mr. R. J. Meccredy entertained the tourists to afternoon tea. One of the events of the day was the ride of Messrs. Jarrott, H. Du Cros, and Fuller, with Mrs. Fuller and Mrs. Edge, through the Gap of Dunloe with three cars. This is the first time the feat has been accomplished, owing to the steepness and danger of the ascent and roughness of the ground. The advent of the vehicles caused some sensation among the natives, who had never before seen a motor-car in that famous tourist haunt.

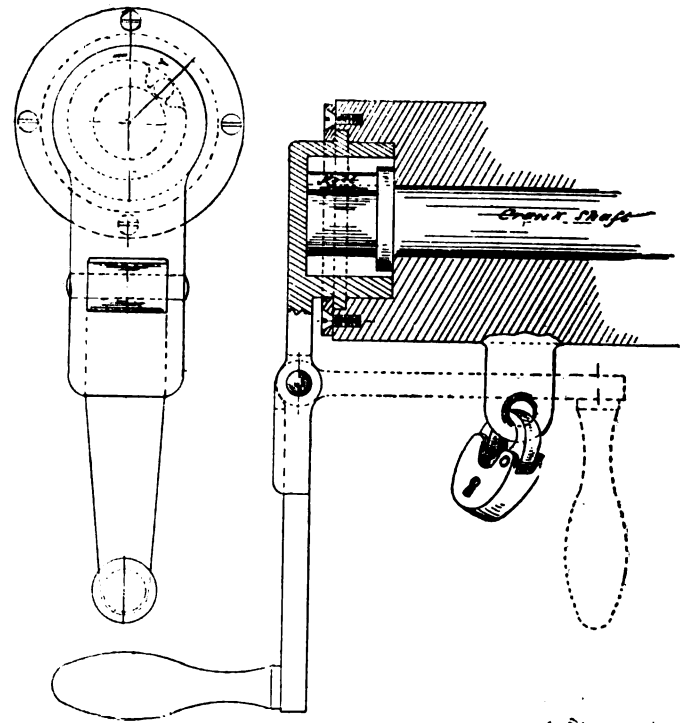
SIXTH DAY.

On Tuesday an early start was made from Waterville for Killarney, via Caherciveen and Killorglin; a striking feature of the run being the trip over Comaakiska Pass, through a dense fog. The sensation was most eerie as the cars passed through the white fog and glided swiftly round sharp bends with engines running out of gear. Soon after leaving Waterville, Mr. Jarrott's car, in avoiding a cart which had swung across the road, crashed into a wall. No mishap beyond a broken spring resulted, and he was soon able to resume the journey. Some of the party who had returned to Killarney on Monday made for Listowel on Tuesday, there to rejoin the general body on Wednesday. Dr. Colohan on his Daimler, Mr. Grimshaw on his M.M.C. car, and Mr. Murdock on his De Dion voiturette took up the running through an exquisite stretch of North Kerry, the scenery of which is varied by mountain range, vistas of sea, gentle inclines of bright pastures, and expanses of brown bog

land. A quiet pace was maintained, and the surrounding natural charms were thoroughly enjoyed. The roads, on the whole, were excellent and the weather fine, the sun sending down broiling rays at times. The curves to be taken were acute and the descents rapid, but the motorists had not the slightest difficulty in accomplishing them with success. In Tralee, where a slight halt was made, a considerable crowd collected. The short run was easily accomplished in about three hours, and then Listowel was aroused from its lethargy by a series of spins round the town, in which some of the residents partook, under the guidance of Dr. Colohan and Mr. Grimshaw. On Wednesday the entire party journeyed together to Limerick.

THE KING STARTING DEVICE FOR PETROL MOTORS.

IN starting a petroleum-spirit motor, it is very desirable to prevent the crank handle from being pulled out of the operator's hand if the engine should jerk backward. The device shown in the accompanying illustration has been designed by Mr. J. D. King, of 433, De Kalb Avenue, Brooklyn, U.S.A., to overcome the possibility of this happening, and consists of a chamber attached to the crank handle, but set eccentrically with the shaft, which it is intended to rotate in this chamber, and in which is placed a roll, or ball. In the illustra-



tion the roller is shown, although it can be equally well designed to employ a ball. As the handle is turned to the right the roller wedges between the inner wall of the chamber and the shaft, causing both to rotate together, any backward movement of the shaft releasing the crank immediately. This overcomes any backward kick, which is very objectionable, as the crank handle is thereby jerked from the hand and, revolving, strikes the back of the hand before it can be withdrawn.

It will be noticed that the crank is hinged so as to spring up and be locked when not in use, instead of hanging down, swinging backward and forward.

THE Brussels *Soir* states that Prince Albert, on leaving the Chateau of Amerois on a motor-car recently, ran into a ditch. The Prince was thrown into the ditch, but was not hurt.

THE AUTO-SPARKER.



FOR many years after the successful gas engine was designed the incandescent tube was used for ignition in gas and petrol motors. This, for many reasons, was unsatisfactory, and manufacturers turned their attention to electric ignition by means of batteries, to magneto-electric ignition devices, and later to ignition by means of small dynamos, generally belted to the engine to run at their rated speed. Batteries were, of course, still required to ignite the engine until it reached its normal speed, at which time they were cut out with a switch and the dynamo cut in. This arrangement effects a large saving in battery renewals, but increases the first cost, and when the batteries fail it is impossible to start, and on variable speed engines the dynamo is either above or below its normal

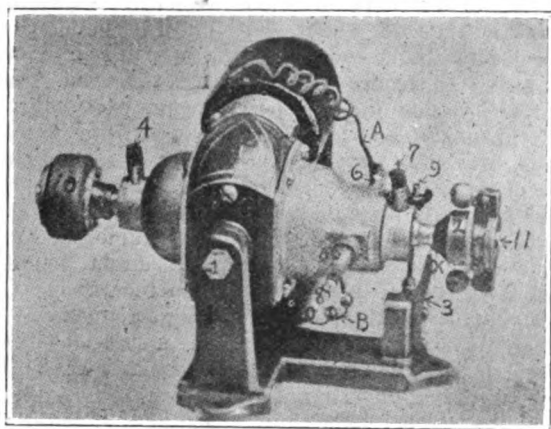


FIG. 1.

speed most of the time, which gives either a burning spark or a weak one varying according to which way the speed of the motor varies.

Almost two years ago the idea of applying a speed varying mechanism was conceived by Mr. Homer N. Motsinger, of the Motsinger Device Manufacturing Co., Pendleton, Ind., which would be automatic in every particular, utilizing the turn over of the engine necessary to compress the gas to also furnish the first spark. Not only was it necessary to make something that would stand an enormous amount of abuse, but it was necessary to make it applicable to all motors that were equipped with the usual make and break device for properly timing the spark. The Auto-sparker introduced by this company gives, it is claimed, a constant voltage due to its constant speed through all variations of the engine's speed—from that used in turning it over to start, up to any speed the motor is capable of running. This fulfils all the requirements of a battery without any renewals whatever; not even a switch being needed, the Auto-sparker and spark coil constituting the full equipment.

All dynamos have a certain speed at which they generate their normal current, and this speed cannot be far exceeded without danger. To ignite the gaseous charge by a dynamo as easy as by batteries the dynamo must be running at its normal speed in turning over the fly-wheel in starting. This is done in the Auto-sparker by using a very small friction-wheel against the fly-wheel—small enough, in fact, to run the dynamo at full speed when the engine is turned slowly by hand to compress the gas in the cylinder. When the motor takes the first explosion and finally runs up to its full speed it will be seen that unless prevented the Auto-sparker will run from six to twenty times as fast as it should. This is prevented and regulated by a governor on the end of the armature shaft, which, when the speed reaches its normal, pushes a taper sleeve (2, Fig. 1) in toward the bearing, causing the shaft to rise on a steel point (3), which raises that side of the Auto-sparker up, and forces the pulley (10) down away from the fly-wheel, since the entire machine is pivoted on the point (1) and a corresponding point on the other end. This action allows the friction wheel to touch and rise off the

fly-wheel just enough to at all times keep the speed desired, regardless of the speed of the engine or the size of the fly-wheel.

It will be noted from the above that friction and the proper control of it play an important part in the construction of the Auto-sparker. In the construction of the friction pulley a hard compressed paper made under forty tons pressure is employed. The Auto-sparker is pivotally mounted on its base so as to allow for slightly imperfect fly-wheels, and to allow the action of the governor and spring which forces the pulley out of and into contact with the fly-wheel, the regular partly-slip and partly-lift action. This keeps the paper friction pulley perfectly round and smooth if the fly-wheel is emiered off smooth. The pressure of the friction pulley is regulated by means of a tension spring and thumb-nut. When the dynamo is properly set this tension spring is pivotally strained about one-sixteenth of an inch, and the shaft is raised off the steel point about one-sixteenth of an inch, and constantly held in this position by the contact of the friction pulley with the fly-wheel. When the thumb-nut is unscrewed to its last thread the speed of the dynamo is about 600 revolutions per minute, and the amperage is, say, one, and the voltage, say, three. By screwing down the thumb-nut the position of the Auto-sparker is unchanged, but the contact of the pulley is increased until a speed of 1,200 to 1,300 revolutions per minute may be had and the amperage is, say, three, and the voltage ten. The makers state that the device gives a good spark at a speed of 700 revolutions per minute, and that the speed should not exceed 1,200 revolutions. Thus by the tension spring the speed of the dynamo and the size of the spark may be regulated at will without any danger of burning out the ignition points or damaging the machine.

In the construction of the dynamo a magnet of special soft cast-iron is used, wound with super-saturated fields. The armature is made of soft laminated steel, and insulated by best rubber fibre, wound in perfect balance and water-proofed with shellac. The laminations are held in place by brass nuts and the whole is mounted on a $\frac{1}{2}$ in. shaft having $1\frac{1}{4}$ in. renewable phosphor bronze bearings. The friction pulley is mounted on iron bearings and held in place with counter-sunk, case-hardened set-screws. The commutators are insulated with mica, and the brushes used are round special gauze, held in place by phosphor bronze springs. The springs and brushes are insulated by hard rubber bushing, $\frac{5}{8}$ in. in diameter.

The Motsinger Company state that they do not claim that the Auto-sparker will spark an engine that no batteries will spark, and that it is not a cure-all for old engines that have no

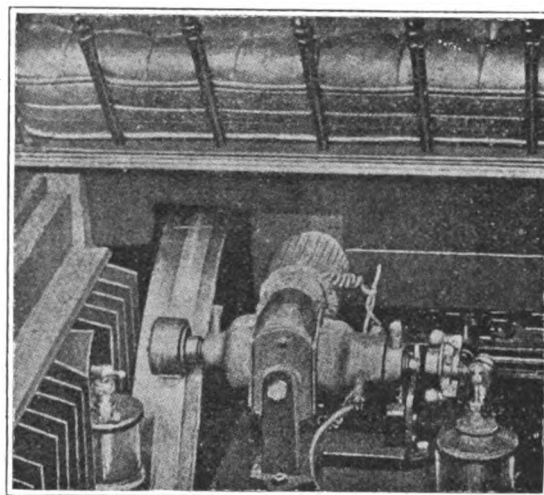


FIG. 2.—THE AUTO-SPARKER FITTED TO A CAR.

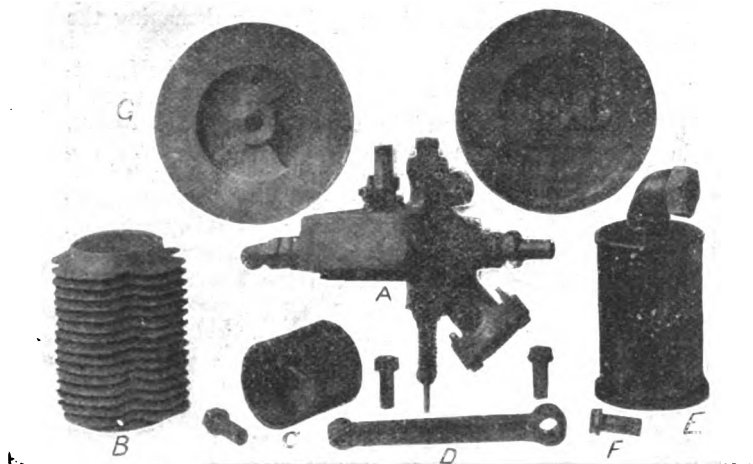
compression, no contact points, and are past running on a spark from even an electric current. They claim, however, that it will work with the same contact making and breaking devices on the engine that are used with battery ignition. All that is required is that the motor has good points which break properly, and that the fly-wheel can be turned over in the direction it is to run at a

speed that is usually had in starting with battery ignition. The Auto-sparker measures 10½ in. by 10 in. by 6½ in., while its weight is 23 lb.

We are informed that the Panhard and Levassor Company of Paris have for some time past been experimenting with the Auto-sparker, and after having convinced themselves of its practical value have decided to use it extensively, having acquired the French patent. The device has been adapted to the four-cylinder engines of the large Panhard racers, supplying the current for four spark coils, with satisfactory results.

CONVERTING DE DION MOTORS.

THE London Auto-Car Company, of Gray's Inn Road, W.C., who seem to make quite a speciality of converting De Dion motors into larger sizes, have just brought out a set for converting De Dion engines of either 1½ h.p., 2½ h.p., or 2¾ h.p. so as to develop 3½ h.p. One of the new sets was brought under our notice the other day. As will be seen from the accompanying illustration, it consists of a special water-cooled head with exhaust opening 1½ in. diameter, a new 80 mm. cylinder, corresponding piston, and connecting rod, new silencer, and two specially weighted fly-wheels, the latter being to replace the fly-wheels usually fitted. We understand from Mr. C. Rush that



several small engines have, by utilising the new set, already been converted to motors giving 3½ h.p. with satisfactory results.

Mr. C. FRISWELL has lodged an appeal against the decision of the Comptroller General of Patents in the matter of the application of Osborn and others for Patent No. 22,762 of 1900 covering the De Dion exhaust valve controller.

Mr. GEORGE F. CHAMBERLAIN, former president of the Automobile Club of America, is quoted as saying that several wealthy automobile enthusiasts are planning a plate steel or sheet steel speedway, to be built either in Jersey or on Long Island. It will cost over £200,000, and will be used exclusively for automobile racing. If the present plans do not miscarry the proposed racing road is to be 100 miles long, and if possible straight.

MOTORISTS should erect a monument to the Buckinghamshire County Council. That large-hearted body has framed a bye-law, sanctioned by the Secretary of State, to the effect that "No person shall place, deposit, or leave any article of glass, or any broken glass, or other sharp substance (not being road material), on any street or public place, in such a position as to be likely to cause danger or injury to passengers or damage to property."

CORRESPONDENCE.

THE BURSTING OF EXHAUST BOXES. TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—In reply to the query of Mr. J. W. Coulson as to the cause of his exhaust box bursting, the following is no doubt the reason. One or more of the charges of unexploded gas and air have been ignited in the exhaust box. This opens up two questions. First, how did the unexploded gases get into the exhaust box? Second, How did they get ignited? The reply to the first query, presuming that Mr. Coulson refers to a car with electric ignition only, is that, on account of a short circuit, a broken circuit or a weak spark, his engine has missed fire for one or more strokes. The second question is answered in two ways: either the flame from the last explosion penetrated far enough through the exhaust valve to meet the unexploded gas in the exhaust box, or a particle of incandescent carbon already in the exhaust box was the cause of the ignition. The sudden closing and reopening of a choke valve, if there is such a thing on his car, would have the tendency to produce the same result, probably for the reason that a partial vacuum is caused in the cylinder by the stroke which endeavours to draw mixture, but finds it almost impossible owing to the choke valve being closed. The mixture of gas and air for the next few strokes, on reopening the choke valve, would not have assumed its correct proportions and would be liable not to explode in the cylinder, and might find sufficient air in the exhaust box to make suitable conditions for an explosion. In order to prevent the recurrence of this difficulty, thoroughly verify all the sparking arrangements, and use the choke valve with caution, leaving a sufficient interval between the closing and reopening of it, and doing both operations very gradually.—Yours faithfully,

J. J. MANN.

SELF-PROPELLED FIRE ENGINES.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—As the question of motor fire engines has lately attracted considerable attention, it may be of interest to mention that the first self-propelled fire engine, in fact, the first steam fire engine of any kind, was invented by Paul Hodges, an American, years before Merryweather or Hodges Fire Brigade were thought of. About the years 1860 and 1861 a motor fire engine was made by a Mr. Roberts, of Millwall, and this engine steamed over from Millwall to a large fire at Woolwich Arsenal, where I believe it did good service. Mr. Roberts also constructed steam fire engines for the London fire establishment, now the M.F.B. Although his engines did good work at the great Tooley Street fire they were not, however, appreciated, and Mr. Roberts died of a broken heart.—Yours truly,

MOTOR.

THE DE DION VOITURETTE.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—In answer to Mr. Jackson's query, it is not unusual for the gearing on voituresses to "sing." In some cases this is due to the gearing not being correctly depthed, and in others not being correctly cut. The best way out of the trouble is to have a raw hide or fibre—preferably fibre-wheel, as this is not affected by oil or grease—in place of the Phospho-bronze wheel. If the pinion is not smaller than fifteen teeth, the cheapest way is to replace the steel pinion with fibre, but if money is of no object I advise replacing the large wheel with fibre. The Motor-gear Engineering Company make a special feature of the fibre wheels, and I would recommend your correspondent to write to them.—Yours truly,

W. A. O.

A SUGGESTED CLUB FOR MOTOR-BICYCLISTS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Considering the growing popularity of the motor-bicycle and the rapidly-increasing number of riders of these machines, I am strongly of opinion that the time has come when

a club for motor-bicyclists is needed. There can be no doubt that the motor-bicyclist requires to be specially catered for. He is undoubtedly out of his element among riders of ordinary cycles, and, as regards joining in runs with motor-cars, he is looked upon as being very small fry in the motor world. Feeling sure that there is a great future for the motor-cycle, I shall be glad to hear through you from any riders who are disposed to form a club, so as to arrange a meeting at an early date to discuss the pros and cons.—Yours faithfully, T. UNDERWOOD

GEAR TROUBLES.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I have noticed frequent reference to the above in the *Motor-Car Journal*, and for the information of your correspondents I should like, with your permission, to state my experience with motor gear lubrication. My car is one of the New Orleans make. At the first I had much trouble with gear lubricants, and although I had samples of grease from several makers, none of the samples lubricated so efficiently as to make the gear noiseless, although some were better than others. I have had considerable experience with frictional bearings of all kinds, and quite 95 per cent. of the over-head wheels (trolley) on electric tramway cars are bushed with my oil-less bushes. I have experimented with different models of small gear wheels with the same system of lubrication, preferring not to apply it to my car gear until I was certain as to its success; but I have found that motor-car gear wheels, as at present constructed, must be lubricated with unctuous materials. I have, therefore, adopted an intermediary plan by making a composition partly of an unctuous nature and partly metallic; and have been using this for some time, with every evidence of success. My gear is now practically noiseless, and I have frequently passed cycling friends on the road who say they have not heard my car approaching until almost on a level with them. I do not need to apply the lubricant oftener than once a week at the outside, and then only a small quantity, and my gear seems to be scarcely worn, although it has run a fair distance. I may say that I am not either directly or indirectly interested in the manufacture or sale of gear lubricants, but have thought that it might at some future time be worth going into; as motor-car gear lubrication is going to be an important question in the future.—Yours truly, W. A. ENTWISTLE.

THIRD PARTY INSURANCE RISKS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I notice in your issue of the 3rd inst. that a correspondent is inquiring about third-party insurance for motor-cars. I may mention that Mr. Henry Kennett, jun., 46, Chapel Street, Islington, is agent for several insurance companies, and is in a position to effect third party risks, also fire and theft, on very reasonable terms with some of the best companies. He has effected my insurance at about £3 5s. I might mention that he is also an enthusiast in the motoring pastime.—Yours truly, JAMES LOUIS BROWN.

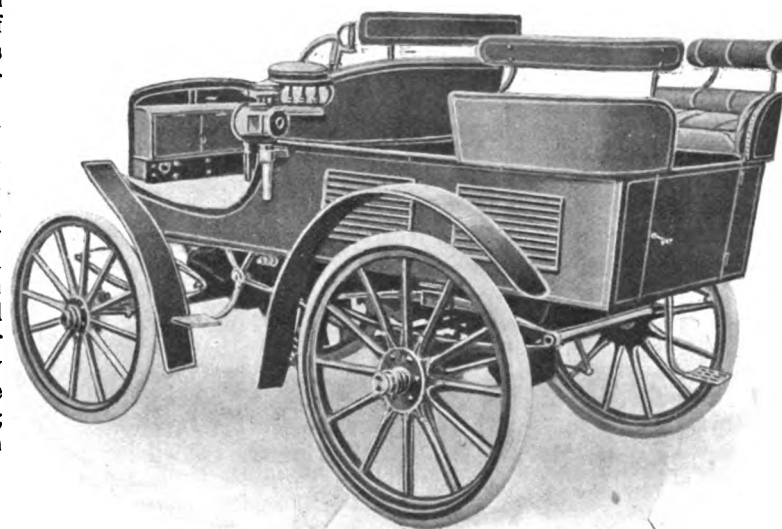
Re Third Party Insurance Risks.—Mr. J. H. Davison, of Thornbury, Whyteleafe, Surrey, writes: "If your correspondent H.G.E.C. cares to send me his address, I should be pleased to give him all possible information as to the cheapest method of insuring against accidents to 'third parties,' car, and driver of same, under a neat inclusive policy."

A MOVEMENT is on foot in Melbourne to form an Australian Motor Club.

THE Right Hon. A. J. Balfour has now received his new 7 h.p. light Panhard and Levassor carriage, for which he has been waiting so long. Mr. Balfour went out for a spin on the car last week with Mr. C. Jarrott at the helm, and he has since then covered over 150 miles, and is highly delighted with it. The car is painted dark olive green, edged with black and a fine white line and looks exceedingly smart; the brass-mounted levers and body and two brass Bleriot lamps also add to the smart appearance of the vehicle.

THE ALBION TONNEAU CAR.

THE accompanying illustration shows a 7 h.p. tonneau car, the latest production of the Albion Motor-Car Co., 169, Finnieston Street, Glasgow. The motor is petrol driven, and is of the two-cylinder horizontal balanced type. It develops 7 h.p. on the brake when running at the maximum speed of 700 revolutions per minute. It is fitted with an adjustable governor and, when desired, with an accelerator to increase the engine speed. The power of the engine is controlled by a variable expansion gear, by means of which the engine can be worked from zero up to full power, and the speed of the car regulated from a crawl up to top speed. The car has two forward speeds and a reverse motion, controlled by a single lever, the changes being obtained by a special arrangement of clutches and gear wheels always in mesh. The gearing is enclosed and runs in oil. The power is transmitted to the rear axle by one central driving chain. The ignition is electrical, the current being obtained from a magneto-generator of simple and reliable design. The wheels are of the artillery pattern, with hardwood spokes, and are fitted with solid rubber



THE ALBION 7 H.P. TONNEAU CAR.

tires. The Albion car appears to be meeting with success in Scotland, several users of the vehicles speaking enthusiastically of the results achieved with them.

A SERVICE of motor-cars has just been started between Sfax and Soussa, in Tunis.

THE French Budget for 1902 contains a proposition to collect from the refiners of petroleum spirit a tax of 1.50 francs per hectolitre.

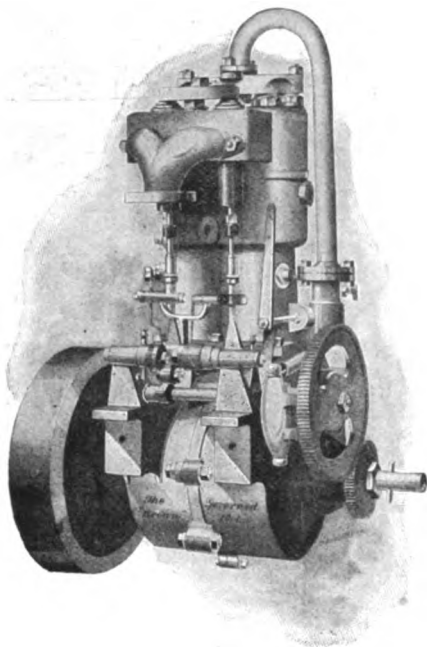
IN Italy some successful experiments have been carried out with a new motor-car destined for railway protection in case of war. The car is armoured with Bessemer steel plates, is propelled by a 7 h.p. motor, and carries two Maxim guns, one fore and one aft. The total weight when ready for service is only 1,400 kilograms.

WE believe that the first instance in which electric carriages have been used on the occasion of a wedding occurred on the 8th inst., when Mr. W. R. Coleridge Beadon, F.G.S., of Oorgaum, S. India, was united to the daughter of Mr. Douglas E. Onslow, J.P., of Wood House, East Putney. The ceremony took place at Holy Trinity Church, Wandsworth, and after the usual wedding breakfast the happy pair were conveyed to St. Pancras in an electric brougham, which had been placed at their disposal by the City and Suburban Electric Carriage Company.

THE GENERAL AUTOMOBILE AGENCY, D. Farman, Man., Spare parts for 8 h.p., 12 h.p., 16 h.p. PANHARD'S in STOCK, 100-104, Long Acre, W.C.

THE "BROWN" GOVERNED PETROL-MOTOR.

IN introducing the new petrol motor shown in the accompanying illustration, Messrs. Brown Brothers, Ltd., of Great Eastern Street, London, E.C., state that they have studied the prevailing opinion that the single-cylinder high-speed engine must give place to the slow-running double-cylinder governed engine of at least six brake horse power. The use of the new motor on a car of *tonneau* pattern, which should weigh between ten and twelve cwt., reduces the necessity of changing speeds at every small gradient, the engine having an ample reserve of power. When the clutch is used and the engine out of gear it does not race and cause inconvenience through excessive vibration. It is therefore much easier to handle in heavy traffic. As will be seen, the motor is of the double-cylinder water-jacketed type, giving six brake horse power at 850 revolutions, and by the use of the accelerator will work up to seven brake horse power. The governor gear is of the well-known Daimler pattern. All the working parts are thoroughly hardened



and carefully fitted. Special connections are provided for oiling the cylinder and other parts of the engine. Electric ignition fitted with means of advancing and retarding the time of sparking is adopted. The carburettor used with the motor is of special design; it has no float or any parts likely to get out of order, is supplied fixed to the engine, and only requires connecting to the petrol tank. The engine crank casing is made of aluminium, and is oil-tight. It is provided with lugs, so that it can be easily fitted to the frame of the car. The cylinders are of hard grained cast-iron, bored to gauge. The crank shaft is made from one piece of steel, machined all over, and the bearings are fitted with white metal. The valves are all easily removable for examination or regrinding. A heavy fly-wheel is provided, one side being coned for the friction clutch. The exhaust elbow is large, and provided with a flange for connecting up. The engine weighs complete 174lb., and its dimensions are:—Height over all, 2 ft. 6 in.; width over all, 1 ft. 3 in.; and length from end to end of shaft, 1 ft. 11 in.; and we may add that all parts of the new motor are made on the interchangeable system.

A PUBLIC trial of a Singer motor-bicycle was recently given at Cue, Western Australia, by Mr. Marshall, of the firm of Marshall and Forman, cycle makers, in that town. After running a few times up and down Austin Street, Day Dawn was visited. A crowd quickly gathered, as an automobile had never been seen in the district before.

CONTINENTAL NOTES.

BY "AUTOMAN."

CHARRON and one of his partners will leave Paris at the end of the present month for a trip to America, where it is intended to organise an automobile depot. It has been reported that Fournier and Tod Sloan were connected with this undertaking, but the rumour is entirely unfounded.

THE Belgian Automobile Tour has been abandoned. The matter was discussed at a meeting of the Touring Committee of the A.C.B., when it was pointed out that the projected tour had been already postponed on account of the Paris-Bordeaux and Paris-Berlin races, and that, the season being so far advanced, it would be wiser to put off the tour until the commencement of the next automobile season and to run it in connection with the exhibition.

THE Automobile Club of Flanders has just held a "Concours de Pronostics," which is a title rather difficult to translate, but which might be rendered most intelligible in English by calling it a "Say how quick you intend to travel race." The competition took place between Ghent and Blankenberghe, a distance of thirty-five miles, and the winner was the driver who the most nearly realised the speed at which he had declared he would travel. An observer was placed on each of the competing cars whose business it was to see that the driver employed no means except his own judgment for estimating the speed at which he was travelling. The winner was M. Hebblewick on a Delahaye, who estimated his speed at sixteen miles an hour and exactly realised his anticipations. A competition of this kind would be most useful in England and would save a great number of automobilists from having to waste their time in the police courts all through having so little experience in estimating the legal limit, and "Automan" most respectfully suggests a series of these competitions to be organised by the A.C.G.B.I.

MADemoiselle JEANNE LAUGA has the honour of being the youngest certificated and qualified *chauffeuse* in France. She is a born Parisienne and is only seventeen years of age; the other day she passed without any difficulty her examination before M. Douat, the Engineer of the Mines Department, prior to starting off to drive her parents for a tour in Auvergne.

THE dispute in Brussels about the automobile exhibition has unfortunately not yet been settled, and there is a strong likelihood that there will be two exhibitions next year—one organised by the Union Veloce and held in the Pole Nord, and the other organised by the Chambre Syndicale de l'Automobile and the A.C.B., and held in the Hall du Palais du Cinquantenaire.

ONE HUNDRED AND EIGHTY *chauffeurs* had to appear the other day before "their betters" in the police court of Sèvres, the picturesque little spot not far from Paris, on the banks of the Seine, and from whence comes the world-renowned porcelain which is known by the same name. They had to answer to the charge of furious driving. The magistrate's name was Clement, and the manner in which he tempered justice with mercy did not belie his good name, for most of the offenders got off with a fine of one franc and the costs, about four francs. The magistrates of country police-courts in England would do well to take a lesson, for in inflicting similar fines they would be doing their duty and at the same time not doing harm to a young national industry. It is surely a gross miscarriage of justice and a parody on common sense to fine an automobilist £5 and costs for exceeding the legal limit of speed on an open road in the country, and with not a soul in sight. It would be well if it could be pointed out to them that every time they fine in such an unreasonable manner when there is a perfectly harmless breach of the law they are hammering nails into the coffin of English industry.

THE motor-car is no respecter of persons, and no less a person than the mother of the Queen of Spain might have been seen the other day *en panne* on the Bréthencourt Hill, whilst on her way to Ourdan, in the department of Seine and Oise. After an hour's fruitless efforts a noble beast of burden had to be requisitioned to drag the royal car to its destination.

It would be perhaps a good thing for the world at large if there could be a law against vested interests, that terrible opponent to everything new and improved. Here is poor Switzerland, "a free Republic," thinking it is going to turn back the hands of the clock of progress and prevent the automobilist from passing over its mountain roads, and all because of the loss there might be to those whose business it is to hire horses and carriages to the traveller. A correspondent of *La Locomotion Automobile* tells how he was stopped on his motor-bicycle and absolutely refused permission to proceed. It is to be hoped, however, that before long the hotel-keepers will realise that this stupid legislation is taking motorists to other districts and then we shall hear quite another story.

At the time the *Journal* was going to press last week, and too late for publication, the courageous young Brazilian, M. Santos-Dumont, was making another attempt to win the prize offered by M. Henri Deutsch de la Meurthe. At the start he noticed a slight leak, but considered that his task was so simple that a little loss of hydrogen would make no matter. Amidst immense enthusiasm, he doubled the Eiffel Tower in nine and a half minutes. In coming back, however, against the wind, and when nearly half way home, the leak became more serious, and the envelope of the balloon and some of the stays flapped against the propeller; the stays tore away the eyelets, thereby increasing the leak. M. Santos-Dumont was obliged to stop the propeller, which, of course, caused the balloon to sink towards the earth, and in descending the envelope caught against the sharp corner of a building and was ripped open. The courageous aeronaut received no injury and is hard at work on his No. 6, which he hopes to have out before the middle of September in order to win the Deutsch prize, which has been so nearly within his grasp.

THE hill-climbing contest which took place under the direction of the Automobile Club Dauphinois last Sunday deserves a special mention. I visited the place where the course was fixed some five years ago, toiling up the hill in a "savin." Vizille, the starting point, is an old-world town situated at the foot of the Alps, just where the lovely rolling, fertile country of the grain land of France changes for the rugged frontier of rocky mountains, which tower in the background snow-capped. For four miles there is a wide straight road, and a steady incline of $9\frac{1}{2}$ per cent. No better spot could be found anywhere for such a contest. The best time in the event was made by M. Kraeutler, who, in a 16 h.p. car, covered the distance of 6½ kilomètres in 7min. 2sec.

ACCORDING to reports, Mr. W. K. Vanderbilt's new Mercedes car, the "Red Devil," the successor of the "White Ghost," has been tested for its greatest speed and has developed an average of seventy-four miles an hour.

THE Scarborough and District Motor-Vehicle Syndicate (Limited) has been registered with a capital of £3,000, to construct, purchase, and work omnibuses and vans, appropriate for the carriage and transport of passengers and goods, etc.

THE other day we had an opportunity of inspecting, at Messrs. Hewetson's dépôt in Tottenham Court Road, W., the identical 10 h.p. Benz *tonneau* on which Mr. Ballin Hinde recently made a 700 miles tour from Cannes to Frankfurt, over the Lower Alps. The car looks none the worse for the work it has done.

EXPERIMENTS have recently been conducted by the post office authorities at Syracuse, N.Y., U.S.A., with a motor-tricycle for the collection of mails. Collections have been made from fifty-four city letter boxes in one hour and ten minutes, instead of in three hours, the time ordinarily taken in collection by horse-drawn vehicles.

THE LATIL FRONT-DRIVING VOITURETTE.

M. LATIL, of Boulevard Rabatau, Marseilles, France, has recently introduced a new voiturette in which the motor and transmission gear are located close to and connected with the front axle, forming an *avant-train*, which can, it is claimed, be fitted to any horse-drawn vehicle with but little alteration. The motor—an Aster vertical water-cooled engine of $3\frac{1}{4}$ h.p.—is supported in front of the forward axle; it drives

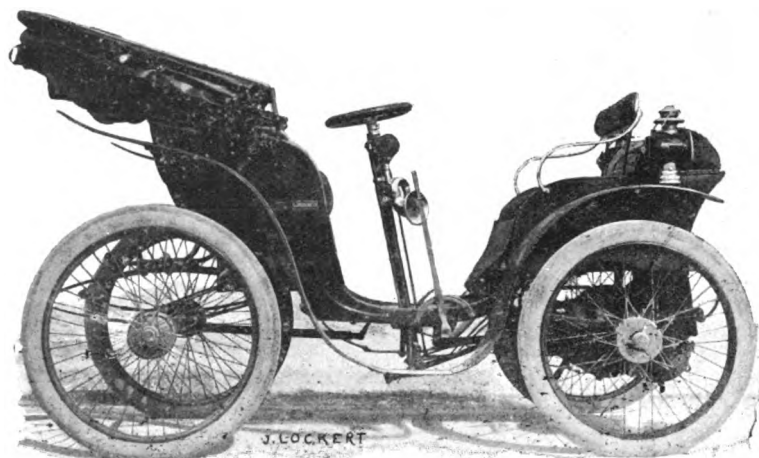


FIG. 1.—GENERAL VIEW OF CAR.

through the medium of a pedal-operated friction clutch, an extension of its crank shaft, on which is mounted a series of spur wheels, any one of which can be brought into mesh with corresponding pinions on the front axle, three speeds forward being provided for. The body of the little car is comfortably suspended, and is adapted to seat three persons. Inclined wheel steering is adopted, the maker claiming that the steering of the vehicle is not rendered more difficult by reason of the fore axle performing the double function of steering and driving. The various taps controlling the engine are grouped around the steering column, while the change-speed lever is placed within easy reach of the

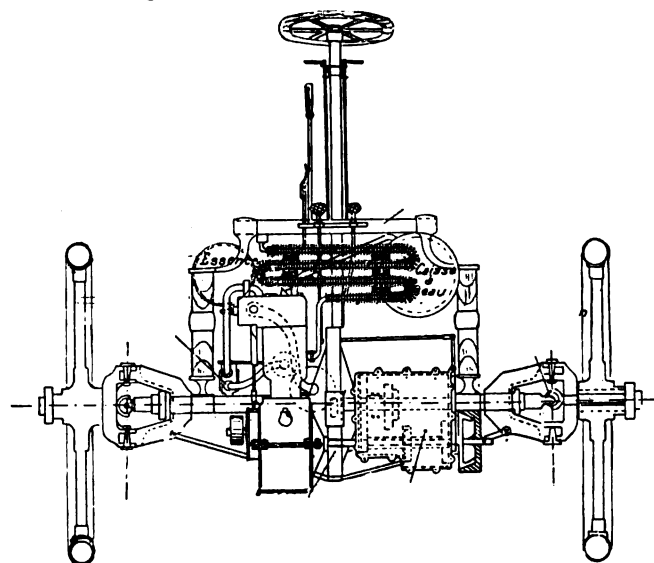


FIG. 2.—ELEVATION OF "AVANT TRAIN."

driver's right hand. The car can, it is claimed, attain a speed of twenty-five miles per hour on the level, and ascend gradients of one in eight at six miles per hour. It is claimed to be very free from vibration, and by reason of its low build exceedingly stable. Ample brake power is provided, a pedal operating band brakes on all four wheels being available. The weight of the little car complete is between 4 and 5 cwt. M. Latil is also making an *avant-train* voiturette on similar lines, but fitted with a 5 h.p. Aster motor.

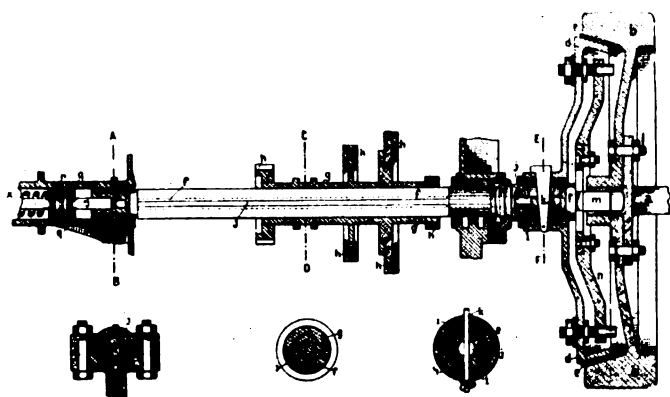
THE NEW PANHARD FRICTION CLUTCH.



THE new friction clutch recently introduced by the Panhard-Levassor Company consists essentially of a male cone, having a loose fit on the shaft which it drives, and capable of sliding on it to engage with a female cone under the action of a spring. In the friction-clutches of this type now in use the male cone is fixed to the shaft, and the whole, both shaft and cone, must be shifted; consequently as soon as the cones commence to engage the shaft begins to rotate. The resulting "moment" is transmitted from the shaft to the sleeve carrying the pinions. As at this point the lever arms of the "moment" are very short there is a great friction between the shaft and the sleeve which must be overcome in completing the engagement of the cones.

In the new clutch the shaft is not displaced, but instead a central rod fastened to the male cone. The relative displacement of the shaft is secured by means of brackets or driving pins engaging freely into openings at the end of lever arms forming an integral part with the shaft. As these driving pins are near the circumference of the cone the frictional resistance which they may offer to the lateral motion of the cone is slight, and the operation of clutching is therefore effected without difficulty.

The accompanying illustration shows a longitudinal section through the clutch. The smaller views are cross-sections through A B, C D and E F, respectively. The motor shaft *a* carries the



fly-wheel *b*, provided with a cavity *c*, and forming the female cone. The male cone *d*, provided with a leather lining *e*, is mounted loosely on the shaft *f*, which latter, on a square portion, carries a sliding sleeve *g*, on which are fastened the pinions *h*. The cone *d* is longitudinally movable on the shaft *f*. Its hub *i* is connected to a rod *j* within the shaft *f* by means of a peg *k* passing through a cut-out of the shaft. The peg *k* has some lateral play in this opening. The shaft *f* is provided at its end with a plate *m* carrying two arms *n* drilled near their extremity with holes to receive the driving pins or bolts *o* fastened to the cone *d*. In this manner the arms *n* are driven by the cone without hindering the displacement of the latter on the extremity of the shaft *f*.

When the clutch is to be engaged to connect shafts *a* and *f*, the spring *r* is allowed to act on a slide *p* moving in a cylindrical opening *q* and pushing against the head *r* of rod *j*. The latter displaces cone *d*, which enters into the conical cavity *c* under the pressure of peg *k*. Cone *c* then drives cone *d*, and the latter in turn drives shaft *f* through the intermediary of bolts *o* engaged with the arms of the lever *n* fixed on the plate *m* carried by the shaft *f*. This shaft not requiring any longitudinal movement, there is no objectionable friction between it and the pinion sleeve, and a perfect engagement of the clutch is made possible.



MR. HENRY GARDNER, of Hospital Street, Nantwich, stocks Pratt's motor-spirit, greases, and lubricating oils, and other sundries for motorists.

THE CONDUCT OF MOTOR-CAR TRIALS.



IN the case of automobile competitions which are not intended to be speed contests there is always more or less difference of opinion as to what should constitute the basis of judging the competing vehicles and making the awards. The aim of all these trials or tests is, of course, to bring to the fore the most reliable and serviceable vehicles. While the end in view is thus clearly defined, and while exceptions to it are hardly to be expected, the best means of attaining it are less obvious. As a consequence, there is always a good deal of discussion before deciding upon the conditions of a contest, and here and there a protest after the contest is over. It would seem, remarks a writer in the *Horseless Age*, to be well, on the one hand, in judging the performance of vehicles, to take into account only such points as are capable of absolute determination, such as number of breakdowns *en route*, time consumed in covering the distance, etc., and leave out of consideration all points which can be expressed only in relative terms.

While such a standard would have the advantage of simplicity and ease of application, it would not give all the information about the vehicles that prospective users might desire. In the first place, the period of the trial should represent only a comparatively small fraction of the life of the vehicle, and as it is self-evident that only new, or practically new, vehicles are entered in the more important events at least, the vehicles at the termination of the trial should still be in good working condition, capable of many miles more. This is a point which ought to be considered in drafting the conditions of such trials—the condition of the different vehicles at the end of the contest. To investigate every part of a motor vehicle and judge its condition of wear is not an easy matter, of course, but a report giving information on this point so much enhances the value of an endurance test that it is well worth the trouble it causes. In order that work of this nature may be reliable, competent engineers must be entrusted with the examination of the vehicles and the drafting of the report.

When endurance tests are made to include this feature they will be a means of education, not only of the general public who may chance to witness the trial, but of those more directly interested who wish to form an opinion of the serviceability and durability of different types of vehicles.



A COMPANY has just been formed at Verviers, Belgium, with a capital of £8,800, and with the title *La Société des Automobiles Ruhl*.

ON the way to Ockley the other day we came across a sign-board near Holmwood bearing the legend, "Motor-cars and traction engines not allowed along this road. By order!"

AMONG recent purchasers of Locomobile steam cars are Lord Dudley, Sir Edward Cassel, Sir Hervey Bathurst, and the Hon. H. Bathurst.

THE British Automobile Commercial Syndicate has received a second order from the Duke of Sutherland, for a 12 h.p. Panhard car, the body of which is to be built in the style of a shooting brake.

WE learn that Mr. W. Hemingway, Assoc.M.Inst.C.E., has been appointed head of the testing department and chief draughtsman and designer at the works at Coventry of the Daimler Motor Company, Limited. Mr. Hemingway is a practical engineer, and has in recent years been prominently connected with the development of the chainless bicycle.

MESSRS. FRISWELL, LIMITED, ask us to state that, as it appears from considerable correspondence that many people have an idea that they carry on auction sales at 48, Holborn Viaduct, E.C., their show rooms at Holborn Viaduct are devoted entirely to new carriages, and that the premises at 1, Prince's Road, Holland Park, lately occupied by the Automobile Association, are kept entirely for receiving and selling private individuals' cars, either privately or by auction.

HERE AND THERE.



DR. HOOD, of Blirgowrie, N.B., is now going his daily rounds on a Singer motor-bicycle.

THE big Panhard car driven by M. Leys, in the Paris-Berlin race, has been acquired by Lord Carnarvon.

THE five days' tour of the Pyrenees, organised by the Bordeaux Automobile Club, starts on Wednesday next, the 21st inst.

PROFESSOR H. S. HELE-SHAW, of University College, Liverpool, has fitted a water-cooled head to the motor of his New Orleans voiturette, with satisfactory results.

THE Organising Committee of the Automobile Club de France have fixed December 10th to 25th as the date of the next French Salon d'Automobiles, which will again be held in the Grand Palais in the Champs Elysées, Paris.

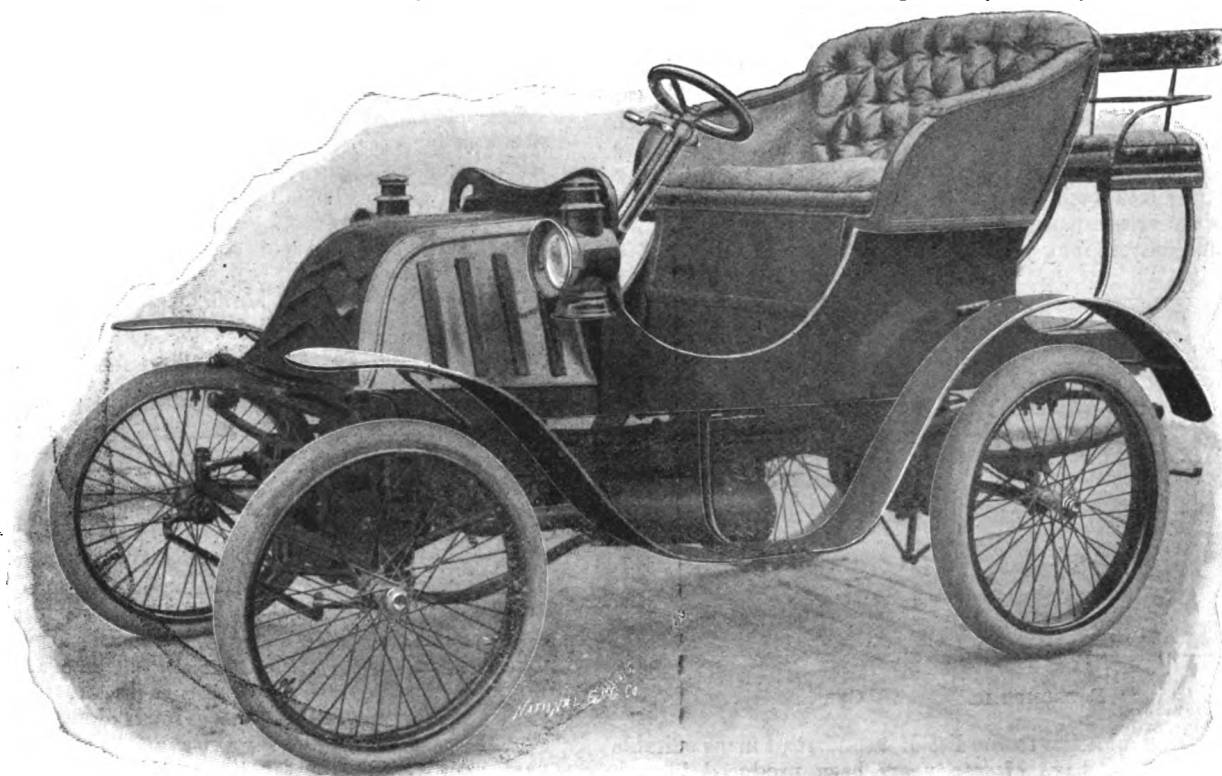
IN a recent issue we mentioned that Mr. E. Collins, of Coventry, was acting as agent for the Werner motor-bicycle in the county of Warwick. Mr. Collins writes asking us to mention

CALLING in at the depot of the Auto-Carriage Company, Ltd., in Great Portland Street, W., the other day we had an opportunity of inspecting a 6 h.p. Bardon car which went successfully through the tour between Paris and Berlin recently. We understand that the car is entered for the forthcoming Glasgow trials.

At the last meeting of the Farnham (Surrey) District Council, Mr. Lewis asked what power the Council had to control the speed of motor-cars passing through the town, which were a great source of danger. The chairman said it was a matter for the police, and at the next bench there were several cases coming forward.

ENTRIES for the mile speed contest on the beach at Deauville, France, on September 1st are coming in apace. Already over twenty competitors have entered, including Girardot, Lemaître, Serpollet, Cormier, Théry, Demester, Bardin, and Osmont. It is also reported that an entry has been received from Mr. S. F. Edge, who will drive his big Napier car.

THE International Motor-Car Company, Limited, of 76, High Street, Marylebone, London, W., have sent us a copy of a new illustrated catalogue they have just issued, in which full



THE IMPERIAL LIGHT CAR WITH SPIDER BODY. 1. (For description see page 433, ante).

that his ground covers the whole of the North of England and North Wales.

DURING the manoeuvres at Aldershot last week General Goldie and another officer were driven about in a 3½ h.p. Hewbenz Victoria, supplied by Mr. A. E. Major, of Broad Street, Reading. During one of the days Hind Head Hill was climbed, the little car going through the ordeal without a hitch.

It is announced that the Daimler Motor Co., of Coventry, will shortly be bringing out a light 7 h.p. car with a two cylinder motor, direct central drive instead of chains, and the usual tonneau body. Three forward speeds and a reverse will be fitted, as well as both tube and electric ignition.

A DISCUSSION took place at the last meeting of the Islington Borough Council on the question of road maintenance, when Mr. Alderman Tomkins pleaded for an increased expenditure in this direction, so that several defective roads might be put in proper condition. The amendment for an increased sum, however, was lost.

particulars and clear illustrations are given of the "Charette" in its several forms. Several pages at the end of the list are devoted to copies of testimonials from users of this car, which appears to be giving very good results.

THE Ormonde Motor Company, of Wells Street, Oxford Street, offer a long list of attractions to all who may be disposed to buy their cars, submit their own to overhauling and repairs, or store them with the company. Mr. Arthur Goodwin, who has been connected with the industry for several years, is in charge, and we understand that thoroughly experienced mechanics are in attendance.

IN our issue of the 3rd inst. we announced that the Electricity Committee of the Manchester Corporation had resolved to purchase two motor-cars for the use of outdoor officials in visiting sub-stations. We now learn that the Corporation Electric Department have placed an order for two Locomobile steam cars with Messrs. Bennett and Carlisle, Limited, of Exchange Arcade, Manchester.

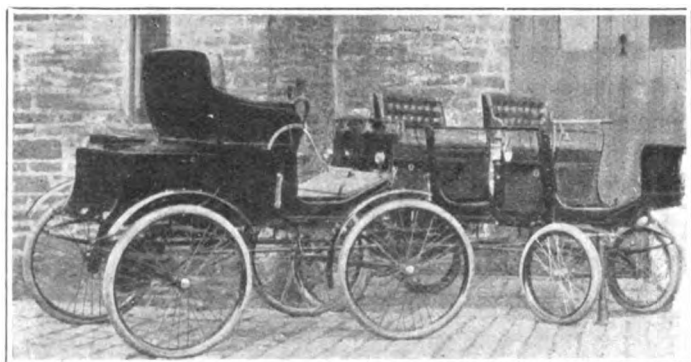
THE GENERAL AUTOMOBILE AGENCY, D. Farman, Man., Spare parts for 8 h.p., 12 h.p., 16 h.p. PANHARDS in STOCK, 100-104, Long Acre, W.C.

It is probable that the War Office will make several reforms as a result of the recent Aldershot manœuvres. Major-General Douglas is quite convinced of the practical utility of cyclists in active warfare, and his report will contain special reference to the possibilities of the cycle in time of war. It is highly probable also that a corps of motorists will be suggested as a useful adjunct to any cyclist section.

WHILST driving with a lady in a motor-car on the Parade at Southsea, Mr. Hewetson unsuccessfully attempted to avoid a dog which got under the vehicle, with the result that it turned over on its side, throwing the occupants on to the road. Mr. Hewetson escaped unhurt, but was badly shaken. The lady, however, sustained several bruises on her face as well as a severe shaking. The motor-car was seriously damaged.

QUITE a number of the large Coventry cycle-making concerns are now taking up the construction of motor-bicycles. In addition to the Singer Cycle Company, and Messrs. Bayliss, Thomas, and Company, Limited, who have been making them for some time, we hear that the Rover Cycle Company, the Sparkbrook Cycle Company, and also the Rudge-Whitworth Company, are each preparing to put a motor-bicycle on the market.

DR. J. HUNTER, Corran, Lochgilphead, N.B., who has been using an "Argyll" voiturette for some time, is very enthusiastic. He states that he has not yet come across a hill which the car will not mount, notwithstanding the very hilly country in which it is used. At first he had trouble with the brakes, but since wire ropes with wooden blocks were fitted he runs down any hill with absolute confidence. Dr. Hunter adds that he finds the car of the greatest use and far in advance of a horse-drawn vehicle, especially in long journeys.



"PETROMOBILE" STEAM CARS.

A FURTHER addition to the list of useful road maps suitable for motorists, which have of late years been produced in such abundance, is that of the environs of London, issued by C. Smith and Son, of 63, Charing Cross, S.W. The map is clearly printed upon cloth, and folds up into a neat case for the pocket. It is on a scale of two miles to the inch, and takes in Maidstone, Chatham, and Chelmsford on the east, Tunbridge Wells and Godalming on the south, Farnham and Henley on the west, and Hertford on the north. The main and principal cross roads are coloured, and the bye roads clearly defined. Metropolitan motorists who require a reliable and handy guide for short excursions in every direction will find this map a useful publication.

THE new car recently completed by the Kingsburgh Motor Construction Company, Ltd., of Granton, Edinburgh, has been designed by Mr. A. J. Drake for public work and to carry twelve passengers. The total weight of the vehicle is $27\frac{1}{2}$ cwt., but we understand that this will be reduced in future cars by the use of aluminium. The vehicle is fitted with a 12 h.p. petrol motor of special design for this class of work; special attention has been given to all the wearing parts, and at the same time a considerable amount of complication has been entirely done away with. The car has been thoroughly tested and driven over 1,000 miles with the greatest of satisfaction, and the company are confident that they are now able to place a thoroughly reliable public service vehicle on the market.

THE WAR OFFICE MOTOR VEHICLE TRIALS.

CAPT. LLOYD, R.E., secretary of the War Office Committee on Mechanical Transport, has issued a circular letter to various local authorities concerned on the subject of the proposed trials of self-propelled lorries for military purposes. Capt. Lloyd states that the Committee have now chosen the following routes for the proposed trials:—

1. Aldershot, Hale, Odiham, Hartley Row, Hartford Bridge, Blackwater, Bagshot, Chobham Ridges, Frith Hill, Frimley Green, Farnborough Station, and back to Aldershot.

2. Aldershot, Farnham, the Hog's Back, Guildford, Worplesdon, Bisley, Donkey Town, Bagshot, and back to Aldershot.

3. Aldershot, Aldershot Station, Ash, Wyke, Puttenham, Peper Harow, Milford, Hindhead, Tilford, Farnham, and back to Aldershot.

4. Aldershot, Hale, Odiham, South Warnborough, Alton, Farnborough, and Aldershot.

5. Should it be decided to make the journey from Aldershot to Chatham, the route will be from Aldershot to Farnham, Guildford, Merrow, Gomshall, Dorking, Reigate, Redhill, Westerham, Seal, Brough Green, Leybourne, Ditton, Maidstone, and Horsted, to Chatham.

Capt. Lloyd states that the routes have been chosen so as to avoid, as far as possible, covering the same ground many times, whilst they traverse some of the steepest gradients in the districts, and also lead over both main and second-class roads, so that the vehicles can be tested under various conditions. It is anticipated, he proceeds, that no lorry, when fully loaded with fuel, water, and carried load, will weigh more than seven tons. This weight will probably be borne on four wheels, and the driving wheels, on which the greater portion of the weight, say five tons at the outside, will be borne, must, by the conditions of the competitions, be at least 9 in. wide across the tires. The trailers, which may possibly be two-wheeled vehicles, are not likely to weigh, when fully loaded, more than $3\frac{1}{2}$ tons. The number of vehicles competing is at present estimated at between twenty and thirty, though it is possible that a smaller number may eventually be brought to the trials. Arrangements will be made that the roads shall not be unduly blocked by the vehicles following one another in close processions, and long intervals will be maintained between competitors.

Capt. Lloyd states that the War Office had written to the Secretary of the Local Government Board asking that facilities might be granted to make these trials. The Local Government Board has replied suggesting that in the first instance local authorities having control of the roads along the proposed routes should be communicated with in order to avoid any risk from the passage of such heavily-laden vehicles over bridges which might be weak and might require strengthening. The Committee has therefore addressed a letter to such authorities expressing the hope that there will be few, if any, places along the routes chosen over which such moderate loads cannot be safely borne. They further ask the local authorities to give them every facility for carrying out these most important trials, and should the nature of the roads chosen render objection necessary, they ask that alternative routes may be suggested.

COUNT BOOS-WALDECK, an Austrian motorist, recently made a trip from Vienna to Ostend in a 20 h.p. Austrian Daimler in $5\frac{1}{2}$ days. The distance covered was 875 miles.

THE United Motor Industries (Limited), of 40, Holborn Viaduct, E.C., have just issued a very exhaustive list of genuine De Dion-Bouton parts and fittings, which is well worth asking for. We note that in many cases prices have been materially altered in the buyer's favour.

THE Anglo-American Oil Co., Limited, have just issued a new edition of their valuable list of agents stocking Pratt's motor-spirit. The list, which is of a handy size, is steadily assuming big proportions as regards the number of places where spirit is stored. Motorists using Pratt's should obtain a copy of the booklet.

SERIOUS MOTOR-CAR ACCIDENT.

A SERIOUS motor-car accident occurred on Sunday afternoon near Doncaster, the victims being Captain Laycock, of Wiseton Hall, Bawtry, and two friends, Captains Craddock and Wilson, who, along with a French servant named Gaulard, were riding, it is understood, to York, being on the way to Scotland for the grouse-shooting season. A passing cyclist was also involved in the accident. The scene of the disaster was a point near the Red House Farm, about five miles from Doncaster, where the road diverges, one branch going to Leeds and the other to York. There is here a very steep gradient, and it was in descending this that the party came to grief. Captain Laycock was in charge of the car—a 24 h.p. Panhard—and, according to reports, he lost control of the vehicle, and after passing and overthrowing a cyclist it ploughed up the grass at the side of the road, toppled over, and righting itself again, turned round with its head towards Doncaster. The occupants of the motor-car were, of course, thrown out, Captain Laycock being found under it. Mr. T. Swallow, of Doncaster, who was driving, had been passed by the car a short distance from the scene of the accident, and on arriving there he found all the party more or less stunned and helpless. Captain Craddock was most seriously injured, being unconscious, and, as afterwards proved, he was suffering from concussion of the brain and other injuries which almost precluded hope of recovery, although later reports are slightly more favourable. Captain Laycock's collar-bone was broken, his elbow fractured, and his right thigh injured, and he had many bruises. Captain Wilson, the third passenger, had a leg broken, while the servant escaped with a few bruises. Mr. Swallow left his wife and daughter, with whom he had been driving, and went to Doncaster for medical and other assistance, and on the way he met Superintendent Blake, of the West Riding Police, who went to the place to render aid, whilst Mr. Swallow sent two or three cabs forward, several doctors, and a nurse. Meanwhile Mrs. Swallow had obtained water from the Red House Farm and bathed Captain Craddock's head and endeavoured to bring him to consciousness. Assistance was soon at hand, however. Three medical men arrived from Hooton Pagnell and four from Doncaster. Dr. Goode and another gentleman remained with Captain Craddock pending the arrival of Dr. Robson, of Leeds, who was sent for by telegram. Captain Laycock and Captain Wilson were taken to the Doncaster Infirmary and afterwards to Wiseton Hall, but Captain Craddock remains at Red House. The cyclist who was thrown was a young man from Castleford named Edward Chas. Pope. He was pitched into the hedge and sustained several bruises.

From Mr. Swallow we learn that the car passed him about four hundred yards from where the accident occurred, and at the time of the accident would not be travelling at more than sixteen to twenty miles an hour. He adds "Captain Laycock told me that the gearing of one of the back wheels went wrong, which was the cause of the accident. Not being more than two hundred yards away at the time, and having heard many false reports, I can say that it was a pure accident, and no fault whatever of either the cyclist or the occupants of the car."

THE METROPOLITAN MOTOR MANUFACTURING COMPANY.

THE petition of A. E. Creese for the compulsory winding up of the above company was heard last week. Mr. Edmonds said it was a creditors' petition, and there was a voluntary liquidation pending. Mr. Williams, for the liquidator, said the petitioner was the vendor to the company, and it was alleged that he had practically ruined it. The company under his management had only produced two motors, and these would not work, and could only be sold for scrap iron. His lordship said there was evidence of considerable irregularities, but he thought the voluntary winding up would satisfy the shareholders, and he dismissed the petition, but without costs.

THE MERCERS' COMPANY v. THE BRITISH AUTOMOBILE SYNDICATE AND THE AUTOMOBILE AGENCY.

MR. JUSTICE KEKEWICH, sitting in the Chancery Division of the High Court of Justice, on Thursday last, had before him motions in an action, which was brought by the Mercers' Company to restrain infringement or breach by the defendants of a covenant contained in a lease under which they respectively held certain premises in Long Acre. The defendants are two motor-car companies occupying premises in Long Acre, the Syndicate at 97 and 98, and the Agency at 100 and 104. Mr. Warrington, K.C., said the complaints made by the plaintiffs, who are large owners of property in Long Acre, was that the defendants had broken a lease against carrying on trade, which increased the fire insurance premium, and the evidence was that the defendants stored cars with petroleum, and that occasionally the petroleum got spilt, which was a source of danger and annoyance. Another ground of complaint was caused to the plaintiffs' tenants by the cars coming in at all times of the night to be "prepared." The learned counsel wanted an undertaking that the defendants should pay an increased fire insurance premium. Mr. Renshaw, K.C., said that his clients, the Agency, were already doing that. Mr. Buckmaster, on behalf of the Syndicate, said that he was not prepared to give any undertaking. Mr. Warrington asked the Court to fix an early day for the hearing of the action. After some discussion, his Lordship appointed the 5th of November for the hearing.

FURIOUS DRIVING CASES.

At Chelmsford, Count Zborowski, of Garboldisham Manor, East Harling, Norfolk, was charged with driving a motor-car at a speed greater than twelve miles an hour between Widford and Ingatestone. The police officer at Widford noticing that defendant was riding very fast, telephoned to Ingatestone, where he was stopped. It was then found that he had travelled 4 miles 5 furlongs 100 yards in 11 minutes, which was at the rate of 25 miles an hour.—The defendant was fined £5 and £1 2s. 6d. costs.

At Chelmsford, William Fenton motor-car driver, of Commercial Road, London, was fined £5 and £1 5s. 6d. costs, for travelling at the rate of 17 2 5 miles an hour, near Ingatestone.

At Farnham Petty Sessions, Count Seilern, who has taken a residence at Frensham Place, near Farnham, for the season, and who did not appear, was summoned for driving a motor-car at excessive speeds at Farnham and the Bourne on July 30 and 31. The police having given evidence, a witness, an architect, said he had timed the defendant from the witness's place to the lodge at Frensham Place, the distance being half a mile, and the defendant did the journey in one minute, giving a speed of thirty miles an hour. The Bench said both cases were very bad, and for each the defendant was fined £5 and costs.

At Barrow, Leon Vint, proprietor of a touring entertainment combination, was summoned for furiously driving a motor-car when in Abbey Road on August 6th. P.C. Willan gave evidence that the car was being driven at a rate of a little over thirty miles an hour. Several witnesses supported the constable's testimony. A fine of 40s. and costs was inflicted.

At Steyning, H. Ramoisy, of London, was summoned for driving a motor-car at Southwick at a pace exceeding twelve miles an hour on Sunday, 28th July. He pleaded not guilty. Mr. Richard Dawes represented the defendant. P.C. Bristow stated that about half-past four on the afternoon in question defendant came along the road leading from Southwick to Fishersgate. He received a signal from P.C. Dowling of the coming of the motor-car, and timed it for a quarter of a mile. In consequence of the pace he held up his hand for the driver to stop. He then drew the attention of the defendant, who was in the car with three others, to the time in which he had covered the 440 yards, namely, 43 2-5th sec., or at the rate of over twenty miles an hour. Defendant replied that he could not possibly go more than eighteen miles an hour, and said that he didn't think he was going more than twelve or thirteen. Defendant, who is employed by the Auto-Carriage Company, stated that he had had ten years' experience of driving motor-cars. There were four gears, and he was using the third, which enabled him to go fifteen miles an hour. He was not going at a rate exceeding twelve miles. The wind was against him. By Mr. Powell Breach: The speeds accounted for nothing when going down hill, but there was a slight rise and not a fall. The Bench gave him the benefit of the doubt, and cautioned him that under no circumstances must he travel at a speed exceeding twelve miles an hour.

At Leek, Thomas Bolton, J.P., Lightoaks, Cheddle, Staffordshire, and Francis Bolton, Moor Court, Oakamoor, were charged with driving motor-cars on June 29th at a greater speed than twelve miles an hour, and also with driving at an improper pace, having regard to the traffic. Witnesses said that one of the cars was going at the rate of thirty miles an hour and the other at from eighteen to twenty miles an hour. Francis Bolton said it would be impossible to travel at the rate of thirty or forty miles an hour. Thomas Bolton, who did not appear, was fined £3 and costs, and the case against Francis Bolton was dismissed upon payment of costs. The first charge was withdrawn.

At the St. Neots (Hunts) Police Court, Mr. J. W. Hornsby, J.P., of Barrowby Hall, Grantham, and Mr. F. Driffeld, of Kettering, were each fined £5 for driving motor-cars at more than twelve miles an hour on the North road. Mr. Hornsby was stated to have travelled between twenty to twenty-five miles an hour, and Mr. Driffeld at thirty nine miles an hour.

At Aylsham Petty Sessions Mr. J. R. Hargreaves, of the Manor House, Cawston, was summoned by Superintendent Palmer for driving a motor-car on the highway at Cawston at a greater speed than twelve miles an hour on July 18th. Mr. Reeve (Mills and Reeve, Norwich) appeared for the defendant. From the evidence it appeared that on the date named at about midnight, Mr. Hargreaves was driving his motor-car with three other occupants, at about eighteen or twenty miles an hour. A Cawston postman named James Duffield was driving along the road at the same time, and met the motor-car, and fearing a collision he shouted to Mr. Hargreaves to stop, but the motor-vehicle rushed on, and caught the hub of the cart, and the postman was thrown out. The magistrates imposed a fine of £7 10s., and 17s. costs, or in default one month hard labour.

At Acock's Green, Charles Leonard Lowe, of Mossley, was summoned for driving a four-wheeled motor-cycle at an excessive speed. Inspectors Griffin and Hill said it was going along Soney Lane at quite twenty miles an hour, and on turning round the corner of Woodstock Road, it narrowly escaped being upset. There were several cyclists about, one or two ladies having either to drop off their machines or to ride on to the footpath to avoid a collision. Defendant, who denied that he was going at the speed mentioned, was fined £2 and costs.

At the Bettws-y-Coed Petty Sessions, Geo. Thornton, driver of a motor-car belonging to Mr. LeVillie, proprietor of the "La Poupee" Company,

pleaded guilty to scorching at the rate of about twenty-five miles an hour along the road. Mr. Wright, of Messrs. Ayrton, Radcliffe, and Wright, solicitors, Liverpool, appeared for the defence, and stated his client had travelled nearly all over England, but had never been brought up before. P.S. Breeze proved the case, and stated that Thornton refused to give his name and address when asked. Colonel Johnstone said there was always extreme difficulty in catching those gentlemen, who were not only a nuisance, but a danger to pedestrians and animals, and the only chance they had of putting a stop to them was by inflicting the full penalty of £5 and costs.

At the Preston County Police Court, Thomas Walmsley, a motor-car proprietor, of Preston and Barton, was summoned for furiously driving a motor-car along Garstang Road, Fulwood, and thereby endangering the lives and limbs of passengers. From the evidence it appeared that on the morning of July 17th two police officers saw the defendant driving his motor-car at a furious rate, and timing him by means of a stop watch found that he covered a distance of 480 yards in exactly thirty seconds. This was equal to a speed of thirty-three miles per hour. For the defence it was submitted that the machine which the defendant was driving could not possibly be driven at the speed mentioned by the officers. A fine of 20s. and costs was imposed.

The Hon. Leopold Canning, of Garvan, Londonderry, was summoned before the Hunts Divisional Bench for driving a motor-car faster than twelve miles per hour, at Little Stukeley, on the 10th July. Defendant did not appear. P.C. Bailey said he saw a motor-car coming down the hill into Little Stukeley at a furious rate. Witness signalled for the driver to stop, and he having done so, witness told him he was going too fast. He travelled 1,306 yards in 1 min. 45 sec., or nearly twenty-five miles per hour. He said he saw the road was clear, and wanted to get up the hill. He asked witness to look over it. He gave his name and address, and afterwards drove on towards Huntingdon at a furious rate. Joseph Yates, postman, of Stukeley, gave similar evidence. A fine of £5 and 8s. costs was imposed.

At Droxford Petty Sessions, Mr. Charles C. Dallas, of Eastley, Wootton, Lynton, was summoned for driving his motor-car to the common danger of a certain passenger on the highway. The summons came on for hearing on the 8th inst. The complaint was laid by the Superintendent of Police, and it was alleged in support of the information that Mr. Dallas drove through the village of Hambledon at a speed varying, according to the testimony of the witnesses, from fourteen to twenty miles an hour. One witness stated that the car went by at such a terrific rate that his horse, which was tied up to the wall of a public-house where he was delivering mineral waters, stripped its headgear and bolted, before doing which it plunged about to such an extent that it knocked him down. As a result of the injuries which he had received he had been confined to his bed for five weeks. Mr. Staplee Firth defended, and elicited from this witness in cross-examination that at the time when the motor-car first approached he was inside the public-house, but he got outside while the car was still fifty or sixty yards away, and at the time the car passed the house he had hold of the horse's head. He admitted he did not put up his hand to stop the car. A letter was also put in from the driver's employers requesting compensation for the driver's injuries from Mr. Dallas. The case was dismissed.

At the Guildford Borough Bench, James Edward Lawes, cycle manufacturer, of Aldershot, was summoned for having recklessly driven a motor-car in Guildford, on July 31st. Mr. Norman Clinton, of Aldershot, appeared for the defence. Herbert Powell, J.P., of Piccadilly, said about 6.45 p.m. on Wednesday, July 31st, he was being driven out of the railway station gates in a two wheeled trap, taking the direction of Park Street. Suddenly, at the junction of the Station Approach and Farnham Road, a motor-car flashed round the corner from Farnham Road. The car swerved sharply to the right, passing within a foot of his horse's fore-legs, and the coachman was obliged to pull the horse on to its haunches. The motor-car was drawn up on the opposite pavement, just in front of the Napoleon public-house. Witness jumped out of his cart and asked the driver of the motor-car for his name and address, which he refused. After some altercation defendant's companion suggested he had better give a name. He did not think the car was going less than eight or more than ten miles an hour. He himself never turned the corner in question except at a walking pace. By the Mayor: It was when he had got into the difficult predicament that the motor driver did the only thing he could under the circumstances, but he considered that it was the most reckless piece of fancy driving he had ever seen. Dr. Powell's coachman gave similar evidence. Defendant said when he got to the bottom of the hill he was coming very slowly, not more than three or four miles an hour. Just then there was a wagon on the left side and a dog-cart coming at a sharp pace on the right-hand side. In order to avert an accident, he put on pace and went across the road into the lane near the Napoleon. He expected the occupant of the trap to come and thank him for having averted an accident. Instead of that he came up in an insolent way and demanded his name and address. The Mayor said the magistrates were satisfied that under the circumstances, and in view of the amount of traffic there, the defendant was going at an unreasonable rate, and he would be fined £1.

At the Croydon Petty Sessions, Frederick Bond, of Earl's Avenue, Folkestone, was summoned for driving his motor-car at a greater speed than twelve miles an hour in the parish of Addington, Surrey. The police swore that Mr. Bond was driving furiously and was going at the rate of twenty-five miles an hour. Other witnesses were called to give similar evidence. Ultimately the Bench dismissed the case. Mr. Staplee Firth defended.

At Guildford, C. A. Williamson, of Sand and Ripley, was summoned under the Light Locomotives Act for furiously driving a motor-car. A letter was read from Messrs. Firth and Co., dated the 2nd of August, stating that Mr. Williamson had only received the summons the day before, and they, therefore, applied for an adjournment for a fortnight, in order that that gentleman might prepare his defence. The application was granted, and the chief witness, William John Honey, was allowed £1.

At Chertsey Petty Sessions, Count Seilern, Frensham Place, Farnham, was summoned for driving a motor-car at an excessive speed, at Egham, on July 31st. The Count wrote to say that, as the summons had only been served on him the previous day, he would like an adjournment. This was granted.

At Maidenhead, Ernest Hannell, of Wargrave, appeared in answer to a summons for having driven a motor-car on the Bath Road, on August 1st, at a greater speed than twelve miles an hour. He pleaded not guilty. P.S. Day, of Littlewick, said that on August 1st, at 3.15, he saw defendant driving a motor-car near Knowl Hill Church. He timed it from the Bell and Bottle to the church—a distance of 594 yards, and it was going at the rate of 37 miles an hour. He received complaints from two persons respecting the defendant; one was of his having run over a dog. Defendant said that he had driven a motor-car for three years and had never been summoned before for going at a fast rate. It was impossible for the car that he was driving to go at thirty miles an hour, for it was only geared up to 25 miles an hour. He was only travelling at 12 miles an hour. Defendant called Frederick Brown and Frederick Rathbone, who stated that when they saw defendant on that afternoon he was travelling slowly—that was when he was at Wargrave. Superintendent Dorrell said that the Chief Constable had received complaints about the defendant, and several persons at Wargrave had also complained of his driving the motor-car at a fast speed. General Thompson said that as complaints had been made before respecting him, and as from the evidence before them there was no doubt that he was going at a rate of 30 miles an hour, it was useless to say that he was only going at 12 miles an hour. Defendant would have to pay a fine of £5, with £1 2s. 6d. costs.

A TECHNICAL OBSTRUCTION.

At Hove Gerald Hanson was summoned for obstructing the thoroughfare in Grand Avenue, Hove, by leaving a motor-car there on July 30th. Defendant pleaded not guilty. P.C. Williams said at 12.30 midnight he saw the motor standing in Grand Avenue. There was no light on the vehicle, and when its removal was attempted it was found to be locked. The car remained there until six o'clock in the morning. Defendant said he did not dispute that the motor-car was there, but denied that he had committed any obstruction. During the journey which he had made that night the car broke down, and he could hardly get it along on the last mile. When he got it to the door of his house in Grand Avenue he could not move it. His stables were in Norton Mews at the bottom of Grand Avenue. There was a board up stating that there was no thoroughfare, and at the bottom there was a black wall of wooden blocks, through which nothing could pass. He could not see how he had been guilty of obstruction when there was practically no thoroughfare to obstruct, for no traffic was allowed on the road. The Chairman said that defendant had committed a technical breach of the bye-laws, and he would be fined 1s. and costs.

NO LIGHT.

At Guildford, Maximilian Prashkauer, of Womersley, was summoned under the Light Locomotives Act for not having a light attached to his motor-car on the 18th of July, after sunset. P.S. Matthews said that on the night in question he was at Womersley when he heard a motor-car, and as he was cycling he rang his bell several times. On coming up he found the car, which had apparently stopped, just starting again. There were no lights, and it was about thirteen minutes after the proper time to light up. Defendant said his lights had gone out, owing to the vibration, and he was just going to the top of the hill before re-lighting them. Fined £2 10s.

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COMMENTS.



THOUGH the King is at Homburg for his health he is as enthusiastic an automobilist as ever. On Friday of last week His Majesty visited Friedrichshof Castle on a motor-car, returning the same evening in company with the Queen and Princess Victoria. On Saturday his Majesty was visited by the Grand Duke of Hesse, and the King and the Grand Duke drove together in an automobile to Frankfurt. On Monday his Majesty visited Saalberg in his car, and on Tuesday journeyed as far as Koenigstein. The persistent devotion of his Majesty to his favourite means of travelling is having a marked effect upon automobilism. Day by day we hear of fresh converts from the ranks of the *elite* of the land, and soon non-motoring society will be but a small minority.

"Reigate Welcomes Progress."

WERE the words displayed in large letters on banners strung across the main street on the occasion of the inauguration run to Brighton in November, 1896. On succeeding anniversaries similar effusiveness was displayed, and how the practices of the Reigate authorities differed from their precepts was proved last Saturday. Between Redhill and Reigate is a distance of about 1½ mile, and at the summit of a rather sharp incline was to be seen an interesting "farmer-looking sort of a chap," who as soon as a motorist passed blew a shrill whistle, the signal for a posse of policemen to spring from hiding places and stretch themselves across the road. The unfortunate motorist was perforce bound to stop, and, in response to the innocent enquiry as to what was "wrong," was informed that he had been timed over a distance of 176 yards. In one particular instance our friend had travelled the distance in 18 seconds—equal to 20 miles an hour. All this information was not obtained at once, as the enquiries were disturbed by the sound of the whistle again. In this instance a gentleman not unconnected with Long Acre and mounted on a Darracq was the victim. The whistle quickly blew again and a quad was seen sailing along at full legal speed. The vehicle suddenly stopped, however, after travelling two-thirds of the distance and the other victims had a smile, but the Inspector remarked "it was all right, they'd had him in the morning." Altogether we are assured some fifty automobilists had their names and addresses taken and riders are now awaiting further developments.

Road Improvement.

THE interest of the military authorities in mechanical transport seems likely to confer a good deal of indirect benefit on automobilism, especially in the direction of road improvement. A difficulty which has occasionally cropped up and which will become of much greater significance as heavy motor traction increases lies in the inadequacy of many country bridges for heavy loads, the upkeep of these in some cases falling on local

property owners in spite of the fact that the roads they carry are highways, an anachronism that calls loudly for abolition in the present day. It may be urged that districts off main roads can be sufficiently served by lighter vans, but this, if true in the present state of industrial motor traffic, cannot long remain so, and the suggestions of the War Office to local authorities may be expected to give some stimulus to the maintenance of our highways in a condition suitable for the great demand upon them that is, in the near future, impending.

The Glasgow Reliability Trials.

ARRANGEMENTS are well in hand for the reliability trials which are to commence at Glasgow, on Monday, September 2nd. In Section 1 (manufacturers) the entries, up to the time of writing, number no less than forty-one cars; in Section 2 (privately owned cars), there are eleven entries; while in Section 3 the entries comprise a set of Dunlop tires affixed to a 12 h.p. Panhard car; an Auto Sparker, *i.e.*, a governed dynamo for supplying the current for electrically-ignited internal combustion engines, by the Motor Manufacturing Company, Limited; the Dawson Magneto-electric ignition, entered by Messrs. Henry T. and Harry A. Dawson, Canterbury; and a Simms-Bosch magneto-electric ignition and interrupter-timing gear, entered by the Simms Manufacturing Company. A list of the vehicles entered is given on another page.

Scarborough's Chance.

SCARBOROUGH has a chance of making history and profit simultaneously. The Corporation is being approached by a company seeking powers to lay down plant and run electric trams on the overhead system. Already the streets are often inconveniently crowded in the summer season, and to allow a service of trams to take up a large portion of the roadway will add to the confusion. No wonder is it, then, that a local agitation is arising for the adoption of a motor-car service as an alternative, and we trust the members of the Corporation will thoroughly consider the advantages of the automobile before adopting the disadvantages of the tram-car. The motor-car requires no specially constructed roadway; it needs no ugly adjuncts in the way of overhead wires, and it can go where tram-cars cannot.

Educating the Boroughs.

RECENTLY the Automobile Club has done splendid work in educating County Councillors, who threatened to number our cars and imprison our bodies. It can add to its services to the movement by giving heed to the lack of knowledge possessed by Borough Councillors, and demonstrating in a few crowded cities the advantages of motor-car services over tram-cars. This should be comparatively easy, and if representative English towns were selected for the demonstrations great good would result. Dwellers in towns and those who govern their local institutions have only to be persuaded of the undoubted convenience of the motor-car as a public vehicle in towns and cities to become ardent advocates of its adoption.

THE GENERAL AUTOMOBILE AGENCY, D. Farman, Man., Carage open day and night, all cars in stock, 100-104, Long Acre, W.C.

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The Disuse of Stables.

NOT only will the general adoption of the automobile assist those interested in keeping our streets clean and sanitary, but in obviating the need for stables in crowded localities it will play an important part in helping the sanitary reformer. Stables are a nuisance in crowded cities; and the fact that they often adjoin dwelling-houses is one deplored by those who want to see healthy conditions encouraged.

"Automobile Staggers."

KNOWING as we do how common the motor-car is in the cities of the States, it is with some astonishment that we note the very long list of fashionable Americans whose horses seem to have suddenly developed "automobile staggers," to the risk of the occupants of the carriages they draw in various holiday resorts. American journalism, with its insatiable craving for personal paragraphs, no doubt makes the most of such incidents, and the fair victim of a runaway loses nothing by having her name dragged before the public. Still, we cannot help wondering why up-to-date Americans have not found some means of accustoming horses to motor-cars. King Edward set a good example, which has been widely followed in this country, in having the royal horses fed to the music of a running motor. The royal example has been followed in other quarters, and as a result it is only the unknown provincial nag that would so far forget itself as to condescend to notice a motor-car nowadays.



MR. F. J. BUTTERWORTH ON HIS "STAR" CAR. SNAPPED AT MORTON OLD HALL, NEAR CONGLETON, CHESHIRE.

Furious Driving in Yorkshire and Lincolnshire.

ON Saturday last at the Doncaster West Riding Police Court, on the magistrates taking their seats, the Chairman (Mr. G. B. C. Yarborough) said the magistrates wished to say a few words with respect to the speed at which motor-cars were driven through the district. The statutory speed was 12 miles per hour, but in many cases the speed was nearer 30 miles an hour. During the last fortnight he had noticed three narrow escapes. One was not in that division, but it was on the great North road, and the speed at which the motor-car was travelling was 30 miles an hour. Two children who were crossing the roadway were nearly run over, and two horses were considerably frightened. He asked the superintendent of police to communicate the opinion of the Bench to the Chief Constable of the West Riding, who might then take some steps in the matter. Supt. Blake said it was a very difficult matter to stop motor-cars, and the Chairman remarked that they must stop somewhere in the West Riding. The same question also cropped up at a meet-

ing of the Grantham Rural District Council on Monday. Mr. B. Beeson, in moving a resolution: "That this Council requisition the Kesteven County Council to frame bye-laws for the regulation of the speed and traffic of motor-cars, and applicable to the whole of the district under their control," said there were motor-cars passing on the North road that exceeded thirty miles an hour. He could not think why a motorist's pleasure should be at the expense of the ratepayers in the district. There were men going along that road who looked more like fiends than individuals. The resolution was carried, and it was decided to send a copy of the resolution to the Urban and Rural District Councils in Kesteven, and ask them to pass similar resolutions.

Motorists and their Rights.

AT Market Rasen Petty Sessions, last week, a case of great interest to motorists was heard, Richard Bennett, farmer, Glentham, being summoned for not allowing a motor-car to pass him whilst he was driving a cart on the Gainsborough Road, at Kingerby, on July 13th. It appears that Mr. Nainby, of Thorganby, accompanied by a lady and two gentlemen, was riding on his motor-car to Wiseton on July 13th, and on the Gainsborough Road, at Kingerby, he overtook the defendant, who was driving with his wife in a cart in the same direction. Mr. Nainby sounded his horn several times, but the defendant who refused to make room for them to pass on the right, turned and laughed at the motorists. Defendant asserted that the road was too narrow for them to pass, and that there was a deep ditch on the left. He signalled to them to pass on the left, but they declined. Had he so wished, defendant could have turned up another road to make way for those behind, instead of which he kept on past Bishopbridge, where the road became much wider. He still refused to let Mr. Nainby and his party pass. Just then a policeman hove in sight, but when defendant caught sight of him he quickly drew to one side. The chairman said the Bench had given every consideration to the case, and their opinion was an obstruction had been caused, but as this was the first case of that class to come before them they would be lenient, letting off the defendant with a fine of 5s. and 6s. 6d. costs.

The New Canine Danger.

IN encounters between dogs and motor-cars the dog usually suffers most. But now and then we hear of a case where a vehicle striking a dog while it is running at a high speed is deflected so much from its course as to be landed in the ditch at the roadside, to strike a tree, or to suffer damage in some other manner. A case in which the results are more serious than ordinarily is reported from the United States. Two gentlemen were out driving in an automobile when a big St. Bernard dog rushed at the vehicle, overturning the machine and seriously injuring the occupants. The details are not very plain from the account to hand, but it is to be inferred that the road where the vehicle was overturned was favourable to such an accident, that the vehicle was of the lighter class, and that it was being driven at a good pace. Such a combination of circumstances would lead to the results indicated. The one precaution which will prevent accidents of this kind is to keep the speed well within limits.

Roadside Zoology.

THE study of animal characteristics assumes a new perspective when undertaken from the seat of a motor-car, to the destruction, moreover, of some cherished illusions, that of canine intelligence being among the chief, while in spite of the trouble provided for us by the horse, the candid observer cannot attribute it to any lack of this quality. When not in harness, a stray horse by the roadside frequently shows an intelligent interest in matters automobile, which, moreover, never leads him to obstruct the way; and it is not uncommon to find a horse that will face a motor, but cannot stand one behind him. The cow, on the other hand, has been an obstruc-

tive to mechanical progress from the days of Stephenson downwards, with the prospect in these days of the contest being more even than he anticipated, and is only less effective in causing delays than a flock of sheep. But, of all animals, the dog is most to be feared by the nervous driver, and his wild attempts at Juggernaut-worship are only assisted by dodging tactics on the part of the motorist. It cannot be too often impressed on the beginner that the safest course, where stopping is impossible and a collision seems likely, is to keep on in a straight line; in most cases the animal gets out of the way, and in any case the chance of a spill through striking an obstruction is far less if the car is going on a straight course, while irreversible or well geared-down steering will further diminish the risks which without these may even attend the presence of the ubiquitous half-brick.

Antipodean Automobilism.

THE automobile has not made that headway in New Zealand which might have been expected in a country second to none where scenery is concerned, and perhaps first in the whole world as far as roads go. Possibly the absence of local makers and the expense of transport to the remote islands may account for this. Canterbury, in the South Island, which is in all things a keen rival to Wellington, the capital, possesses only seven automobiles, four of which are cycles. Of the three *bona fide* motor-cars, one is a Benz and the other two are French vehicles, run under appropriate Colonial baptismal names.

Funeral by Motor-Car.

THE first appearance of motor-vehicles for the purpose of a funeral was witnessed at Coventry on Thursday last week. The funeral was that of William Drakeford, who had been in the employ of the Daimler Motor Company, Limited, at the Motor Mills as caretaker, and previous to that firm occupying the premises he had been engaged by the old Cotton Company for a long period, his terms of service in connection with the mills extending over forty years. The motor-vehicles used for the funeral comprised three cars, that upon which the coffin was carried being a specially arranged 6 h.p. Daimler carriage. It was painted black, and the body of the car was draped with black cloth on each side, which gave it a very sombre appearance. The unusual cortège attracted a good deal of attention as it passed through the city. The motor-hearse which carried the pall-covered coffin came first, two ordinary horse-drawn mourning coaches, containing the mourners, relatives, next, and these were followed by two Daimler-Parisian cars containing representatives from the Daimler Motor Company. One of these was a car belonging to Mr. Lewin, of Cambridge, who is now in Canada, and was driven by Mr. T. Soden. The other car was driven by Mr. Oliver Stanton, who originated the idea of motor-cars taking part in the funeral of one who had so long a connection with the building in which so many cars are now produced.

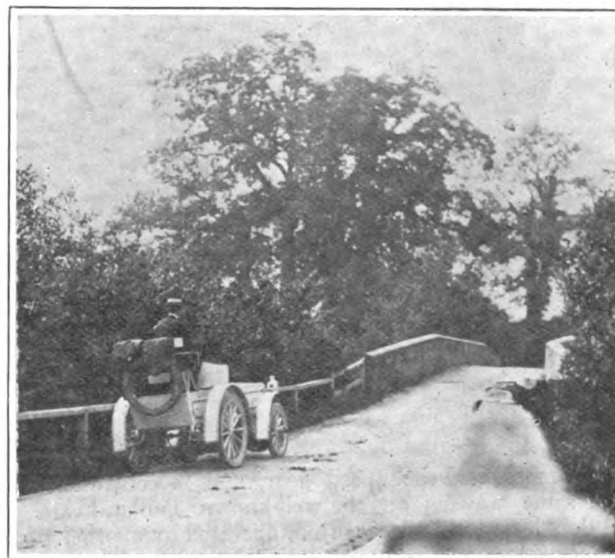
An Amateur's Car.

A LARGE motor-car, built as an amateur experiment by Mr. E. Boundy, of the Station Marble Works, Kendal, performed its trial trip with remarkable success last week. The vehicle is provided with a 9 h.p. Napier motor, a three-speed gear, with a maximum of twelve miles an hour, and, if fitted for the conveyance of passengers, would carry ten persons. Mr. Boundy's idea, however, was to construct a car suitable for the transport of masonry. He set about the work in his leisure time about five years ago, when heavy motors were a new thing in England, had various working parts made to his own designs and drawings, got his gears, radiator, axles, rims, tires, motor, and other details of the machine from a dozen various firms, supplied the simpler parts of the structure by his own labour, with the aid of a lathe, a smith's hearth, a small engine, and an anvil, and did the whole of the building and fitting of the car himself. As an amateur feat the result is surprising,

for the car on its trial trip ran to Dalton and back, a distance of sixty miles, without a breakdown, and took the long climb up Lindale Brow, and the wretched up-and-down road beyond Ulverston, without difficulty. Mr. Boundy has promised to send us a photograph of the vehicle at an early date. In the meantime, he adds that should any owner of a car be stranded in the Kendal district he will be glad to direct them to the right man to do any repairs required.

Motor-Cars in Madagascar.

A FRENCHMAN who has settled in Madagascar has attempted to take a census of automobilists, but finds his figures constantly falsified by fresh arrivals. In spite of bad roads motor-cars and cycles are common in the island. The Governor is an enthusiast and General Gallieni delights in taking the wheel of the 6 h.p. car which conveys him to various parts in the discharge of his onerous military duties. The island already supports one *depôt* which does well in accessories, repairs, and an occasional whole machine. Considering the disadvantages presented by the country the movement may be regarded as in a flourishing condition.



THE "POWERFUL" ELECTRICAL CAR AT BETCHWORTH BRIDGE, NEAR REIGATE.

Safety in Numbers.

NEAR Toulouse, quite recently, some peasants discovered a motor-car bottom upwards on the high road, and beneath it a man lying insensible. Picked up and taken to the nearest farmyard, the man, who is still in a critical condition, said he had no recollection of the circumstances of the accident, and was utterly unable to account for it. The medical opinion is that the patient, who had latterly been under treatment for a nervous disorder, must have suddenly had a fit while driving at high speed and let go of the steering-wheel of his car. Accepting the doctor's theory as to the cause of the accident, one's eyes are opened to the risk run by the solitary motorist; particularly if he be of that class which has taken to the automobile as a means of restoring his health. A companion capable of taking the wheel in a moment of emergency is, apart from the question of the pleasure which his company may or may not afford, a most desirable acquisition even on a short spin.

MR. T. RATCLIFFE, of the Reliable Cycle Works, Frinton-on-Sea, Essex, has taken up the manufacture of motor-bicycles, of which he has just issued a neat little price list. Minerva motor and fittings are employed, the arrangement adopted being also similar to that followed in the Minerva motor-bicycle.

THE STIRLING PARISIAN PHAETON.

THE accompanying illustration shows Mr. J. Stirling on the Stirling Parisian phaeton on which he successfully made a run from John o' Groat's to Land's End recently. As much interest is being aroused in the vehicle by reason of its performance, Stirling's Motor Carriages, Limited, have furnished us with the following details.

The vehicle is fitted with a $4\frac{1}{2}$ h.p. (effective) single-cylinder water-cooled motor by Panhard and Levassor, running at a speed of 750 to 800 revolutions per minute; it is furnished with a governor somewhat after the manner of a Daimler motor, and is fitted with both tube and electric ignition. The car is gear driven, three speeds and a reverse motion being available. The wheels of the variable gear are always in mesh, and the speed changes are effected silently and without shock by means of a sliding key. The speeds are nominally 6, 12, and 18 miles an hour, and the reverse about 4 miles. A leather-faced friction clutch intervenes



between the motor and the speed gear, and is controlled by a pedal, the same way as on the well-known Panhard cars. A powerful double-action brake is fitted, operated by another pedal. An auxiliary side-lever tire brake is also provided. The cylinder cooling water is circulated by a rotary pump driven by a friction pulley off the engine fly-wheel. Steering is controlled by means of a hand-wheel, while the road wheels are of wood with artillery hubs, and fitted with $2\frac{1}{2}$ in. Dunlop or Michelin pneumatic tires. The diameter of the hind wheels is 34 in., and that of the front wheels 26 in.

LORD ALWYNE COMPTON and Mr. George Kemp, M.P., are amongst the latest converts to motor-bicycling.

MESSRS. GREEN AND Co., engineers, of Reginald Road, Bexhill-on-Sea, undertake repairs and alterations to any make of motor-car.

TWO Bideford gentlemen, Mr. Prideaux Brune, of Glenlower, and Major J. H. Lamont, of Golfstone, Westward Ho! received delivery of new motor-cars last week.

THE Midland police have been paying a great deal of attention to motorists lately. On Saturday last, the general manager and works manager of a large motor firm had their names taken, as also did the works manager of another concern.

AUTOMOBILISTS who may be passing through Hastings can have any necessary repairs attended to by the Hastings and East Sussex Motor-Car Syndicate, whose offices are in Cambridge Gardens. Petrol can be obtained from Mr. T. A. Noakes, of 3, Cambridge Gardens, also from the Cinque Ports Cycle and Engineering Company, of 14, George Street, and at the establishment of Mr. Geo. Mence Smith, in George Street.

THE IRISH AUTOMOBILE TOUR.

LAST week we left the motoring party making the trip from Killarney to Limerick on Wednesday, the 14th inst. Splendid weather favoured the run, and the country looked magnificent as the motorists sped over the moorlands. Once out of Kerry bad roads were encountered, but the superb scenery along the Shannon estuary somewhat compensated. Viler grew the roads, till within a few miles of Limerick they became perfectly abominable. At Limerick the party was joined by the Hon. Leopold Canning, and several other motorists. So far the behaviour of the cars has been very satisfactory. The record is perhaps held by Dr. Colohan, whose Daimler car, since the commencement of the tour, has not needed the slightest adjustment. The attentions required by other vehicles have been mostly of a minor description. One of the cars had a very narrow shave that day in passing a horse-drawn vehicle. It was a case of squeezing through a very narrow opening or injuring the horse, and the motorist chose the former, and had a mud-guard torn off his car in the effort.

EIGHTH DAY.

Thursday was a day of surprises for the motorists. They had assembled in force in Limerick over-night, and it was expected that the day's journey to Kilkee would be made by all the cars. Unfortunately, these hopes were doomed to disappointment. The start from Limerick and the progress for a considerable distance beyond Ennis was magnificent and impressive. At the various hotels the machines were drawn up early in the morning. The weather was splendid, and an eventful day's outing was anticipated. Dr. Colohan, on his Daimler, was the first to pass down Patrick Street, and across the Shannon to the Clare side, the boundary of the two counties was soon reached.

For some distance into Clare the scenery is uninteresting, except for occasional glimpses of the lordly Shannon. Bunratty Castle, a noble old ruin, was an object of much interest. The villagers of Sixmilebridge turned out to cheer the arrival of the cars, and Newmarket paid the party equally polite attentions. The town of Ennis, which was next reached, for a considerable time was a scene of remarkable animation, the streets being crowded, and constables keeping the roadway clear for the cars. Once Ennis was passed troubles began. The Intelligence Department was defective, and the native guides most treacherous. Nobody seemed to know the right road, and the ignorance of the people as to the whereabouts of towns and villages was indicative of anything but travelling propensities. Accordingly, every single car seemed to take a different road, and mostly went miles before the error was detected. Then a headlong return would be made to the main road, and at every "cross" motorists struck each other returning from different directions. The result was a foregone conclusion. Night found the cars not all at Kilkee as had been arranged, but dotted all over the western part of the County Clare. Some succeeded in keeping the road through Kilrush into Kilkee. Some, having gone so far out of the way as Miltown Malbay, made south for the objective point. Some rushed on to Lahinch, and some shot out from Ennistymon into the famous health resort, Lisdoonvarna. It will thus be seen that all pre-arranged plans fell to the ground. Still, the run was exceedingly pleasant. The roads were none too good, and the lack of signposts—a most grievous want in all parts of Ireland, and a serious drawback to touring—made it difficult to move on with confidence.

NINTH DAY.

This day's programme was from Kilkee to Galway, a distance of 90 miles, the route being *via* the Clare coast, which contains more beautiful and imposing marine scenery in its length than perhaps all the remainder of the Irish coast. It needed but a few miles of travelling by such places as Lahinch and Liscannor to aver that even the Kerry coast is far inferior to Clare. Perhaps the fine weather and the excellent roads had something to do with the enthusiasm which prevailed. After climbing a very steep hill out of Liscannor, O'Brien's Tower, the starting point for visiting the cliffs of Moher, was reached. The building, though of modern date, has been battered into an interesting ruin by the west wind, and is a fitting adornment to the

approach to the cliffs. Topping a little knoll, the visitor is suddenly confronted with the view of sheer walls of rock rising from the sea nearly a thousand feet below. The sight has almost a stupefying effect on the beholder, so immense are the perpendicular distances separating land from sea.

The run was one of rare excitement to the occupants of those cars which elected to go by Lisdoonvarna instead of Black Head. They had an opportunity of testing their steering powers over the famous Corkscrew road. This is undoubtedly the most winding road in Ireland, and nearly resembles the roads which zig-zag up the Swiss passes. It is very narrow and the corners are fearfully abrupt. It was with some misgiving that the descent was commenced, as it seemed as if the cars would wedge at some of the turns. With brakes hard on, however, the descent was made, the only incident being a damaged brake on one of the cars. So severe was the friction that the brake actually took fire, and water had to be procured to quench it. The remainder of the journey lay through a land of stones, and no drearier scene could be imagined—a terrible object-lesson on the poverty of West Galway. Galway was reached in good time, after one of the most enjoyable runs of the whole tour.

Only six of the cars turned up, however, Dr. Colohan's Daimler, Mr. R. J. Mecredy's Daimler, Mr. Goff's Napier, the Hon. Mr. Canning's two Century tandems, and Mr. Buckea's 7 h.p. M.M.C. Mr. Goff returned to Waterford, and two of the others left for Dublin. It may, therefore, be taken that the Irish tour practically ended on Friday last week. Before departing, the English motorists, who did not go northward, sent the following telegram to Mr. Goff, the President of the Irish Club, and Mr. Mecredy—"The English contingent wish to express their keenest appreciation of the splendid reception accorded them by the Club and Irish people throughout the tour, and would like to convey through the Press their heartiest thanks to the Club."

TENTH DAY.

Saturday broke threateningly, but about noon there were sufficient signs of a mend in the weather to encourage the drivers of the two remaining cars, Dr. Colohan and Mr. Mecredy, to attempt the journey from Galway to Recess (forty-eight miles). Recess had been appointed as the halting-place, but there was no accommodation to be had there, the hotel being full up, and accordingly Dr. Colohan made by the direct road for Clifden, while Mr. Mecredy went by Spiddal to Leenane, having some thrilling experiences in the dark in the latter part of the run. Galway had scarcely been left when the heavens opened, and a perfect deluge fell during the rest of the day.

ELEVENTH DAY.

Sunday proved a gloriously fine day, and Mr. Mecredy took his party out for a spin of over ninety miles by Glen Inagh, Ballynahinch, Cashel, and Roundstone, and back to Leenane.

TWELFTH DAY.

The motorists still on tour started on Monday morning in fair weather for a circular run through Connemara. Dr. Colohan, on his Daimler, put off from Clifden, and ascended the mountains until he reached the descent into Letterfrack. Mr. Mecredy and Mr. Buckea were met at Kylemore Castle, and the journey was continued into Leenane. The greatest interest was manifested by the villagers and peasants *en route*. Mr. Mecredy went on towards Sligo in the evening, Dr. Colohan returning to Galway, and the tour may, therefore, be said to have come to a conclusion.

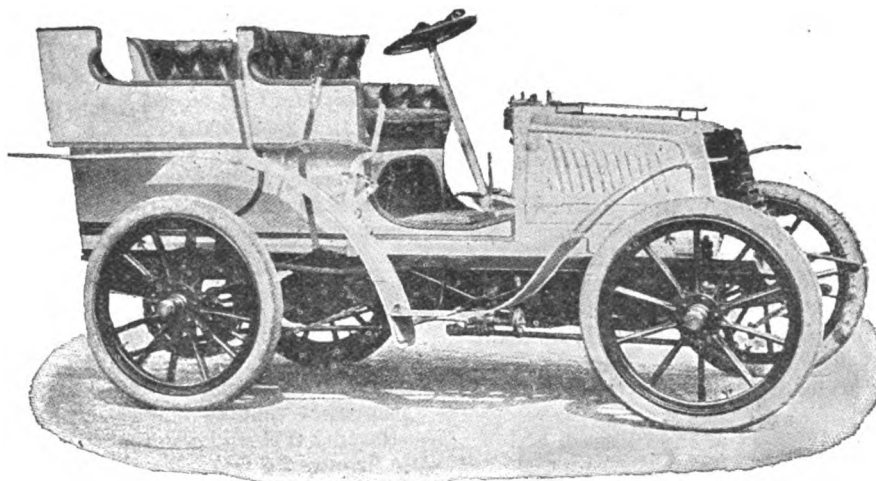
THE BARDON 10-H.P. MOTOR-CAR.



SOME time ago we illustrated and described the 5-h.p. car made by the Société d'Automobiles et de Traction (Systeme Bardon). The Auto-Carriage Supply Company, Limited, of Great Portland Street, W., are just putting on the market a 10-h.p. car by the same makers, and of which we are able to give an illustration herewith. To deal first with the engine, this is located under a bonnet in the fore part of the frame. It is of the horizontal petroleum-spirit type, and while having only two cylinders there are four pistons. There is a common explosion chamber between each pair of pistons, the engine comprising but two inlet valves, two exhaust valves, and two sparking plugs for the four pistons, there being, however, four fly-wheels. The normal speed is 1,000 revolutions per minute; by means of a foot-controlled "accelerator" this can be increased up to 1,200 revolutions. The cylinders are water-jacketed, the circulation being maintained by a pump.

Coming now to the transmission mechanism, the car is fitted with four speeds forward and a reverse motion, controlled by one lever. The system of transmission is on novel lines. As already mentioned, the engine is located transversely in the fore part of the frame. The rear end of each of the two crankshafts

terminates in a bevel wheel, meshing with corresponding bevel pinions on the ends of a cross variable-gear shaft running at the same speed as the crankshafts. Mounted loosely on the cross shaft is a sleeve which can at will be connected with or disconnected from the shaft by a special double friction clutch. On the sleeve are mounted a train of spur wheels, any one of which can be brought into engagement with corresponding pinions on the differential shaft. From the differential shaft



THE BARDON 10 H.P. CAR.

the power is conveyed to the rear wheels by the usual duplicate set of chains and chain wheels. Special attention has been devoted to the lubrication of the working parts, lubricators in the dash, in full view of the driver, conveying oil to the crank chambers and main bearings. Steering is controlled by an inclined hand-wheel, around which the various control levers are grouped. A foot-pedal operates a band brake on the differential shaft, while there are band brakes, operated by a hand lever, acting on drums attached to the hubs of each of the rear road wheels. Artillery-type wooden wheels are fitted, and these are shod with pneumatic tires. The frame being entirely independent, any type of carriage body, the illustration showing a *tonneau*.



THE city council of Newport, R.I., has granted permission for an automobile race to be held on the Ocean Avenue of that fashionable resort on the afternoon of August 30th. The race will be held under the auspices of the National Automobile Racing Association, of Newport, of which Mr. W. K. Vanderbilt is president. The thoroughfares which will be used afford a circuit of ten miles. According to the conditions imposed by the City Council, each of the intersecting streets must be flagged, and each racer before he starts must give a bond that he will compensate for any damage that he may do. It is understood that all owners of fast automobiles in America will be invited to take part in the race.

THE GENERAL AUTOMOBILE AGENCY, D. Farman, Man., Carage open day and night, all cars in stock, 100-104, Long Acre, W.C.

THE "MABLEY" CAR.

As mentioned in a recent issue, we had an opportunity the other week of inspecting a somewhat novel type of light car about to be put on the market by Messrs. John Marston, of Wolverhampton. Though a four-wheeler, it embodies the principle of double steering, the arrangement of the four 26 in. wheels being somewhat like that of the old Coventry rotary sociable, the fore and aft wheels—nearly, but not quite, in the same track—steering, while the two on the main axle are the drivers, it being claimed that by this arrangement side-slip is impossible. We are now able to give illustrations of the car, which

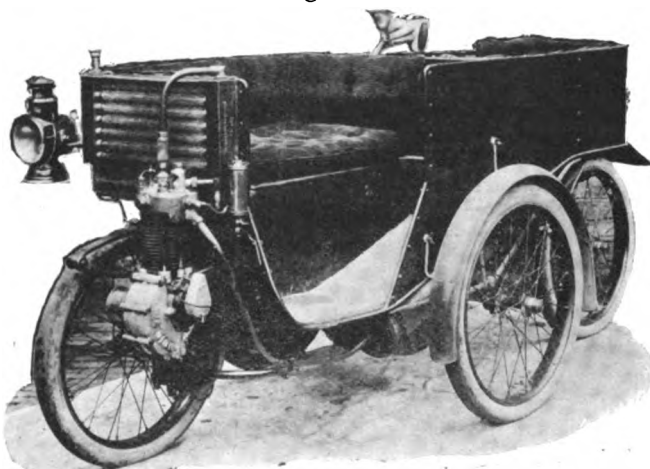


FIG. 1.—FRONT END OF "MABLEY" CAR.

has been designed with the object of providing a simple and comfortable motor-vehicle in a compact and light form. No attempt has been made to follow the general lines of a "horseless carriage." The general appearance of the car is that of two lounges placed *vis-a-vis*, beneath the seats of which is fixed a central trough or keel containing the mechanism, rendering the latter easily accessible from above, and entirely protecting it from dust and mud. The vehicle is arranged to be driven by the rear rider, who

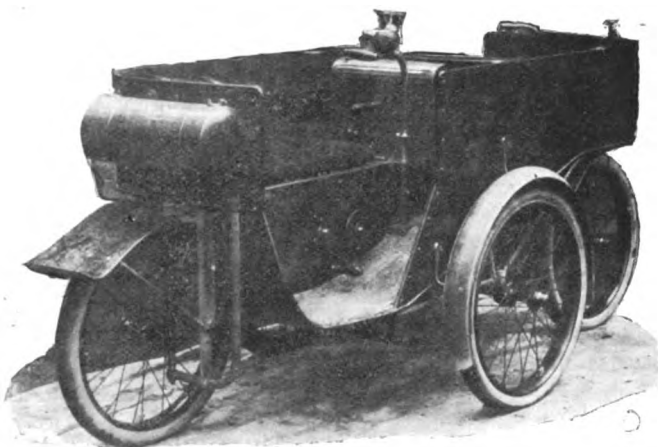


FIG. 2.—REAR END OF "MABLEY" CAR.

has under his hand the ignition, gas, air, and compression levers, together with the lever controlling two speeds and a starting handle. The length of the car is 7 ft., and width over all 38 in. The engine is a $2\frac{1}{2}$ h.p. De Dion, with a water-cooled head. This drives, through a belt, a pair of pulleys in the rear of the main axle, with a loose pulley between, somewhat as in the 3 h.p. New Orleans. From the countershaft the power is conveyed to the main axle by means of chains. The engine is placed over the front wheels, and an ingenious spring suspension enables all four wheels to remain on the ground in spite of irregularities. As may be gathered, the little car has about the proportions of a quad., but the seats are roomy and comfortable.

Owing to the extreme lightness of the car, the makers claim that it is possible to use the simplest mechanism, and a comparatively small engine, with the consequent absence of strain on all parts. They also add that the slight weight on the tires reduces the liability to puncture; while the ease with which the car can be manipulated makes its management possible even to a child. The necessity of keeping the car clean has not been ignored; the cushions are made removable as in the case of a boat, the polished wood sides and undercarriage completely enclose all working parts, and thus the whole can be washed as an ordinary dog cart. The vehicle weighs complete about 4 cwt., and can attain any speed from 4 to 20 miles an hour. One of these cars was driven from Wolverhampton to Brighton and back a few weeks ago, the run being most successful.

CORRESPONDENCE.

RED HOT EXHAUST PIPES.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I have a $2\frac{1}{2}$ h.p. De Dion motor which has lately been cleaned. Since that, however, the exhaust pipe gets red hot after about three minutes' run. Could any of your readers kindly inform me why this now happens, and whether it is good or bad as regards power evolved?—Yours faithfully,

T. C. FRANCIS.

A SUGGESTED CLUB FOR MOTOR BICYCLISTS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—With regard to the suggested club for motor bicyclists, I think Mr. Underwood has struck a note that will appeal favourably to a good many riders of this class of machine. Tri-cycles are fast going out, while bicycles are evidently coming in, and as there seems to be a certain "caste" difference between motor-car drivers and users of the two-wheeler, I shall be very glad to support any movement in favour of a M.B.C.—Yours faithfully,

JOHN J. LEONARD.

THE LOCOMOBILE STEAM CAR.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—In February last, on application, I received from the Locomobile Agency in Southport some literature. One of the pamphlets sent to me was entitled "How to Operate." After studying this, and also the prospectuses of other firms, I decided in favour of a Locomobile steam car, and in May I went over to Southport and bought one from Mr. Buxton, the agent there. Although I like the car very much I did not care for the petrol fuel, on account of its inflammable nature, and also on account of its cost. There were some points about the car that I did not understand, so I wrote to the agent for information. Much of this Mr. Buxton kindly supplied me with, but I was not quite satisfied. In "How to Operate" it says "there are three check valves 'B,' 'C,' and 'D,' between the water tank and the boiler." I could only make out two of these valves and asked about the third. In reply Mr. Buxton says, "I am afraid the book is not as up to date as the car, the third valve is in the pump." This explanation is possibly sufficient for an engineer, but I am not an engineer, only a customer. Again I quote "How to Operate." "All needle valves have been furnished with neat metal wheel handles." I asked why several of the needle valves in my car were not furnished with metal wheel handles. To this query I have had no answer.

After using the car for a short time it met with an accident, and as I was afraid of the petrol I sent it up to Clarkson and Capel's for repair and also to have the Clarkson burner and condenser added. On hearing that the car was finished, I went up to London, had the alterations carefully explained at the works, and then drove the car from London to Chester. I did not try to cover the distance as rapidly as possible, as I wished not only to give the car a fair trial, but to enjoy the drive, and to see the country. I went about twenty miles the first day, sixty miles the second, sixty miles the third, and the remaining forty-two miles the fourth day. I did not notice particularly the amount of water consumed, as the water tank was filled up before starting each day and at lunch time also. The paraffin

consumed was eighteen gallons, costing 7d. or 8d. a gallon. This works out about one gallon for ten miles, but as I was not anxious to see how small a quantity of paraffin I could use, I did not spare it, frequently stopping for several minutes, leaving the paraffin still burning. It appears to me that a gallon would easily go twelve or thirteen miles if that were the principal object. I may add that after further experience I am perfectly satisfied with the burner and the other additions made to the car by Clarkson and Capel.—Yours truly,

JAMES TAYLOR.

A NEW UNIVERSAL-JOINT PROTECTOR.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—In your issue of August 10th, which, owing to my being away from home, I have only just seen, I notice a paragraph and drawings of the Thomas universal-joint protector. I am sending you an example of my own patent dust-proof cap, which I have had in use on the De Dion voiturette all the summer and have found most effective. You will see the similarity of the two ideas, which I think is an extraordinary coincidence, seeing that I did not know until I saw your journal that such a device was in existence.

There are one or two slight differences in the construction of the caps, one of the chief being the small spring which I place on the leather cap in order to keep the joints of the washer absolutely tight. One of the ends of this spring can be unhooked and the washer placed round the axle and the spring refixed, thus rendering the whole joint water-proof and dust-proof while allowing the movable joint entire freedom.—Yours faithfully,

H. MULLINER.

[We have examined Mr. Mulliner's protector, which is, as he says, very similar to the Thomas device illustrated in a recent issue. It is strange that two inventors—one in France and one in England—should hit on practically the same idea. Ed.—*Motor-Car Journal*.]

RANDOM JUSTICE.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I see in last week's *Journal* a list of places where random justice has been administered to motorists. Why miss Chelmsford, one of the principal towns visited by innocent and persecuted motorists bent upon enjoying the delightful local scenery and all that nature gives to the intelligent user? Yet, in spite of its natural advantages, Chelmsford is likely to remain in the rearmost rank of advance because of the poverty and ignorance of its ruling brains, which are incapable of absorbing new ideas. Hardly a week passes without a fine of £5 and costs being inflicted at the Shire Hall upon some unfortunate motorist in spiteful hate of progressive ways. As a driver on the roads of this locality I find that if the automobilist was of a litigious nature scarcely a journey would be made without some of the following charges against horsekeepers being brought into the Shire Hall:—Leaving horses unattended, driving on wrong side round corners, driving without lights, asleep whilst driving, causing obstruction by crossing and recrossing ahead of a car, and driving uncontrollable horses to danger of life and limb.

The light of reason may break upon a country which within the memory of many now living opposed the railway as detrimental to the carrier's cart, which deposited the commercial for a night at the village tavern; but it will be foreigners who bring the needed brain. It often strikes me that we should have fewer robberies and less crime if the police were more devoted to their detection than to motor-cars, public-houses, and small boy offenders. How many accidents can be proved against the fourteen-mile-an-hour car as against those arising from the above-mentioned causes, each of which is a breach of the law.—Yours truly,

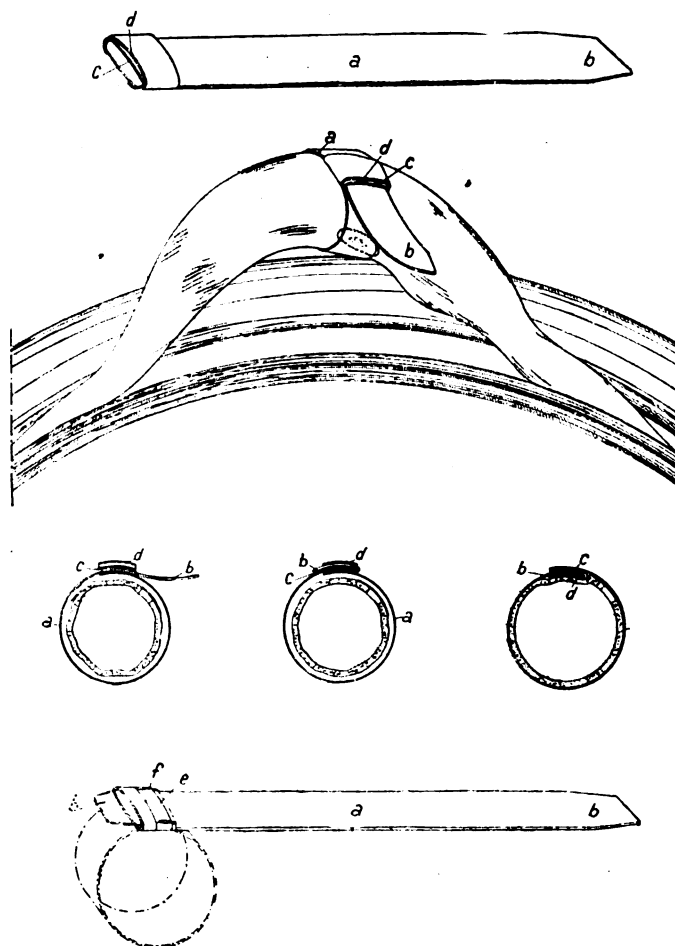
FAIRPLAY.

MR. G. H. BECHTEL, of Southport, writes: In your last issue there is a short paragraph stating that Mr. E. Collins, of Coventry, was the agent for the Werner motor-bicycle for the north of England. May I be allowed to state that I have an agreement with the Motor Manufacturing Company whereby I

can sell any of their cars, tricycles, or Werner bicycles in Manchester, Liverpool, Southport, and surrounding districts?

THE SENNEVOY TIRE-REPAIRING DEVICE.

THE Baron de Sennevoy, of Paris, has lately devised a sleeve or band of soft rubber for use in repairing the inner tubes of motor pneumatic tires. It consists essentially of a ribbon of thin elastic rubber *a*, one of the ends of which is slightly reduced in width and the other end of which forms a buckle or clasp *c*. This buckle is made either of the same piece as the band or ribbon, or it is cemented to it. Above this buckle or clasp there is a second one *d*, cemented to the ribbon *a*. This second clasp, the same as the first one, may be formed by an integral portion of the ribbon.



The use of this sleeve is as follows:—After having located the puncture, a piece of ordinary patching rubber is applied in the regular manner. Then the sleeve is taken and is immediately placed around the inner tube over the puncture or patch just applied by passing the reduced end through the clasp *c*, nearest the ribbon, bending it back and passing it through the second clasp *d*. The sleeve formed in this manner is made of such diameter as to be slightly smaller than the inner tube when inflated. To insure an absolutely reliable joint between the ends of the sleeve the latter is turned inside out, so that the clasps come in contact with the inner tube and the air pressure within this tube assists in strengthening the joint.

The inventor of the device claims that by its use all risk of the patch being detached in places, and becoming leaky by the air pressure within, is obviated, and that, on the contrary, the air pressure does its share in maintaining the patch perfectly tight. The advantage claimed for this method of repair is that it permits the motorist to proceed as soon as the repairing is done without waiting for the solution to dry.

CONTINENTAL NOTES.

By "AUTOMAN."

THREE rival flying machines are being prepared with feverish haste near Paris, and each of the inventors or constructors is equally certain of being able to win the Deutsch prize quite easily. M. Santos-Dumont will have the balloon for his No. 6 delivered to him by its maker, M. Lachambre, on the last day of August. The balloon will not be cigar shaped this time, but will be ellipsoidal, to use the correct scientific term, or like a sausage, to revert to every-day language. It will be of slightly larger capacity than the last, in order that water-cooling may be added to the Buchet engine, which is already in the workshops of M. Buchet with that object. The water-cooling will be a great step in advance, for the failure of the engine on one or two occasions was entirely due to overheating. The ellipsoidal form has been chosen by M. Santos-Dumont in order to give the ends greater strength to withstand the increase of pressure caused by travelling against the wind. The remainder of the apparatus of No. 5 has been repaired and is ready to be attached to No. 6, which will no doubt be complete early in September.

A LITTLE further from Paris, on the Western Railway between Bois Colombes and Argenteuil, a certain M. Roze is just bringing to completion a much larger flying machine. M. Roze has been at work some years on his apparatus, the model of which has, I believe, travelled in the air. Although quite sanguine, even certain, of the capabilities of his invention, M. Roze has never yet tried it. I well remember in the autumn of 1899 the Duc de Morny bringing me a prospectus of M. Roze's flying machine which was to start from the Paris Exhibition on daily aerial trips to London, Berlin, St. Petersburg, etc., etc. The trips, however, were unavoidably postponed. I understand now, however, that M. Roze is ready to fly, or very nearly so. From the latest reports his hydrogen only required to be purified. His flying machine consists of twin cigar-shaped balloons, made on a light framework of aluminium. From these balloons is suspended the car containing a 20 h.p. water-cooled petrol engine, working four screw propellers; two of the latter are intended to raise the machine, which is $1\frac{1}{2}$ cwt. heavier than the air, and two to propel it in a forward direction. M. Roze has no experience of the air, but if, like M. Santos-Dumont, he has not made a series of flights in more or less experimental machines, he has attended to details which M. Santos-Dumont seems to disregard entirely, for, in a sort of ground floor story underneath the position arranged for the mechanism, there is a car for the passengers, which is most complete in its details—everything that may be required to make the trip pleasant being included.

THE brothers Renard, who are busy constructing a navigable balloon at the military balloon station at St. Cloud, are not only sure of being able to win the Deutsch prize, but they affirm that they will be able to fly to Rouen and back *in any wind*. Details of their machine are, however, difficult to procure.

THE motor-car has become quite a royal institution in Italy since the King, Victor Emmanuel III., became an enthusiastic *chauffeur* and converted his Queen to the pleasures of automobilism. The Duchess d'Aosta and her brother, the Duc de Montpensier, and the Princess Loretta are to be seen frequently motoring, and nothing seems to please the King better than to take his Ministers for a run when they come down to the royal castle of Racconigi, where he is passing the summer. The detectives, whose duty it is to shadow the King wherever he goes, have been mounted on bicycles, but they have a hard task to keep up with His Majesty when he takes the wheel.

THE French federation of *chauffeurs*, conductors, mechanics, electricians, and automobilists has placed before the Chamber of Deputies a petition which aims at the right to organise. The union, which it is hoped to place upon a legal footing, proposes

to issue certificates of efficiency to motor-car drivers and others in charge of machinery. It also stipulates for a recognised rate of pay, regular hours, liability of employers in case of accidents, healthy workshops, and many other points which various Acts of Parliament and trade unionism have made law in England.

ON September 3rd there will be an automobile race meeting at the Motodrome at Ostend, when prizes to the extent of £400 will be competed for. The meeting was intended originally to have been held on September 2, but it was postponed until the 3rd, in order to allow the automobilists who are competing at Deauville on the 1st to be present. There will be three races, viz.:—1, Six laps (about 10 miles), for motor-cycles; 2, Ten laps (about $16\frac{1}{2}$ miles), for light carriages weighing up to 12cwt. 3qrs. 6lbs.; and 3, Fifteen laps (about 25 miles), for heavy cars. Entries must be sent to the Secretary of the Hippodrome Wellington, Ostend.

THE Salon de l'Automobile du Cycle et des Sports, organised by the Chambre Syndicale de l'Automobile, and supported by the A.C.B., has been definitely fixed for March 10 to 19, 1902, and will be held in the great hall of the Palace du Cinquantenaire at Brussels. The centre of the hall will be reserved for trial runs of the different cars.

MR. SHERIFF LAWRENCE, M.P., in company with Mr. Roger Wallace, K.C., the Chairman of the Club Committee of the A.C.G.B.I., left for New York on Wednesday on a visit to Mr. Thomas A. Edison, at Orange, New Jersey.

MR. EDMUNDSON, of the Millown Laundry, Dublin, has purchased a 24 h.p. Daimler motor-van for collecting and delivering goods. The vehicle can carry several tons, and as the class of goods to be carried are bulky for their weight, the car is of large proportions.

MR. BALFOUR, who was for a few days this week the guest of Lord Elcho, drove Lady Elcho to a Church bazaar at Wickhamford in his motor-car. After her ladyship had performed the opening ceremony, Mr. Balfour's car took many of the visitors for drives at a shilling a head, the money earned being devoted to the church restoration fund, on behalf of which the bazaar was held.

THE International Motor Car Company, of High Street, Marylebone, W., have lately introduced several improvements in their Charette cars, and we hope to publish illustrations of the improved vehicle in an early issue. In the meantime we may mention that the company are now offering to send a Charette to any part of England or Wales free of charge, so that intending purchasers may have an opportunity of testing the car over the roads in their own district.

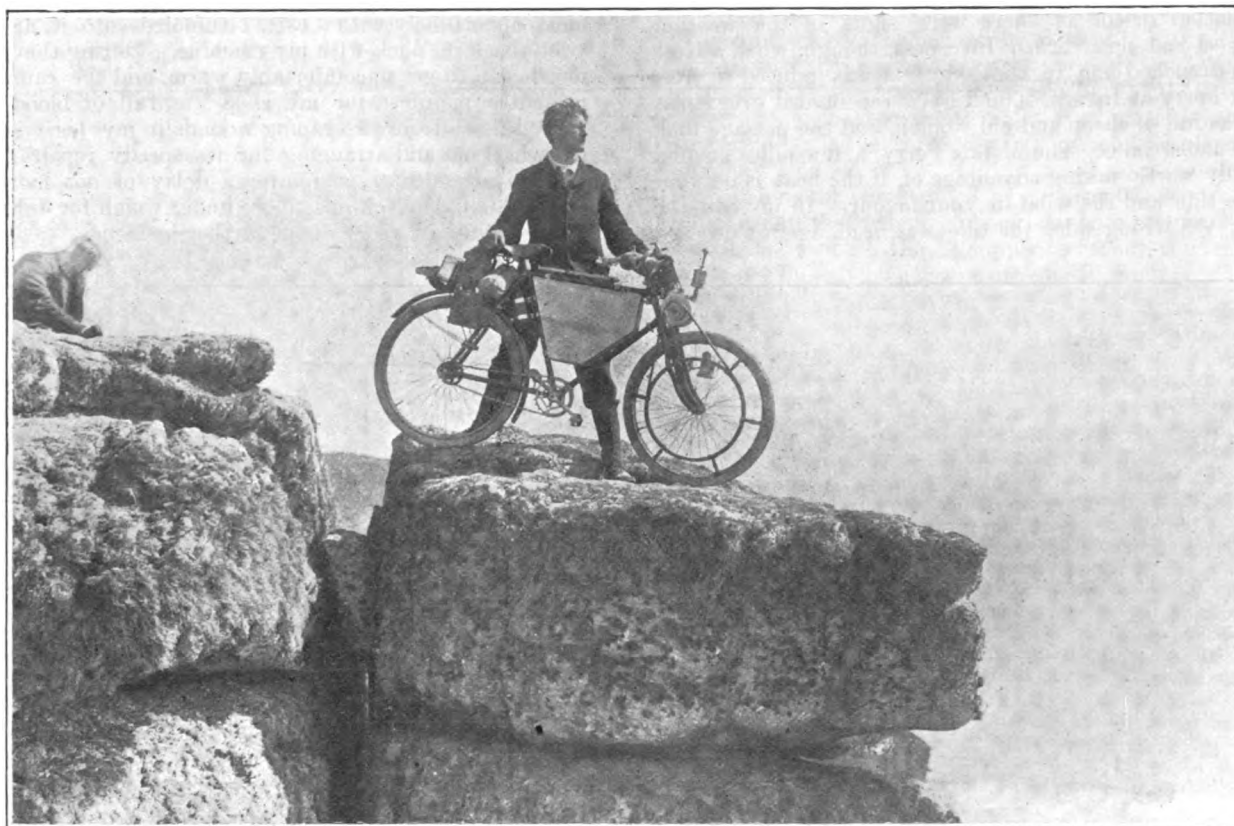
WE learn that the directors of the Century Engineering and Motor Company, Ltd., Willesden Junction, have decided to manufacture and place upon the market at an early date a high-class little motor of about $1\frac{1}{2}$ h.p., suitable for motor-bicycles. Arrangements are already in hand to take this branch up in a thorough manner. Great attention will be paid to detail and finish, and all unnecessary complications will be eliminated, so that even the veriest novice should be able to obtain satisfactory results.

A CURIOUS motor-car accident occurred at Southsea last Sunday evening. Coming to a road which appeared to be partially blocked, as indicated by a solitary lantern swinging in the middle, the driver turned his car to that side which he supposed to be open. A rope stretched across the full width of the road caught his companion under the chin, inflicting such injuries that medical attendance was necessary. Investigation proved that the red light which had attracted the notice of the occupants of the car was some yards on the other side of the rope; also that it was one of four placed one behind the other. The incident suggests yet another danger to motorists at the hands of those ubiquitous individuals whose occupation is the destruction of roads. Motorists riding at night will do well to approach the red light which marks the scene of such operations with the greatest caution.

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Land's End to John o' Groat's

ON A WERNER MOTOR-BICYCLE.



AT LAND'S END.

HAVING heard a good deal about motor-bicycles, but not having had any personal experience of them, I borrowed one from the Motor Manufacturing Company, and, after a couple of short rides, was so pleased with its satisfactory running that I decided to give it a really serious test, and I proposed to the company that they should lend me a Werner and let me go from Land's End to John o' Groat's upon it. A machine was prepared with special tanks for containing oil for a long distance, and on Wednesday, July 31st, I took the machine down by train to Penzance, and next morning essayed to start, but had to turn back immediately, owing to the bad state of the weather.

Next morning I left Land's End Hotel at five o'clock, and ran through Penzance and Exeter to Bristol without experiencing any particular adventures till within twelve miles of Bristol. Here the breaking of a small copper washer caused a very serious delay and a great amount of labour. Spare washers should have been in the wallet, but alas! after a long hunt, I could not find them, and so had to make the best of my way with the engine only working at less than half its proper power, over some very steep hills. All the shops were shut when I got to Bristol. Notwithstanding this, I went round in a cab, and did my very best to secure some asbestos, to replace the broken washer. All my efforts were fruitless, and I finally returned to the hotel, offered a reward to anyone who should bring me the much-desired material, and went to bed. It was not till twelve hours afterwards that my reward was claimed by an energetic waiter, who had succeeded in obtaining a small piece of asbestos. The delay, of course, was very serious, but with the asbestos I soon stopped the leak caused by the broken washer, continued my journey, and on Saturday night reached Preston. In this town I stayed for a few hours' sleep, and, rising early in the morning, travelled, via Kendal and Shap Fell, to Carlisle, at which latter place the petrol tanks were filled before leaving for Edinburgh.

At Moffat the mountain road was taken, and I found myself in for a steady climb of many miles over a most dreary pass, where the road was often not nearly as safe to ride upon as the grass bordering its edges. However, Edinburgh was safely reached as evening had begun to draw in. While dining at the Douglas Hotel a gentleman, who had overheard some of my conversation, presently came up and introduced himself as the first rider who ever made the journey I was then engaged upon. He showed me a much-faded photograph, which he took from his pocket-book, depicting himself and his tall bicycle standing outside the hotel at John o' Groat's. This was some time in the seventies, and I was struck by the extraordinary coincidence which should have brought us together in such a curious fashion.

After a short time spent at the Douglas Hotel, I caught the last ferry-boat at Granton, crossed to Burnt Island, and then completed the day's journey by running through pouring rain and in the darkness to Perth. In descending the long hill into Perth the first mishap was met with. Owing to the terrible glare from the powerful electric lights at the foot of the hill, it was impossible to see the road, and, though going quite slowly, I collided with the pavement, coming down with sufficient force to carry away the brake-lever and the advance-sparking lever. From that point I had to operate the brake by holding on to the wire itself, the end of which I had made fast to the handle-bar. I also had to advance and retard my ignition for the rest of the journey by seizing hold of the vulcanite block and moving it to and fro by hand.

Much refreshed by a few hours' sleep at Perth, I left next morning early, and, travelling swiftly through Dunkeld and Pitlochry, had soon left the Pass of Killiecrankie behind and had begun the long ascent from Blair Athol to Dalwhinnie, between which places I had a most amusing and exciting race with a train. The line all along this district runs within a few yards

of the road, and is always well within sight of it. The gradient, of course, is very heavy as railway inclines go, but exactly suited my machine, the more so since the rain, which was falling at the time, practically made a water-cooled of my normally air-cooled motor. For at least seven miles I headed the train, but when the descent began on the other side I was soon, of course, left behind.

At Carr Bridge a few minutes' stop was made in order to have my clothes dried, as there were signs of the weather moderating. I had not reached Inverness, though, when a fresh storm soon drenched me to the skin. I was induced to cross the Kessock Ferry at Inverness, and have repented it ever since. The boat was full of sheep and old women, and the passage took an unconscionable time. The Meikle Ferry, a few miles beyond Tain, is really worth taking advantage of, if the boat is on your side, and the tide and the wind in your favour. In my case the boat was on the wrong side, the tide was dead against us, and

daylight, and the road a perfectly straight one, the cyclist crashed into me, almost as if he had done it on purpose. The impact was terrific, and my cyclist friend performed an aerial flight of a most unusual character. I soon picked myself up, and began to look round to ascertain the extent of the damage. Seven spokes were gone from my front wheel, rendering it impossible even to push the machine. Apart from this, practically no other damage was done, and a friendly blacksmith arriving most opportunely with a cart, I tumbled into it, and was soon safely back in Wick with my machine. During the journey my foot began to get uncomfortably warm, and the cause of it was presently manifest, for my shoe was full of blood, which had poured down from two gaping wounds in my leg. After taking my wheel out and arranging for its speedy repair I had these wounds attended to, and, after a delay of not more than four hours, I found myself once more under weigh for John o' Groat's, where I duly arrived without further incident.



AT JOHN O' GROAT'S.

there was not any wind. Calculating my speed at the legal limit only, I lost about 20 minutes over this ferry. I landed at last, and, having been carefully and minutely directed on to the wrong road, I soon found myself in Dornoch, and in regaining my right course I had to traverse some miles of exceedingly greasy and dangerous roads through some woods. I had fully intended to ride straight through to John o' Groat's without further stoppage, but a puncture near the Mound Station delayed me so long that darkness had set in before I reached Golspie, and, fearing to tackle the much-dreaded Ord of Caithness and the far-famed Berriedale Hill during the dark hours—my lamp had fallen to pieces from the rough treatment to which it had been subjected—I finally decided to await the morning light at Golspie.

Wick was reached at 9.30 the following morning, and I was congratulating myself on the impending successful finish of my journey, when, only two miles from Wick, a cyclist on his wrong side caused me a very bad accident. Though it was broad

My machine was fitted with Dunlop tires, and it is worthy of mention that the front one did not once puncture; in fact, I only had one genuine "wire-nail" puncture (back wheel). The "gash" which I sustained at Golspie was caused by the rear mud-guard having come loose and scraped the rubber off all round the side of the back cover and finally cut through the lining and let the tube through "swish!" In case of puncture, the motor-bicycle can be turned upside down with perfect ease and safety; the accumulators must, however, first be slipped out of their case. The belt gives no trouble, and is, in my opinion, a very satisfactory part of the machine. With the exception of the delay at Bristol, the motor, which was lubricated by D oil, worked excellently.

In closing, I would like to remark that this is the first of the many attempts which have been made to end successfully, one thing or another having always prevented former riders of motor-cycles from getting through at all.

HUBERT EGERTON.

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AUSTRALIAN-BUILT VOITURETTE AND MOTOR-BICYCLE.

ALTHOUGH the motor-car movement has not as yet made very great progress in Australia, a number of engineers in the Colonies are busy devoting their attention to the subject. We are this week able to illustrate a voiturette and motor-bicycle that have lately been turned out from the Lewis Cycle Works of Mr. T. P. O'Grady, of Adelaide, South Australia. As will be seen, the car (Fig. 1) is of the single-

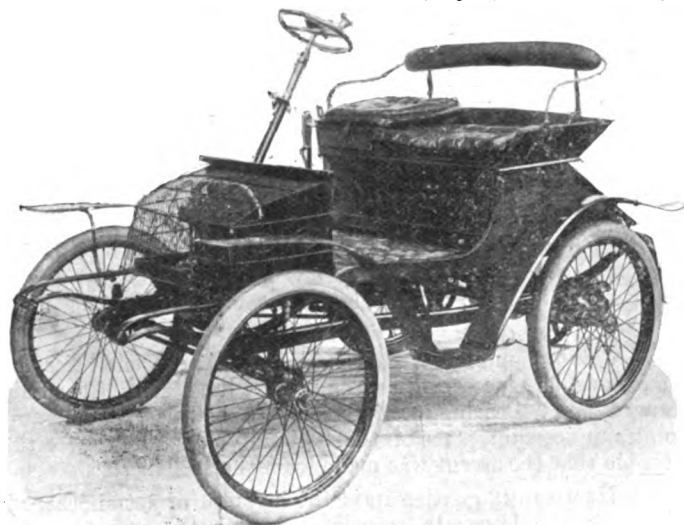


FIG. 1.

seated type, the seat being of ample width to accommodate two or three persons. The motor, which is of the air cooled variety, is situated, together with the oil tank and carburettor, in the fore-part of the frame, under the wire hood, while the electrical ignition apparatus is located under the seat. Two speeds (six and twelve miles an hour), friction drive, and free wheel are provided, manipulated by a single lever, through the agency of a belt and a double set of spur wheels. The belt connects a flanged pulley on the motor-shaft to one of three pulleys mounted on a countershaft which is carried behind the rear live axle; these pulleys are so arranged that the belt only drives when it is in contact with either of the outside pulleys. On this countershaft there are also fixed two pinions gearing alternately with either the high or low-speed spur wheels mounted on the differential shaft. The lever which controls the speeds, etc., is mounted alongside the steering column convenient to the driver's left hand, and stands normally in a vertical position. On moving it towards the seat the whole countershaft is moved laterally, and the low-speed pinion is caused to engage with its spur wheel, the belt running progressively on to one of the fixed pulleys above-mentioned. Moving the lever in the opposite direction engages the high-speed gear; when the lever is returned to its vertical position the driving belt runs on to the loose pulley, and both gears are disengaged, the motor thus running absolutely free. The control levers are mounted on the steering standard, and two brakes are provided—one a foot brake applied to the differential, the other an emergency tire brake operated by hand. The dimensions of the car are 4ft. 6in. by 4ft. wheel base; the wood wheels are 28in. in diameter, shod with 2½in. pneumatic tires.

Mr. O'Grady informs us that the car has fulfilled all expectations, having been used by some of the leading doctors and public men of Adelaide, who have been most enthusiastic in praise of the new locomotion. On account, however, of the great heat of the summer months, and of the heavy gradients of the roads through the Mount Lofty ranges, it has been decided to fit all future cars with water-cooled engines of higher power.

Fig. 2 gives a view of the motor-bicycle, from which it will be seen that the motor is carried vertically between the crank bracket and the back wheel, allowing sufficient room for the rider

to pedal the machine in the ordinary manner. The oil supply is carried in the large tank located in front of the seat column; the battery is suspended from the top tube, and the induction coil is carried immediately behind the crank bracket. The carburettor is fixed in front of the low part of the cylinder; the engine, which is of the vertical air-cooled single cylinder type, working up to 1½ h.p., drives the rear wheel through the medium of a countershaft which is carried between the motor and the rear wheel; this countershaft carries three chain wheels, the largest of which is connected by a chain to a small pinion on the motor-shaft; the remaining two are both free wheels, one being connected to the bracket chain wheel, the other to the rear hub. This arrangement permits of a free motor, at the same time dispensing with all disagreeable shock when the motor is suddenly stopped.

The motor is controlled by four small levers mounted on the top bar and the battery current can be interrupted by the usual handle bar switch; the oil supply to carburettor can be shut off by a needle valve when any prolonged coasting is indulged in or the machine left for any time. Two brakes are provided—one a front wheel rim brake, operated by the usual lever; the other back-peddalling brake. The whole machine is built specially strong to resist the strains of fast travelling, twenty-seven miles an hour having been attained over average roads. With the exception of the bicycle components and electrical gear the whole machine, including engine, has been constructed at the Lewis Cycle Works. The machine has, we are informed, been submitted to extended trials and is remarkably free from shock on account of the manipulation of the engine. In starting, the rider mounts with one pedal uppermost, and by the time the cranks have made one revolution the engine is started and pedalling can be dispensed with. In descending hills it is simply necessary to switch off current to stop the motor, and the machine becomes a free-wheel bicycle. Should it be necessary while travelling to re-start the engine, all that is to be done is to switch on the current and pedal a few turns; while, should the motor become

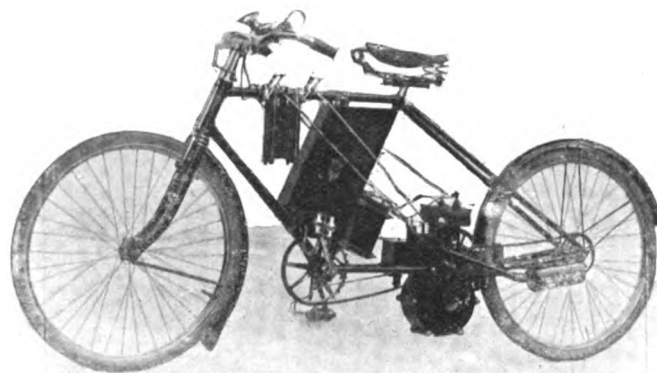


FIG. 2.

disabled, it is only necessary to remove the chain (not shown in the illustration) which connects it to the countershaft to permit the machine to be propelled like an ordinary cycle.

THE French Automobile Club has temporarily suspended M. Jenatzy for irregularly placing a number on his car during the recent Paris-Berlin race.

"HOW TO BECOME A GOOD MECHANIC" is the title of a pamphlet written by John Phin, author of many other well known publications connected with the workshop and laboratory, which has now reached a second edition, and is published by the Industrial Publication Company, of New York. Though much of the advice therein contained concerns educational institutions in America, many broad and general principles are laid down, which the young English mechanic, determined to rise, would do well to digest. What not to study is just as important as what to study, and on this point Mr. Phin offers some sound advice which, if followed, should save much unnecessary cramming of worthless and vexatious subjects.

THE GENERAL AUTOMOBILE AGENCY, D. Farman, Man., Garage open day and night, all cars in stock, 100-104, Long Acre, W.C.

THE PINART MOTOR-CAR.

ONE of the novelties at the last motor-car exhibition in Brussels was the new light car shown by M. Ernest Pinart, of Rue des Coteaux, Brussels. The frame of the vehicle is built up of channel steel, and as it carries the engine and the whole of the transmission and other mechanism any type of carriage body can be fitted. To deal first with the

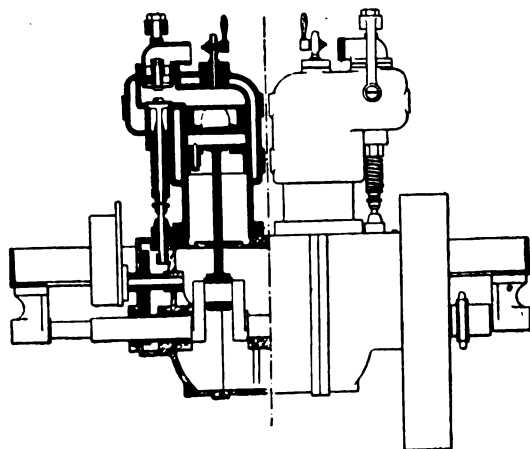


FIG. 1.—PART-SECTIONAL ELEVATION.

motor, which is placed on the fore part of the frame, this is of the vertical two-cylinder type (Figs. 1 and 2) developing 6 h.p. The crank shaft and exhaust-valve control gear are enclosed in an oil-containing chamber of aluminium. Electrical ignition is at present adopted, but M. Pinart is experimenting with a

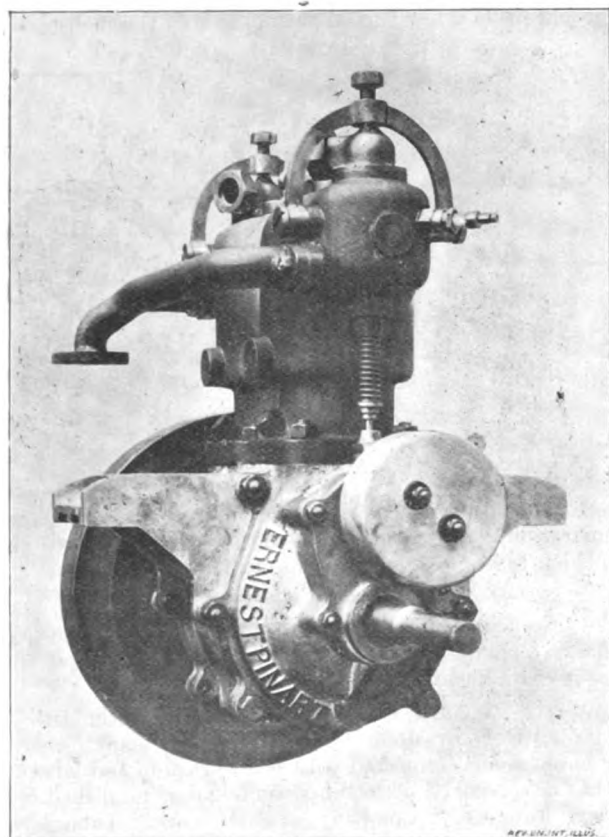


FIG. 2.—GENERAL VIEW.

magneto-electrical device which he hopes to substitute later on for the coil and batteries. The inlet and exhaust valves are so arranged that they can be taken out for inspection or grinding purposes by the removal of a single bolt. The two cylinders are,

of course, water-jacketed, the circulation being maintained by a pump driven off the fly-wheel; a radiator is provided in connection with the water circulation. A constant level carburettor of the Longuemare or Sthénos type is used to furnish the carburetted air to the motor, but M. Pinart informs us that he hopes later on to introduce a new petrol distributor, in which all the variations in the mixture are obtained automatically.

Wheel steering is fitted to the car; immediately below the hand-wheel are two levers, one actuating the change-speed gear and one controlling the ignition. Three forward speeds and a reverse motion are available, the change-speed gear being enclosed in an oil-containing case. The foot pedal controls the reverse motion, a second pedal actuating the clutch between the engine and transmission mechanism. Three brakes are fitted to the car, the lever and pedals controlling the same being also connected up to the clutch.

In addition to the 6 h.p. cars, M. Pinart is also building 9 h.p. two-cylinder cars and 12 h.p. four-cylinder vehicles.

THE Whippet Motor Works, Falcon Terrace, Clapham Junction, have a staff of first-class mechanics thoroughly used to motor work, and are equipped with a complete plant for motor repairing.

AN 8 h.p. motor-car driven by M. Anchorena-Frias and two friends, has successfully accomplished the ascent of the Saint Bernard pass. Bearing in mind the interdict placed upon automobiles in certain parts of the Swiss republic, it is more than probable that the ascent was made from the Italian side.

A HAMPSHIRE gentleman is the inventor of yet another airship, which he hopes to complete in time to compete for the Deutsch prize. The framework of the vessel is of steel and bamboo, the balloon proper being secured to the car by stays, while the car is itself enclosed in a canvas shell, in which a door and two "ports" are placed on either side. An oil motor of the inventor's own design imparts power to a three-bladed screw propeller.

It is well known that the Hovis Bread Company, Ltd., of Macclesfield, is a very go-ahead concern. Their latest way of showing this is by purchasing an 8½ h.p. Decauville car through Mr. Reginald Egerton. The car is to be specially fitted with hood, aprons, etc., to protect the driver from bad weather, and the back part of the car is to be fitted to take business cards and other matter. The company hopes in due time to traverse the whole of England and Wales with the vehicle. We wish them every success, and shall be pleased to hear of the progress of the car from time to time.

If the plans of Mr. S. A. Miles, of Chicago, reach maturity, more than one hundred motor-cars will leave Chicago on the 31st inst., carrying a host of visitors to the Pan-American Exposition in Buffalo by easy stages. The following itinerary has been projected: Saturday, August 31st, Chicago to La Porte, Ind., 69 miles; Sept. 1st, La Porte to Ligonier, 71 miles; Sept. 2nd, Ligonier to Napoleon, 81 miles; Sept. 3rd, Napoleon to Toledo, 41 miles; Sept. 4th, Toledo to Norwalk, 64 miles; Sept. 5th, Norwalk to Cleveland, 55 miles; Sept. 6th, Cleveland to Conneaut, 70 miles; Sept. 7th, Conneaut to Dunkirk, 79 miles; Sept. 8th, Dunkirk to Buffalo, 41 miles, the journey aggregating 571 miles.

A NEW method of burning liquid fuel, called the Hydroleum system, has been shown in operation this week at the works of Messrs. Muirhead and Co., at Elmer's End, Beckenham. All descriptions of liquid hydro-carbons, from petroleum to the various tars and tar refuse, are consumed without smoke or smell, and so perfect is the combustion and so great the heat generated that a considerable saving is effected in fuel for boilers of every kind. The burner comprises a combined feed of steam and oil and the combined vapour is concentrated on an incandescent fire brick. Here the steam is chemically split up by the heat into oxygen and hydrogen, which, combining with carbon, are ignited and passed through the boiler. The process was shown in operation on a 50 h.p. Hornsby water-tube boiler, and on a steam motor-lorry.

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HERE AND THERE.



UNITED MOTOR INDUSTRIES, LTD., inform us that they can now furnish cycle makers and others possessing small plants with castings in the rough or finished for De Dion-Bouton motors.

A FIVE-MILE motor-cycle race was held in the Priory Park at Chichester on Thursday last week. Mr. T. S. Adcock, who had 600 yards start, came in first on a 2½ h.p. Ariel tricycle, Mr. Shippam (scratch) being second.

DRIVING from Barnes to Richmond the other day, a motorist lost control of his steering gear in a moment of inattention, with the result that the car broke down a fence and entered a private garden by the roadside before it was brought to a stand.

JOHN CHILD MEREDITH, Ltd., of Birmingham, have just issued a new list of motor cycle parts, copies of which they will send on application to any of our readers. The firm are making a speciality of water-cooled heads to fit De Dion, Ariel, and Aster motors.

A MOTOR-CAR, driven by a German gentleman, collided with a cyclist at Bromley the other day. But for the promptness of the motorist, who stopped at once, a serious accident would in all probability have resulted. As it was, the cyclist escaped without injury, though his machine was wrecked.

ON another page we reproduce a snapshot of Mr. F. J. Butterworth, accompanied by his wife and daughter, leaving Morton Old Hall, an interesting pile near Congleton, Cheshire. Mr. Butterworth is an enthusiastic motorist, and is often to be seen in his Star car in the district of Newcastle, Staffs.

IN our last issue we referred to the appointment Mr. W. Hemingway has taken up at the Daimler works at Coventry, and to the fact that for two years he conducted the cycle class at the Battersea Polytechnic. The Governing Body of that institution is now open to appoint a new instructor, not only in cycle, but also in motor construction.

MR. WILLIE JAMES, of West Dean Park, West Dean, near Chichester, who is now staying with the Duke of Devonshire, has just bought a handsome 12 h.p. Panhard car, and has already received delivery from the British Automobile Commercial Syndicate. The car is a phaeton with a seat at the back for the mechanic, and the whole is covered with a dais, with glass back and front.

BURNLEY residents are agitating for a motor-car service which would link up the outlying districts of Lane Head, Worsthorne, Rosegrove and Higham, by a sixteen or twenty mile tour. It is urged that such a service would be useful in case of fire in any of these outlying parts, and would also facilitate other municipal work, as well as transport the general public.

BAD times have fallen to the lot of the London omnibus during the past few months, and Alderman Pound had no very cheering tale to tell at the half-yearly meeting of the London General Omnibus Company. The *Daily Chronicle* considers that if the omnibus companies wish to save themselves from being run off the road by the coming "tubes," they must press the automobile into the public service.

It is surprising how quickly doctors have taken to the motor-car. One medical man in a hilly district of the North of England, who recently purchased a 4½ h.p. Renault Spider from the Roadway Autocar Company, Limited, writes that the vehicle "takes the highest hills like a bird. We can get thirty miles per hour out of her easily. She is doing my practice daily, my horses being all out to grass and for sale."

MR. D. M. WEIGEL, managing director of the British Automobile Commercial Syndicate, has just returned from Paris, where he personally inspected the despatch of one 40 h.p., six 12 h.p., one 8 h.p., three 5 h.p., and two 7 h.p. Panhard and Levassor cars. It is very doubtful if such a large number of Panhard vehicles have been sent to this country previously in one consignment. Messrs. Panhard and Levassor admit that they have never yet delivered so many cars in one order.

MESSRS. J. GREEN AND CO., of High Road, Loughton, Essex, inform us that they have become so busy with motor-repair work that they are about to lay down extra machinery.

ONE of the most vehement journalistic opponents of the automobile in the United States is the *New York World*, and yet it employs twenty motor-vehicles in its delivery department, and is adding others to the number.

MESSRS. FRISWELL, LIMITED, have opened a new branch in connection with their business at 48, Holborn Viaduct, E.C., they now undertaking the work of repainting and upholstering motor-cars.

AT the last meeting of the Bath Rural District Council a resolution was reported from Long Ashton District Council, asking that Council to adopt a recommendation to the Local Government Board to limit the speed of motor-cars in rural districts to that allowed in urban districts. The opinion was expressed that such a regulation would be unreasonable, and the clerk was asked to obtain particulars as to the speed permitted in urban districts.

The accompanying illustration shows Mr. F. W. Longmore, of Walsall, on his Speed King quadricycle, the front seat of which was made wide enough to carry two persons. Mr. Longmore,



who is an enthusiastic motorist, has nothing but praise for his machine, on which he has covered a distance of 1,500 miles in the past two months.

REFERRING to the "Auto Sparker," a full description of which appeared in our last issue, we learn that the Motor Manufacturing Company, Limited, have bought the British and Colonial rights in the device, and intend shortly fitting it to all their vehicles. They inform us that they have thoroughly tested the little dynamo and find it works excellently. There is no doubt that it will be greatly sought after by buyers and owners of motor-cars as soon as they learn of its many advantages as compared with battery and accumulator ignition.

A HORSE attached to a brougham, in which were seated Mr. A. Robinson, of Bell Castle, Kemerton, and a friend, took fright on meeting a motor-car at Bredon one day last week. The animal turned round, and at the same time the coachman was thrown from the box. The horse then galloped off at full speed in the direction of Tewkesbury, where a girl with a street organ, seeing the horse approach without a driver, ran to its head, and held it until some men came to her assistance. The coachman was conveyed to Tewkesbury on the motor-car, and taken to a surgery, where his injuries were attended to.

MR. W. LAWLEY, of Swansea, recently drove Councillor P. D. Evans (the ex-Mayor) and a party along the beach road to Aberavon, a village never before visited by a motor-car. Local enthusiasm ran high, and far-seeing people predict a regular service between the two places.

THE forthcoming speed contest on the beach at Deauville, France, promises to be an exciting meeting. So far thirty-one entries have been received, Mr. S. F. Edge having entered two cars, a 16 h.p. Napier and the well-known 50 h.p. vehicle. M. Tart has entered a new 26 h.p. Clement car said to weigh 13cwt.

WE looked in at the dépôt of the Motor Mart in Euston Road, N.W., the other day, and learnt that there is quite a brisk demand just now for second-hand cars, Panhards, Daimlers, and De Dion voiturettes being in principal request. Steam cars also are in good demand, and any sent to the Motor Mart for sale do not remain there very long.

AT Newlands Lodge, near Belford, Berwick, on Saturday last, while Mr. Swinton, a London engineer and a guest of Sir Andrew Noble at Chillingham Castle, was riding a motor-bicycle he approached a young horse. As the animal refused to pass the motor he turned it into the hedge. William Tarbet, aged twenty-seven, who was riding the horse, dismounted to lead it past the machine, when the animal became restive, and, rearing, kicked Tarbet over the heart, causing instant death.

THE Midland Motor Agency, of Ladywood Road, Birmingham, is extending its useful operations. A large assortment of motor-cars, new and second-hand, are always in stock. The Agency's large premises and modern plant offer every facility for speedy repairs. Every convenience is offered for cleaning, lubricating, charging, and storing cars; competent drivers are also available. Cars for sale or exchange may be left at the Agency or placed upon its register.

AT the opening of the new rifle range at Conway, the other day, Lady Dundonald and Lord Cochrane were driven from the marquee, after his lordship had fired the first shot and been presented with the rifle used, by Mr. Wm. Johnson, of Waver-tree, in a motor-car to and from the butts, where the working of the revolving targets was explained to her ladyship, and the provisions made for the safety of the markers pointed out. The car used was a Dechamps victoriette, and the ground was considered too rough and bumpy to take a carriage over. On the return to the roadway her ladyship expressed herself as being very pleased with the ease with which the vehicle travelled.

ONE of the latest types of motor-cycle is the Mitchell, an American machine which is being introduced into this country by Messrs. Davis, Allen, and Co., of Singer Street, London, E.C. The frames are built especially for motor-bicycle purposes on the

lines of the regular bicycle frame. Besides the extra heavy material used, all points liable to strains or breaks are reinforced, so that the frame is sufficiently strong to withstand the additional weight and high speed. The motor is of special design, and develops $1\frac{3}{4}$ h.p. at a speed of 1,800 revolutions per minute. It is carried over the lower tube of the frame, and drives the rear wheel by means of a strap working on pulleys. The machine can, it is claimed, attain a speed of thirty-five miles per hour.

THE London Autocar Company, of Gray's Inn Road, W.C., appear to be laying themselves out on a large scale to cater for the demand for motor-bicycles which has so suddenly sprung up, for they have no less than three types of machines on hand. The first of these is the Moto-Sacoché, of which an illustrated description was given in a recent issue. Next we have a Minerva pattern motor-bicycle, and then we have the "Universal." In the latter machine a somewhat new arrangement is adopted. As we hope to give a full description in an early issue we need only now mention that the engine, which is of $1\frac{1}{2}$ h.p., is carried in front of the main down tube of the frame, transmitting its power

by a crossed strap to a small pulley carried on a special support on the rear frame. Combined with the latter pulley is a small pinion which gears with a larger pinion fastened rigidly on the hub of the rear wheel. Although the large pinion is additionally attached to the spokes of the rear wheel, the fact that the power is transmitted through the hub as well as the spokes relieves the latter of considerable strain.

MR. A. DUNHILL, of 145, Euston Road, London, N.W., who has for some time been making

a speciality of motor clothing, has recently added a number of new lines in this department. Prominent among these are light dust coats made of holland. These are made for both ladies' and gentlemen's use, and, being loosely fitting, allow the air to circulate freely. The collars are of a special shape, covering, when turned up, almost the whole of the back of the head, and yet not projecting uncomfortably at the front. The ladies' dust coats are made in two styles, one having sleeves and the other having a cape in place of the sleeves. Another new thing we were shown was a special driving apron made of leather and cloth. The feature of this is the insertion of a V piece in the centre, which allows plenty of room for movement of the legs while keeping them covered. Mr. Dunhill is devoting attention as much to ladies' requirements as gentlemen's in the way of leather clothing; a new production being a cloth-lined leather skirt. In goggles a wide range is offered, including a new pattern in which large glasses are made use of, these being so arranged as to allow the user good side views as well as straight ahead.

THE scheme for running one or two public service motor-cars in the Tring district is at present in abeyance.



A TURRELL $4\frac{1}{2}$ H.P. CAR ASCENDING A GRADIENT OF 1 IN 4 FROM STANDING START.

THE BIG EVENT OF 1901.

BELOW we give a complete list of the entries that have so far been received for the reliability trials at Glasgow, which commence on Monday, September 2nd.

SECTION I.

Motor-vehicles entered by their Manufacturers or by the authorised Agents of Manufacturers.

Class.	Official Number.	General Description.	Manufacturer or Agent.	Number of Passengers, including Driver or load.	Brake Horse Power.	Weight unladen.
A	1	M.M.C. 5 h.p. Voiturette.	Motor Manufacturing Co., Ltd.	4	5	cwt. 8
C	2	M.M.C. 7 h.p. 2-cylindere Light Carriage.	Motor Manufacturing Co., Ltd.	4	7	16
C	3	M.M.C. 6-seated Car.	Motor Manufacturing Co., Ltd.	6	7	18
F	4	M.M.C. 6 h.p. Van	Motor Manufacturing Co., Ltd.	1 ton	7	18½
B	5	Daimler 6 h.p. Light Car.	Daimler Motor Co., Ltd.	4	6½	10½
B	6	Daimler 6 h.p. Light Car.	Daimler Motor Co., Ltd.	4	6½	10½
D	7	18 h.p. Daimler ...	Daimler Motor Co., Ltd.	4	18	30
	8		Wolseley Tool and Motor Car Co., Ltd.			
	9		Wolseley Tool and Motor Car Co., Ltd.			
	10		Wolseley Tool and Motor Car Co., Ltd.			
B	11	6 h.p. Mors ...	Roadway Autocar Co., Ltd.	4	6	11
A	12	4½ h.p. Renault ...	Roadway Autocar Co., Ltd.	2	4½	7
D	13	10 h.p. Mors ...	Roadway Autocar Co., Ltd.	4	10	19
D	14		George F. Milnes and Co., Ltd.	4	16	23
D	15		George F. Milnes and Co., Ltd.	4	12	21
A	16	7 h.p. New Orleans	New Orleans Motor Co., Ltd.	4	7	10
B	17	6 h.p. Bardon ...	Auto-Carriage Co., Ltd.	2	6	13
C	18	10 h.p. Bardon ...	Auto-Carriage Co., Ltd.	4	10	20
	19		Locomobile Co. of America.			
	20		Locomobile Co. of America.			
A	21	5 h.p. Humber ...	Humber, Ltd.	2	5	11
B	22	8 h.p. Humber ...	Humber, Ltd.	4	8	13
D	23	10 h.p. Napier ...	Motor Power Co., Ltd.	4	10½	21
A	24	5 h.p. Clarkson and Capel Light Steam Car	Clarkson and Capel Steam Car Syndicate, Ltd.	2	5	8
D	25	Wilson and Pilcher Car	Wilson and Pilcher, Ltd.	4	5	18
C	26	7 h.p. Light Panhard	Panhard and Le-vassor	4	9	13½
A	27	5 h.p. Décauville ...	Motor Car Co., Ltd.	2	6	7½
A	28	Argyll Voiturette...	Hozier Engineering Co., Ltd.	4	5	8½
A	29	5 h.p. Parr Car ...	Parr and Co., Ltd.	4	5	16½
A	30	4½ h.p. De Dion-Bouton Voiturette	De Dion Bouton, Ltd.	3	4½	800 lbs
D	31	Lanchester Car ...	Lanchester Engine Co., Ltd.	4	10	17 cwt.
D	32	14 h.p. "Teras" (Gobron-Brillié)	W. T. and S. E. Botwood	6	14	17

SECTION I.—continued.

Class.	Official Number.	General Description.	Manufacturer or Agent.	Number of Passengers, including Driver or load.	Brake Horse Power.	Weight unladen.
A	33	Century Tandem ...	Century Engineering and Motor Co., Ltd.	2	5	cwt. 4
A	34	Progress Car ...	Progress Cycle Co., Ltd.	3	5	8
	35		Motor-Car Syndicate, Ltd.			
	36		Motor-Car Syndicate, Ltd.			
	37		Stirling's Motor-Carriages, Ltd.			
	38		Stirling's Motor-Carriages, Ltd.			
B	39	Hallamshire Touring Car.	Durham, Churchill and Co.	6	6	13
G	40	British and Foreign Electrical Car	British and Foreign Electrical Vehicle Co., Ltd.	4	6	
B	41		Enfield Cycle Co., Ltd.	4	6	9

SECTION II.

Privately owned vehicles entered by Members of the Automobile Club.

Official Number.	General Description.	Name of Owner.	Seating capacity of Vehicles.	Brake Horse Power.	Weight unladen.
A 1	16 h.p. Napier ...	Mr. J. Holder ...	4	16	cwt. 30
A 2	Serpolllet Steam Car...	Mr. J. Holder ...	3	5	13
A 3	16 h.p. Panhard ...	Hon. C. S. Rolls ...	3	20	19
A 4	10 h.p. Napier ...	Mr. C. Cordingley ...	4	10	
A 5	*Daimler Wagonette ...	Mr. Jas. Bioms ...	6	6	19
A 6	*Albion Car ...	Mr. Walter Crebor	4	7½	18
A 7	12 h.p. Daimler ...	Mr. J. D. Siddeley	4	12	
A 8	*7 h.p. Light Panhard	Mr. Harvey du Cros, junior.	4	9	13½
A 9	12 h.p. Daimler ...	Mr. E. Manville ...	4	13	27
A 10	†	Mr. R. A. Whytlaw, junior.	4	7½	19½
A 11	17 h.p. New Orleans ...	Mr. Wm. Exe ...	4	7	10

*This vehicle is being run with a view to obtaining an official certificate from the Judges' Committee.

†This vehicle is not being run with a view to obtain an official certificate, and the Judges' Committee have no knowledge as to what repairs or renewals (if any) are effected, or changes made in the vehicle between the daily runs, as it remains in the hands of the owner and not in the custody of the Judges' Committee.

The entries in Section III.—parts of motor-vehicles—are given on another page.

FURIOUS DRIVING CASES.

At Hastings, Edward Rogers was summoned for furiously driving a motor-car. P.S. Taylor said that at 4.55 p.m. on the 4th inst. he saw defendant driving a motor-car in London Road, St. Leonards. Defendant was driving at fourteen or sixteen miles an hour. When told he would be reported, defendant said: "My brake was on fire and I was afraid to use it." Frederick Warren gave corroborative evidence. Defendant said his machine was perfectly under control. Fined 10s. and costs.

At Epsom, Harry Green was summoned for driving a motor-tricycle at a furious rate at Epsom Road, Ashted, on July 25th. Police-constable Bourne stated that at 8.45 p.m. on the date named defendant passed him

on a motor-tricycle riding at the rate of about eighteen or twenty miles an hour. About forty yards further on he met with an accident, which witness attributed to his fast riding. Defendant at first gave the name of Nelson, but afterwards gave his proper name and address. Mr. Schultess Young, barrister, who appeared for the defence, called witnesses to show that before the constable saw defendant his machine ran into a hole six inches deep, which threw the whole mechanism out of order, and he entirely lost control of it. Before he could get it under control again he passed over another hole which caused the accident. The learned barrister contended that as the furious driving was not wilful but accidental, defendant was not liable. Defendant was fined £1 and costs.

At the Shrewsbury Borough Police Court, Carl Lawton, of Mossley, near Manchester, was summoned for unlawfully driving a motor-car furiously, so as to endanger the life or limb of any passenger on the highway at Mardol, Shrewsbury, on July 23rd. Defendant did not appear. Police-constable Embrey stated that about 8.40 on the evening of July 23rd he saw the defendant driving a motor-car at a very fast rate. Witness considered that the car was travelling about fourteen miles an hour, and defendant was also steering very badly, the car running from one side of the street to the other. Witness held up his hands and shouted to the defendant to stop, but he took no notice whatever. There were two other young men on the car, and witness followed it down to the Hill's Arms, where the car was stopped for the occupants to obtain refreshments. Defendant gave his name and address, and said that he had not seen witness at all. Edwin Gwilliam, general dealer, Mardol, and Joseph Davies Birch, hairdresser, gave corroborative evidence. The Bench imposed a penalty of £2 and costs.

At Boston, Robert Herbigde, of Nottingham, was charged with having driven a motor-car at a greater speed than fourteen miles an hour between Skirbeck and Wrangle, on August 3rd. Mr. Gane appeared for the defendant, and stated that Mr. Herbigde was in Belfast, and had only just received the summons. He asked that the case might be adjourned to allow of his attendance. The chairman adjourned the case for a week.

At Portsmouth, Benjamin Joseph Lamb, of Southsea, was summoned for furiously riding a motor-car on the Clarence Parade on the evening of the 3rd inst. Police-constables Pratt and Sturgess deposed that defendant drove from Florence Road to the Corinthian Yacht Club at a speed of fourteen miles an hour. Defendant said the motor-car could not possibly exceed twelve miles an hour, and he was not driving at full speed. The Bench imposed a fine of 20s., including costs.

At Lyndhurst, Ernest Powell King, J.P., of Wainsford, Lyndington, was summoned for driving a light locomotive on the highway in Gosport Lane, Lyndington, at a greater speed than fourteen miles per hour, to wit, twenty-two miles, and pleaded not guilty. Police-constable Osgood, stationed at Lyndhurst, deposed that on July 17th, about 7.25 p.m., he was on duty in Gosport Lane, Lyndhurst, and saw the defendant driving his motor-car towards Brockenhurst at a high speed. He timed him between certain places in the road, which he covered in 31 seconds. He afterwards measured the distance, which was 341 yards, and it worked out at a speed of just over twenty-two miles per hour. Further cross-examined, witness said he timed with the second hand on his watch, and he measured the distance with a chain. He could see the whole of the 341 yards without interruption. The car had passed him before he took out his watch. It had got about thirty yards before he did so. John Woods, a grocer's assistant, corroborated. The defendant, in defence, urged that the charge of travelling at the rate of twenty-two miles could not be substantiated, and that he had no case to answer. The Bench considered he had, and defendant then commented on the evidence as being of a vague character, and not sufficient to convict. Thomas Strickland, a carpenter, of Wainsford Common, was called for the defence. He said he was with the defendant in the car, and he believed the constable was under an erroneous impression with regard to the speed. They were not going more than eleven or twelve miles per hour when the constable saw them. The court was then cleared, and on the readmission of the public the chairman said the Bench were of opinion defendant was guilty of the offence with which he was charged, and he would be fined £5 and the costs, 12s., which he paid. Mr. King said he might appeal after consulting his solicitor.

A NON-STOPPING CASE.

At Blackpool County Court, Joseph Wm. Nicholson, cab proprietor, of Blackpool, claimed £14 8s. 2d. from Edward Ireland, photographer, of Manchester, for damages sustained through the negligence and furious driving of the defendant's motor-car near Cleveleys, on June 9th last. Mr. Callis, for the plaintiff, said that on June 9th plaintiff was engaged by Mr. Phillips, of Warbreck Road, to take his family for a drive. About 2.30 in the afternoon the party left in a one-horse landau and a four-wheeled dog-cart. They went through Bispham on to Cleveleys. The plaintiff was in front with the landau, and the dog-cart was forty or fifty yards behind. They were going at the rate of about six miles an hour in the direction of Rossall College. There was a bend in the road, then a long level part leading to Rossall College. When the plaintiff got about forty or fifty yards this side the bend he saw up the road, a considerable distance, a motor-car coming along at a furious rate. He put up his hand, but the car did not stop, and he drew the landau right up to the hedgeside. As it came on the horse attached to the landau jumped the hedge with the conveyance, while the dog-cart behind drew right across the road, which brought the motor-car to a stand. Mr. Callis pointed out that the defendant had com-

mitted a breach of the regulations under the Act, which provided that a motor-car driver was bound to stop if a man put his hand up. Joseph William Nicholson, after corroborating his solicitor's statement, said that when he had freed his horse he went back to the motor-car, and found that the occupants were Mr. Ireland and his son, Mr. McKenzie, and Mr. Hanson, electrical engineer. The party were taken to Cleveleys police station, where the names were given. Mr. Newman, for the defendant, called several witnesses, who deposed that the motor-car was travelling at a moderate rate of speed, and that it was still further slowed down on approaching the landau. His Honour said that he had to settle whether the damage which had undoubtedly come to the plaintiff was caused by the negligence of the defendant, or his son, who was driving this motor-car. Dealing with the allegations as to speed and the noise of the motor, he said that in many cases motors made a noise quite out of proportion to the pace they were going at. He believed this car was travelling ten or twelve or fourteen miles an hour. The case for the plaintiff had been somewhat spoiled by exaggeration. He had to read between the evidence what he believed to be the real facts of the case. It rested a great deal on the evidence of the driver of the car. When he saw the driver of a restive horse holding up his hand he would be bound to pull up his car at once. What did he do? He believed it to be a fact that he came round the bend and went on for some time at slowing-up rate, then he brought the thing to a standstill within ten yards. He gave a verdict for the plaintiff for the amount claimed.

REFUSING TO STOP.

DR. LEVI FARNDON, of Maidenhead, appeared in answer to a summons taken out by a fly proprietor named Joseph Southwell, for not having stopped his motor-car whilst he was passing with his horse and vehicle in Queen Street, on July 21st. The complainant, who resides at Brighton, said that he was a fly proprietor, and on the day in question he was driving a brown mare in a landau down Queen Street. Mr. Herbert Smith was in the vehicle. When near Mr. Truscott's he saw the defendant coming up Queen Street in his motor-car. He put up his whip in his hand as a signal for defendant to stop; he did not do so, but came on past them. As a result of this his horse made a plunge and swerved on to the curb. It was a restless animal, which was the reason that made him give the signal for defendant to stop. He thought that the defendant must have seen him give the signal. When the horse swerved they had a narrow escape of being smashed up. As far as he could judge, he should say the defendant was going eight or nine miles an hour. After hearing further evidence, the Mayor said that the magistrates had decided that the case had been proved, and they imposed a fine of 10s., with 13s. 6d. costs.

AN APPEAL CASE.

At Forfar Sheriff Court last week Sheriff-Principal Johnston heard an appeal by Mr. Alexander Ross French, Forfar, against the judgment of Sheriff Lee in the action at the instance of Mr. James McFarlane, cycle and motor-car dealer, Perth, against him, concluding for £135 as the price of a motor-car which the alleged defender bought from him. On the case being called there was no answer by the defender, and the Sheriff accordingly dismissed the appeal and adhered to the Sheriff-Substitute's decision, with additional expenses.

NO LIGHT.

At Kingston, F. Creese, of Fulham, was summoned for riding a motor-tricycle on the Portsmouth Road, Long Ditton, without exhibiting a light, at 12.25 o'clock on the morning of August 3rd. Police-constable Saunders proved the offence, stating that when he pulled defendant up he stopped and lit his lamp, which had gone out. Defendant did not appear, and was fined 15s. Before the court rose defendant put in an appearance, and the fine was reduced to 10s. Defendant: I have got no money. The Chairman: Well, you must go to prison. Defendant: It isn't fair. I had a light, but it had gone out. I shall never stop again when anyone asks me. The Chairman: A distress warrant will be issued, and if you don't pay you will go to prison.

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THE Motor-Car Journal.

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COMMENTS.



LAST week we referred to the ardour with which His Majesty the King was indulging in automobilism at Homburg, and recorded some notable journeys made by him. Since then other trips have been taken, and on Friday after going by train to Cassel he returned to Frankfort by the same means. There he dined, continuing his homeward journey to Ritters Park Hotel, Homburg, in his automobile. On Sunday a motor trip was made to Friedrichshof; on Monday Nauheim was visited, while on Tuesday His Majesty paid a visit *en automobile* to the Grand Duke and Duchess of Hesse at Wolfsgarten, near Darmstadt. By the courtesy of the *Morning Leader* we are able to reproduce two snapshots, one of the King's Daimler car awaiting its Royal owner at the Ritters Park Hotel, Homburg, and the other shewing the car travelling along one of the main streets of the town with the King on board.

Our New Car.

LAST Saturday was the first day we had an opportunity of testing our new 9 h.p. Napier car, and so gladly took advantage of the occasion for a run through Mid-Sussex to Brighton. On the following day we journeyed *via* Arundel and Box Hill back to London, the car travelling splendidly the whole while, no stops being made except for luncheon and tea. At Brighton several motorists were met; while on the way to Shoreham, a Mabley car was observed travelling quickly, with three passengers up. At Arundel a 6 h.p. Panhard was seen, and about two o'clock Mr. Gretton drove into the yard of the Norfolk Hotel on an M.M.C. voiturette with four up. The little car was travelling strong. At Burford Bridge Hotel the Rev. Mr. Wharton was seen, he having driven down the previous evening on his Canello-Durkopp. The roads were in splendid condition and there was very little dust to interfere with our comfort. The new car having behaved so well on what was practically an initial run, it was with pleasant anticipations that we set out from town early on Wednesday for the North. Notwithstanding a strong cold headwind the car safely landed its four passengers and a quantity of luggage at York the same evening, the net running time working out at only eleven and a-half hours.

The Yorkshire Automobile Club.

THE tenth run of the Yorkshire Automobile Club was held on Saturday last, the destination being Bolton Abbey. The weather was splendid and the roads good, so that a very enjoyable time was passed in admiring the beauties of the country surrounding Ilkley and Bolton. The following members took part:—Mr. T. E. King (vice-president), on a Century Tandem, and a friend on a Locomobile; Mr. Bishop, on an Enfield motor-tricycle; Mr. Hey, Bradford, on tricycle; Mr. and Mrs. Burrows,

Leeds, on a Star car; Mr. F. J. Borland and Mr. Wood on an M.M.C. tricycle and trailer; and Messrs. A. W. and E. Dougill on a Lawson motor wheel.

More Police Tactics.

At the North Holland (Boston) Police-court last week, Mr. Robert Harbidge, of Nottingham, was summoned for furiously driving a motor-car on the highway between Skirbeck and Wrangle on August 3rd. Mr. Welles Lucas, of Nottingham, defended. P.C. Cook said he was on the high road in the parish of Butterwick on Saturday afternoon, August 3rd, on the lookout for motor-cars. Defendant drove past the fourth milestone from Boston at 6.43. Witness jumped on a bicycle and followed him, and saw him pass the fifth milestone at 6.46, the rate being twenty miles an hour. Sergeant Drinkall, who was stationed at the fifth milestone, said the defendant was only driving at the rate of twelve to fourteen miles an hour when he passed him, having slowed down to turn a corner and on account of the traffic on the road, but witness heard him travelling at an excessive speed before he saw him. He was of opinion that a motor made the more noise the faster it went. P.C. Eastgate, who was stationed a mile-and-a-half lower down the road, said defendant passed him at 6.58. This was eleven minutes after he passed Sergeant Drinkall, and Mr. Lucas pointed out that one-and-a-half mile in eleven minutes could not be considered excessive. Sergeant Drinkall estimated the speed at anything from twenty to thirty miles an hour, and P.C. Eastgate put it at twenty-six miles. The magistrates stopped the case. They had no doubt that the speed was excessive, but the evidence was very unsatisfactory, and the case was dismissed.

An Important Case.

THE above case is of greater interest to the users of motor-vehicles, and indirectly to the general public, than might be supposed. The defence of Mr. Harbidge was undertaken by the Nottingham and District Automobile Club. The failure of the prosecution was, so Mr. A. R. Atkey, hon. sec. of the Club, informs us, not due to any lack of witnesses—there being half a dozen stalwart constables produced—nor to any shortage of evidence, there being a surfeit thereof. It was, however, another instance of “too many cooks,” for in the hands of the Club's solicitor, Mr. Welles Lucas, “the force” got very mixed in their statements, and, finally, *reductio ad absurdum*, caused the Bench to stop the case without calling for any witnesses for the defence. The fact remains, however, that had the police proved to the satisfaction of the Bench that the defendant was exceeding twelve miles an hour, a conviction would undoubtedly have followed. Hitherto the law as to the limit of speed has, in the Nottingham district at any rate, been used only for defensive purposes, where drivers of motor-vehicles have in some way prejudiced the rights or endangered the safety of others. In the case under notice, however, not one of the witnesses for the prosecution even suggested the slightest danger to any third person. The road was absolutely clear, even of one of the sets

THE GENERAL AUTOMOBILE AGENCY, D. Farman, Man., Spare parts for 3 h.p., 12 h.p., 16 h.p. PANHARDS in STOCK, 100-104, Long Acre, W.C.

of "official timekeepers" who presumably thought that more accurate observations could be taken from the seclusion of a dry dyke.

The Numbering Question Again.

At the last meeting of the Keynsham Rural District Council, a communication was read from the Long Ashton Rural District Council asking the Council to support resolutions passed by them urging the Local Government Board to regulate the speed of motor-cars in rural districts to that driven in urban districts, and the necessity of having each car licensed and numbered, the mark being on the front and back in plain figures at least six inches long. The Chairman thought that perhaps it would be wise that each car should be numbered, because a policeman could step in front of a bicycle and stop it if it was going at too great a speed, but it would require a very bold man to step in front of a motor-car. The motion was adopted.



SNAPSHOT OF MR. W. JOHNSON DRIVING LADY DUNDONALD AND LORD COCHRANE ON A DECHAMP CAR.

Mails by Motor-Vans.

JUST as astonishing as the colossal figures of a year's Post Office work, recently published, is the statement that the department has so far failed to find the motor-car a workable adjunct to its vast operations. In the report for 1899 it was stated that experiments made during that year in the conveyance of mails by motor-vans had proved unsuccessful, and that no permanent motor services had been established. Since that time some further experiments have been made which, unfortunately, have also proved unsuccessful, but although it has not yet been possible to establish any motor mail service, there are hopes, in view of the recent development of motor locomotion in this country, that a vehicle capable of performing a regular and continuous service over an extended period may before long be secured. Such a confession savours of timidity and weakness difficult to understand in an organisation which last year handled with marvellous success 3,723,817,000 letters, cards, and packets. The speed and economy of the motor-car are proved by the many private firms which have adopted it as the sole means of collecting and delivering goods. A motor-van capable of running straight from St. Martin's to the provincial post office fifty or one hundred miles from town with a ton or so of mails will appeal to any thinking man as more expedient than the present system—two or three carts at each end and a train in the middle. Well for the Post Office and the public that steam had the start of it, else to this day might we see our foreign mails carried by the slow but sure sailing ship.

Useful Tips.

ONE of the big dailies which publishes on Saturdays some useful hints to cyclists has formed itself into a self-constituted commission to investigate the question of damage done to roads by motor-cars. Its local correspondents have been invited to furnish information on the subject and have unanimously reported that the motor-car does no harm to road surface. It hardly requires twenty-one reports from various centres, which fill half a column, to convince the most prejudiced foe to the motor-car of this. But what is of interest is that in some quarters cyclists are warned to beware of motor-cars, which are numerous. The exact danger to guard against is not stated. We can only surmise that it is the old evil of "hanging on" to the motor-car, an evil which we have constantly pointed out, that the correspondents refer to. But why not be a little more explicit? The too ambitious cyclist who dogs the tracks of a motor-car in his attempt to keep pace with it runs a very serious risk. Let the car slow up or stop suddenly and the cyclist must choose between two evils—charging the rear of the car or swerving wildly across the road. Had the important organ devoted a few lines to this real danger in place of a half column investigation of a purely imaginary evil it would have benefited all who use the road.

Southsea.

SOUTHSEA and Portsmouth have not forgotten the run of the Automobile Club last year, and many people there are looking forward to the next organised motor-car trip to those pleasant towns. "On Saturday," writes a contributor to the *Motor-Car Journal*, "I spent a few hours on Southsea Common and saw half a dozen cars, four motor-tricycles and a Werner motor-bicycle travelling along the front in good style. The motor-wagonette that plies between the South Pier and the Clarence Pier was doing good business. Messrs. Rose and Company and Messrs. Cox and Company, Ltd., both of which firms have establishments in the Castle Road, Southsea, seem to be pushing the motor-car business with energy and spirit, the former making a great feature of the Daimler and Benz cars, and the latter of the Motor Manufacturing Company's vehicles, the De Dion voitures and the Werner motor-bicycles."

Proposed Public Service in Scotland.

IN the course of an interview last week with Provost Mackie, Leith, it was stated that arrangements are being made by the Kingsburgh Motor Works, Ltd., at Granton, for the starting of a thorough service of motor-cars between Bernard Street, Leith, and St. Andrew Square, Edinburgh. The cars, it is intended, will carry twelve passengers at a charge of 1½d. per head, and the run will be accomplished, it is expected, in about a quarter of an hour. The Provost and some members of the Corporation had a run through Barnton last week in one of the cars, and reported themselves well pleased with the vehicle. It is the company's intention to apply at once to the magistrates for the necessary licence.

Getting Away from Town.

MOTORISTS desirous of going from London to country towns are finding great difficulty in getting safely from the Metropolis, for barricaded thoroughfares and over-vigilant police are doing their best, or their worst, to make difficult the way of the motorist. A glance at some of the main roads out of London will cause the provincial automobilist to feel some sympathy with his London brother. The antipathy to motor-cars evidenced on the great North Road is notorious. On the Bath road trams have to be encountered as far as Hounslow, and, the tram metals safely negotiated, the police have to be propitiated by a slow funeral pace for fear of exaggerated speeds being sworn to in police-courts. Uxbridge road presents the tram difficulty as far as Southall, and then "scaffold poles" are met with—adding to the terrors of the motorist. Eastward the main road to Chelmsford presents a vile and vicious surface till the extremities of the London

suburbs are reached and then local authorities and the police conspire to instil dread and fear in the heart of automobilists. Even in Epping Forest the police are as officious as elsewhere. Surrey, which should have been educated to a higher encouragement of the automobile, is as retrograde as other counties, and watchful and unnecessarily careful must the motorists be who go on the Ripley or Reigate roads, while even the well-worn Brighton road is, just now, up for trams at Croydon, and expert management of cars is there essential. In fact, looking around, the safest way of leaving London is by the Edgware Road to St. Albans—a hint which will be useful to drivers who have not got beyond the early stages of motoring. Police, trams, local authorities, and small boys all seem combined in an attempt to harass the passing motorist.

Small Boys.

WE have added small boys to the list because there seems an epidemic among them just now. The habit of throwing their caps under the wheels of the motor-car is fashionable among London gamins, and no reasonable explanation of the disease seems forthcoming. Many suggestions have been made,

two vehicles has, we understand, already been secured. It is also proposed to connect Guildford, Godalming, and the neighbouring villages with a motor service for passengers. From Worthing, too, we learn that Mr. Hollis, of the Nurseries in South Farm Lane, purposes having a motor-car early next year for the transport of fruit to London, and he is in communication with the makers on the subject at the present time. He considers the cost of sending fruit by rail is excessive. It costs more for fruit to be sent from Worthing to Covent Garden than it does from Guernsey to the same place.

The Tour of an Electric Car.

As mentioned in a recent issue, the "Powerful" electrical car of the British and Foreign Electrical Vehicle Company, Ltd., is being driven by road to Glasgow. London was left on Wednesday morning of last week, and Peterborough reached the same evening, where the batteries were re-charged at the Corporation station. The next afternoon the motorists set out for Grantham, and on Friday, Sheffield was reached. The party on the car, which consists of the managing director of the company (Mr. Theodore G. Chambers), Mr. Conrad Cooke, and Mr. Theodore



The Royal Car awaiting the King at Ritter's Park Hotel.



The King off for a Sign

THE KING AT HOMBERG.

and one given in the *Daily Chronicle* has the charm of novelty if little of the character of accuracy. "The caps are not sacrificed," says our contemporary, "from any fanatical motive of propitiating a modern Juggermout, but simply in order to gratify a new sensation on the part of their youthful owners; for it is no uncommon sight, after an automobile has gone by, to see a row of boys with their faces buried in their caps, inhaling the fumes of petrol with all the abandonment of the opium-eater. We wonder whether this strange pleasure is about to become the new craze of the youthful smoker, who has called so long for legislation—and has just got it, in the States."

Goods and Fruit Transport by Road.

A SCHEME is under consideration for the establishment of a motor service for West Surrey. The proposal is to institute a goods service between Guildford and London, and to run two steam wagons with a total capacity of ten tons, thus affording a daily service at, it is calculated, rates considerably lower than the railway charges. Sufficient goods traffic to employ

Jones, and one of the company's skilled drivers, Mr. Jead, were entertained at Ringwood Hall by Mr. T. Bayley, M.P. The journey on Saturday extended as far as Bradford, where a stay was made over the week end. On Monday a start was made for Lancaster. This proved to be a difficult day's journey, the roads being bad and the gradients severe. For some time the party were delayed by a heavy thunderstorm, but eventually Lancaster was safely reached. The last we heard of the car was on Tuesday, when on its way to Carlisle. The event is one of some interest, as this is the first electric car that has been on tour through England.

Extent of a Landlord's Liability.

A CURIOUS case referred to some weeks ago, in which the point at issue was the extent to which an inn proprietor may be considered liable to find accommodation, occupied the attention of Judge Martineau at Redhill last week, and, as the judge frankly admitted, puzzled him. As will be remembered, the Chequers Inn at Hookwood, near Horley, was the

first scene of an incident which has already claimed the attention of two courts, and may be taken to a third. On a wet evening or early morning of April last, Mr. R. Brown and a friend found themselves stranded in that inhospitable village with a broken-down motor-car. Naturally, the inn was approached in the hope of shelter; but mine host bade the belated travellers begone, as he had no accommodation. Refreshment was next demanded, and this was supplied. Once inside the inn the travellers renewed their request for shelter, offering to pass the remainder of the night in the coffee-room. Having done all which in his opinion the law demanded, mine host declined to have his dwelling-rooms converted into sleeping apartments, and urged the travellers to leave the house. Angry words were followed by a threat to turn the unwelcome visitors out, and ultimately they left, found a fly, and drove to Crawley. The action was brought before Judge Martineau by Mr. Brown, who sued the landlord of the Chequers Inn for £25 damages—the hire of the fly, and expenses resulting from illness caused by exposure. Again mine host protested that his bedrooms being full he had no accommodation within the meaning of the word, and was not legally bound to find any of a makeshift order. In finding for the defendant with costs, after much deliberation, his Honour concurred with that view of the case. Though this may be the legal view, it is neither humane nor consistent with the traditions of an English inn.

The War Office Motor-Vehicle Trials.

At the last meeting of the Aldershot Town Council a number of communications, accompanied by a long letter from the War Office, explaining the important trials in steam transport which are shortly to be made, and asking the Council to modify certain of their bye-laws to permit of the making of the trials over roads in the urban district, were considered. The chief concessions asked were the allowing of the engines to pass over bridges and the raising of the limit of speed permissible. The surveyor announced that he had considered the letter, and had prepared a report on it. He suggested four conditions upon which the permission could be granted. These were: (1) That the vehicles should be stopped on the approach of a man on horseback; (2) that in the populous districts the speed should not exceed that usually allowed; (3) that notification should be given that the canal bridge in Farnborough Road was unsafe for heavy traffic; (4) that the War Department should be held liable for any damage. A long discussion ensued, which was summed up by Mr. Friend, who felt there were three things which should be mentioned in the reply to the War Office: (1) They should ask for notice of the time of the trials; (2) there should be a suggestion as to the speed to be observed in passing through the town; (3) the fact that the canal bridge was unfit for heavy traffic should be pointed out. One or two of the Councillors were still unsatisfied, but the majority were in favour of the precautions suggested by Mr. Friend, and a resolution to that effect was passed.

The Irish Automobile Tour.

In the course of a letter to us Mr. R. J. Meccredy reports that the Irish Automobile tour has proved a very great success throughout, but it has been a disappointment that so few members of the English Club took part in it, elaborate preparations having been made for a large number. The fact that there was an interval of ten days between the end of the tour and the Glasgow trials is no doubt responsible for the absence of many Club members, it having been arranged originally that the one event should follow immediately on the heels of the other. A great many of the tourists returned from Connemara. There were seven cars, however, on the road at Enniskillen; four of these returned northward, so that only three took part in the last day's journey and completed the entire programme. These were Mr. Bucken's 7 h.p. M.M.C. car, Mr. Meccredy's 9 h.p. Daimler, and Mr. Wells' Werner motor-bicycle. All three did excellently throughout the tour, and gave exceedingly little

trouble. With regard to a report that the weather was unpropitious, Mr. Meccredy adds that this is entirely contrary to the facts. During the sixteen days' tour there were two completely wet days. One was an off day, when there was no official programme, and the other was the Saturday on which the tourists arrived in Connemara; otherwise the weather was splendid. Occasional showers at night completely laid the dust without wetting the road surface.

Motor-Cars and Horses.

SIR HENRY THOMPSON has started a useful discussion in the columns of the *Times*, and several correspondents have written to endorse his remarks, on the treatment of horses when meeting motor-cars. Like many other eminent men, Sir Henry has taken to motoring. He has not only been a passenger but he has been an observer, coming to the conclusion that the danger from shying horses is much more due to the action of the driver than to the animal itself. In nine cases out of ten the driver fears, not unnaturally, that his horse may shy, and begins to pull the reins tight and to lash him severely with the whip, to force him to meet the coming car, thereby making him nervous and excited. This is the worst possible preparation for the encounter. The horse ought, according to Sir Henry Thompson, on the other hand, to be gently checked in his speed, the whip should be untouched, and the near rein a little tightened so as to cover the eye with the off-side blinker, and prevent the animal from seeing the car as it approaches, at the same time addressing a word of friendly encouragement to the animal. It is a complete illustration of the truth of the old proverb, "You may often lead when you cannot drive."

Patience Wanted.

THIS is the view frequently emphasised in these columns, and the endorsement it receives from several correspondents leads us to hope that it may be generally accepted. If drivers of horses would have a little courage and exercise a little patience the education of the animals would proceed much more rapidly. If Sir Henry Thompson's advice was universally adopted the talk about numbering motor-cars and examining their drivers would soon flicker out.

Ladies and Motor-Cars.

SOME months ago a young lady motor-bicyclist made an effort to found a club for lady automobilists. Several papers were written on the subject; Lady Harberton lent her drawing-room for the purpose of a meeting; and then the enthusiasm of the pioneers evaporated. They will be glad to learn that a suggestion now going on among the members of the Reading Automobile Club may result in some concessions to the fair sex. It is suggested that "lady associates" should be a possibility, and that occasional "ladies' days" might be arranged, when the men would step aside and the ladies would control and organise the events. The interest of ladies in automobilism is one of its pleasing attractions to Society, and the idea thus cautiously mooted is likely to be better supported than the earlier campaign, which did not seem to have much sympathy from those fair automobilists who have enjoyed the pleasure of participating in the trials and runs of the Automobile Club.

THE Locomobile Co. of America have received a letter from a British officer at Middleburg, in the Transvaal, in which he states: "The first person I met on getting out of the station here yesterday was on a Locomobile, which is the property of Lieut. Walker, of the Royal Engineers. He uses it greatly and also drives the dynamo of the searchlight from the back wheel by propping up the car."

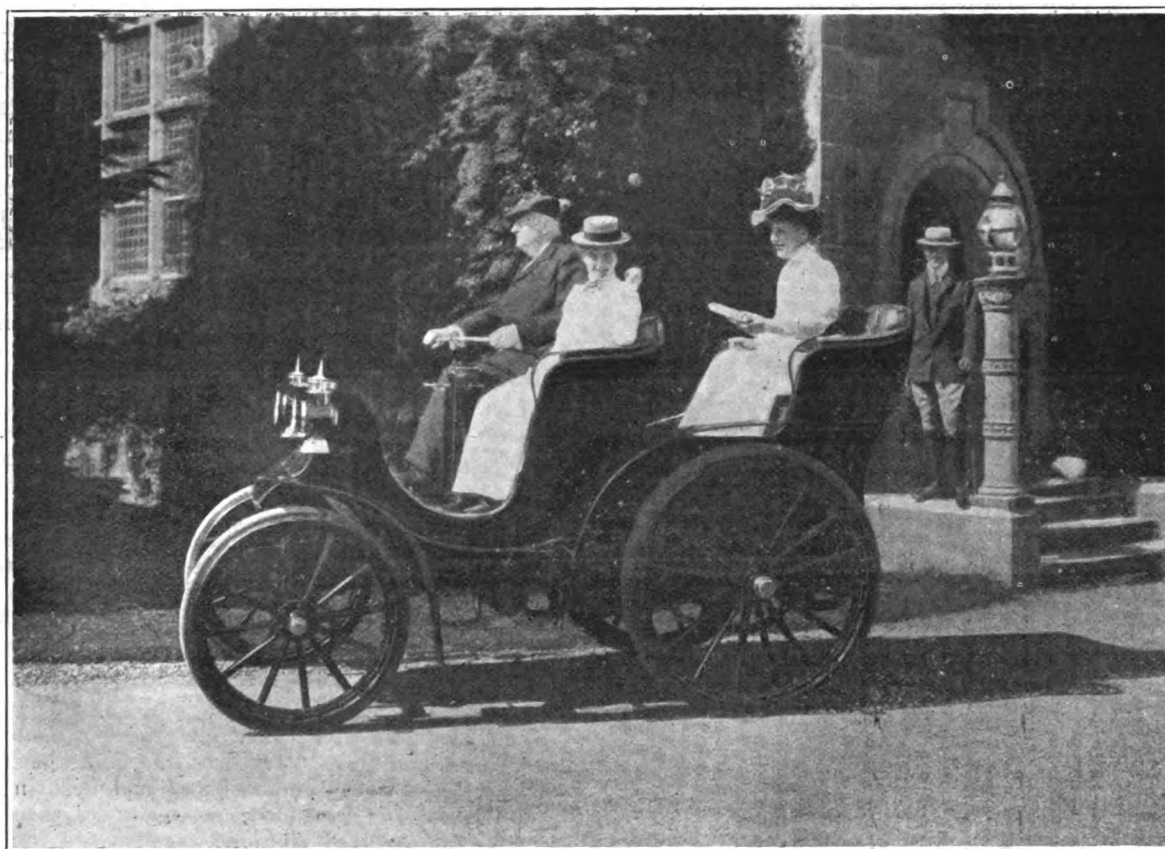
THE "GOOD GIRL."



THE Right Hon. Sir J. H. A. Macdonald, K.C.B., Lord Justice Clerk of Scotland, has kindly furnished us with the following account of the run of his new Delahaye car from Paris to Scotland:—

Having arranged with my friend Dr. Dawson Turner to pilot me homeward with my Delahaye on the journey from Paris to Scotland, we left the works on a beautiful afternoon, carrying one passenger, the Rev. Canon Woodward, who went to Paris with us that he might have a first experience of power traction. She rode gaily till we came to the terrible *pavé* beyond the Arc de Triomphe, which tested everything but too thoroughly in the new carriage, with the best results, as a plate of the band brake, being too hard and brittle, broke. Back to the works for half-an-hour, and then we started indeed. Leaving the barrier by

tide at 4 a.m. Right well did she respond, and carried us without a hitch to St. Pol for *déjeuner*. On passing through Amiens we gave the car a feed of fuel, and watered her well. At St. Pol much discussion with the locals regarding our route ensued, they insisting, with many friendly gesticulations, on a westerly line, while the printed directions for the Paris-Ostend race gave a more easterly route. It was a balancing of arguments. The doctor, with his great and justifiable faith in Secretary Johnson, who had kindly lent us his itinerary of the race, had leanings to the east, but some subtle instinct inclined me to the west. The canon was neutral. Returning to the inn for a moment, I met another gentleman, a palpable cyclist, judging by the cycle wheel that hung from his watch-chain. "To him the question I referred," as did the disputants over the chameleon's colour, and he turned out a decided westerian. This settled the question so far. On we sped, doing [splendid running, but still calling regularly on the canon for oil from time to time. The



THE RIGHT HON. SIR J. H. A. MACDONALD, K.C.B., LORD JUSTICE CLERK OF SCOTLAND, ON HIS NEW DELAHAYE CAR!

5.30 p.m., we reached Beauvais at 8 p.m., having done, including the double journey through Paris, about 62 miles in all. I need not say that, being a novice, I did not do any driving, but learned much by watching the doctor, who made her go when it was safe, but is a model of caution when any traffic or road turn is encountered. That the pace was good will be realised when I mention that we stopped four times on the road to oil and grease at every point, so as not to run any risk of the new bearings over-heating. Of this work we all took a share, the canon pouring in oil, as doubtless he is well accustomed to do to brethren who heat too readily, when friction arises from ruffled surfaces.

The good old Hotel d'Angleterre, the best compliment to the cheer of which is that there is very little of the country town inn of Angleterre about it, sent us off fresh and lively at 7.30 next morning to accomplish the long run to Dunkirk, where my lady was to embark for her first sea voyage. Again the doctor drove, for time was all-important, and the car was to be called upon to do her very best, as the steamer was to leave with the

result of this was that we had no serious heating, although the pace was up to all the car's capabilities, which are quite fast enough for your humble servant, and he is inclined to say fast enough for any being who has not a natural craving for a smash-up of the complicated machinery of man and beast—I mean machine. At last we came to the fork-roads, where a final decision must be taken—east or west. The doctor drew up. My lady panted, not with fatigue, but with eagerness. "Now which road are we to take?" said somebody. I indicated my intuitive feeling for west. The doctor, justly strong in faith in the canonical infallibility of Johnson, *Pontifex Automobilis*, showed an orthodox leaning to east. The canon, appealed to for an arbiter's award, naturally followed Gamaliel, and declined to decide, indicating that, in doubt, the safest course was to trust the driver. The driver, feeling the terrible responsibility in view of the fact that *pavé*—*pavé* of the worst—was ahead somewhere, and that if we got into it, good-bye to our steamer for a week, meditated a few moments in anxious silence. He

knew we trusted him, and probably was, for that reason, the more slow to cast the die. Fortunately, a native appeared on the scene, and so decidedly and cheerfully finger-posted us up the west of the fork that our steed no longer chafed at being kept standing still, but laid herself out *ventre a terre*, as our usually elegant French friends say, and we flew along merrily.

The cause of all the dubiety was soon apparent. The road on which we ran was excellent, but it was a narrow road, quite unsuitable and dangerous for racing purposes, and this was the cause why the Paris-Ostend route had been laid off in an easterly direction, which kept on a broader but not so good a highway. Only one other difficulty arose. When we came near Bergues Mr. Johnson's book directed that the tourist should keep to the right and go outside the ramparts. Again some doubt and uncertainty, for as we had found the best route for the last score of miles by deviating from the Johnson *vade mecum*, the question was, "Which way now?" Forming a firm opinion that there must be a road round the town, and that it would not be *pavé*, while we knew there was a long and bad *pavé* through it, I urged that we should go round. We did, and it proved to be right, although I confess that, on coming to the other side, I felt for a few minutes, as did the cavalier of old, who, insisting for his own route, led his party into a *quiel-opens*. At the side of a canal we came upon a stretch of road too bad for description. If every fifth stone had enjoyed a little earthquake to itself it could not have been worse. The sporting Marquis of Waterford trying to drive a four-in-hand over Giant's Causeway is the only parallel that suggests itself as sufficient. My heart sank. I expected my driver to turn a cold eye on me, and calmly—he is always calm—say, "You've done it now!" I was even afraid that the canon, when bumped beyond measure, might have his charity shaken out of him, and think a little evil. I felt certain he would not express it, and it made me sad to reflect that his feelings would get no relief. In such circumstances a bravado is best. I jumped off, walked with a bold firmness I did not feel to the door of a lock-keeper's cottage, and in steady accents asked a pleasant-looking girl, who opened it, if this was the proper road for Dunkirk. Oh, the joy of hearing that "Oui, Monsieur, tout droit"! Back and into the car with a triumphant bound and a strident "straight-on," and off we crawled, my firm belief being that the doctor and the canon, if they could have compared notes, would have pronounced me so ignorant of French that I must have misunderstood. On we floundered 200 yards, when suddenly the doctor cried, "Look at this," and, as if some good fairy had suddenly, with a wave of her wand, made every stone bigger than a matchbox sink out of sight, we were gaily careering along considerably over average S.E. suburban speed, with the spires of Dunkirk well in view, and daylight only beginning to fade. Despite a wrong turn on reaching the fortifications and a difficult turn back, requiring reverse gear, we rode into the town before eight o'clock. This was, I think, a splendid performance for a brand-new car. The distance run all told that day must have been nothing under 150 miles. The stoppages were numerous—at least eight, including *dejeuner*—not because anything was wrong, but because our prudent and skilled driver insisted on regular distance halts, and complete re-lubrication of all bearings, whether treated with oil or grease, and fresh supplies of cold water. It was time well spent, as we never had a seriously heated bearing during the whole 200 odd miles running.

We wandered about the docks of Dunkirk for fully three-quarters of an hour, being misdirected by the ignorant, who desired to appear knowing, and at last found the steamer, not a ship's-length from where we had passed her at the very beginning of our gyrations. Here we got a knock-down blow. The "Talisman" was lying outside another vessel, having been warped out to the dock gate, some busybody having told the captain that if we did not come by 6.30 we would not arrive that night. A mate with a seaman's gruff—though not meant to be gruff—tone told us we could not get on board now. Answer, "We must." Mate refers us to captain. Captain sent for. Captain Sutherland, kindly and willing if he can. At last

decision taken: ship's crane to put her on board as she is passing through dock entrance in the morning. I resolve to stay and see her safe on board. The doctor and the canon take farewell of me, and drive off to the station to go to Calais and catch the steamer.

I trust the doctor appreciates how I thank him for acting as first voyage pilot, and I hope the canon will have pleasant recollections of his first motor-car experience, and even find an apposite allusion or two for teaching illustration. He is precentor of his cathedral, and can testify to the happy harmonies of his first power-traction journey, and how sweetly the "Good Girl" hurried along. For that is her name, I said to my friends after her performance, and as I had so called her in my mind the name is hers as long as she holds together. The captain kindly gave me his bunk till three o'clock. Roused up in the grey of the morning, I found the "Good Girl" already in the slings beside the dock entrance, saw her carefully hoisted in, run under the hurricane deck and made fast. May all motorists find as careful a captain and auxiliaries! Then to bed in the house of Mr. Murray, the keeper of the Seamen's Institute, he and his kind wife doing all they could to make me comfortable. How the wind whistled through the chimneys! I thought of my two friends in the Dover packet, and felt no inclination to break the Tenth Commandment by coveting their berth.

On the third day after reaching Dunkirk Dr. Turner and I met at Leith. Found no serious damage done, although the stevedores, who would not allow the crew to put the car on shore, broke a mud-guard. *De minimis not curat autocaristicus*. Mrs. Turner joined us in Edinburgh, and we drove on, and arrived at Coll Earn, my summer quarters in Perthshire, safely—56½ miles, the "Good Girl" justifying her name up to the last as regards make and running powers. We did on the way from Edinburgh find the axis on which the exhaust levers lock to be cracked, and a local engineer found trouble in getting it out to replace it, as it was too hard in some parts. But this will not happen again, as we improved the form and tempering of the pin, so that, should it ever give way again, the removal will not be difficult.

If my "Good Girl" will only behave as well during the Glasgow week as she did on her first journey to an unknown land her guardian will be proud of her, and he will hope that others will admire her, for, like Rebekah of old, her person does not, he fondly thinks, belie the charms of her character.

THE Pall Mall Cycle and Motor Company, of 149, Ebury Street, London, S.W., have introduced a motor-bicycle on the lines of the Minerva. The firm inform us that they have introduced a number of improvements, and, believing that there is going to be a big demand for motor-bicycles, they intend to keep a full staff engaged on their manufacture during the winter months.

THE Board of Agriculture notify that the Ordnance Survey have completed the publication of the map of England and Wales on the scale of four miles to the inch. This is a general map of the country, and is likely to be useful to motorists and others who require a considerable area of country on one sheet. It shows all the principal roads, railways, rivers, towns, villages, large woods, and numerous altitudes. The map is published in twenty sheets, each measuring 22½ inches by 15 inches. Another edition of this map is being prepared, of counties or groups of counties, on thin paper.

ONE of the latest Midland cycle manufacturing firms to put a motor-bicycle on the market is the Quadrant Cycle Company, of Birmingham. The machine is known as the Quadrant Autocycle, and is driven by a small petrol motor carried below the bottom tube of the frame, the back wheel being driven by a band working on light pulleys. Both wheels are 28 inches in diameter. A powerful front rim brake is fitted, in addition to the Quadrant back-peddalling band brake, so that the control of the machine is absolute. The bicycle portion of the machine is specially built throughout, every part being made stronger as compared with the pedal-propelled bicycle to enable it to withstand the extra weight and speed.

THE BIG EVENT OF 1901.

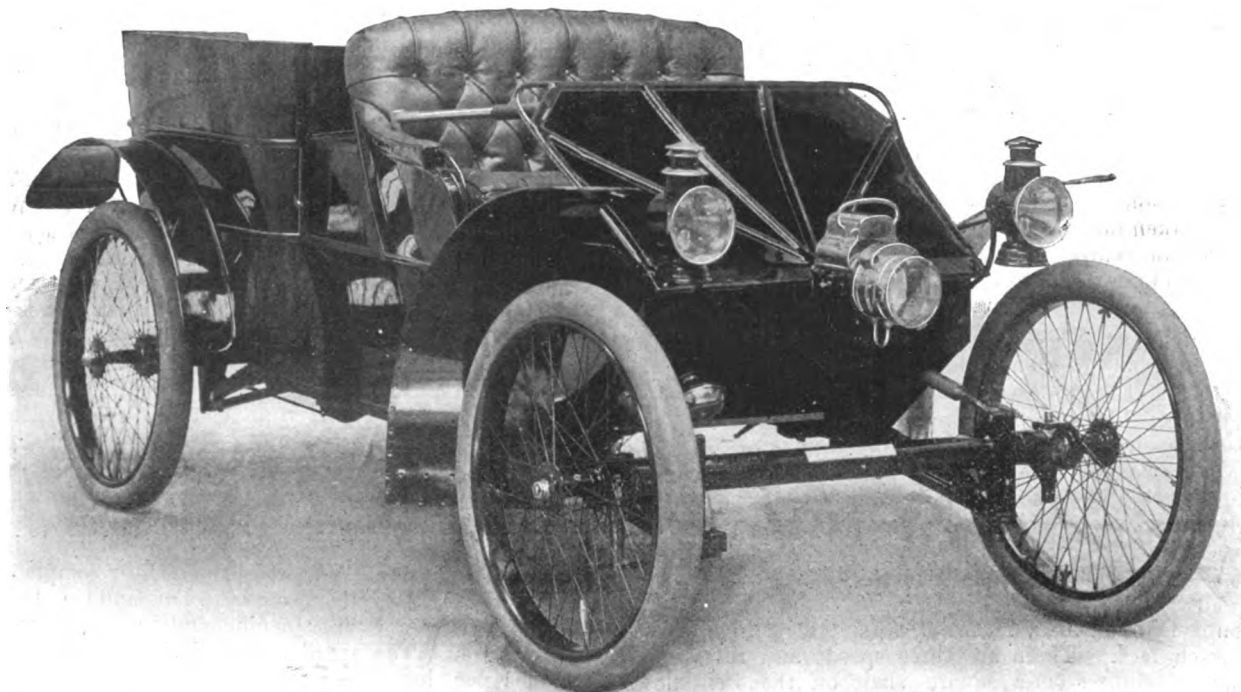
THE GLASGOW RELIABILITY TRIALS.

ALL eyes in the motor world in this country are now centred on Glasgow, where the 500 miles trial of reliability, organised by the A.G.C.B.I., with the co-operation of the Scottish Automobile Club, commence on Monday next. We have already published the programme and objects of the trial (see issue of July 20th last), but we may mention briefly that the cars will take radial journeys daily from Glasgow, returning to the starting point each evening, and that systematic arrangements have been made for the realisation of the Automobile Club's main object, which is to establish the reliability of the motor-car of to-day. Each car will carry an official observer, who will be provided with minute instructions, and will be authorised, moreover, to restrain the driver, if need be, from indulgence in excessive speed, under pain of disqualification. A definite limit, in fact, has been assigned as the absolute maximum, and though it is not altogether a crawl, it will be far removed from racing. If the time-sheets show in any instance that this maximum has been exceeded, the competing car will be ineligible for a prize, no matter how good its perform-

(parts of motor-vehicles) there are five entries. Four of these were detailed last week, so that we have only to mention that the fifth entry is a set of New York tires, which are fitted to an M.M.C. voiturette. All the competing cars were to be in Glasgow on Friday, the 30th inst. To-day (Saturday) the Judges' Committee will hold special tests to ascertain whether the trial vehicles are fitted with sufficient brake power, and specially whether the brakes are so constructed that they will prevent the vehicle from running backwards if stopped on a steep up-gradient.

A Club dinner of the members of the Automobile Club of Great Britain and Ireland and of the Scottish Automobile Club and friends introduced by them is to be held in the Windsor Hotel, Glasgow, to-night (Saturday), at 7 p.m., at which it is hoped that all who are to take part in the competitions will make an effort to be present and avail themselves of the opportunity of mutual introduction. The Right Honourable Sir J. H. A. Macdonald, K.C.B., Lord Justice Clerk of Scotland and President of the Scottish Automobile Club, will occupy the chair; a number of the vice-presidents, most of the honorary members of the S.A.C., and others will be present.

Quite a number of new cars will make their *debut* at the trials next week. We have not been able to obtain particulars



THE LANCHESTER 10 H.P. TONNEAU CAR.

ance in other respects. Any stoppages that may be made by any of the cars will be duly recorded, and subsequently analysed by the judges. There will also be three hill-climbing trials.

The total distance to be covered is about 530 miles. On Monday, September 2, the journey will be from Glasgow to Mount Vernon, Bathgate, Edinburgh, Lanark, and Glasgow, 116 miles. The other days are apportioned as follows:—Tuesday—Glasgow, Greenock, Ayr, Kilmarnock, Glasgow, 107½ miles. Wednesday—Glasgow, Lennoxton, Stirling, Callander, Aberfoyle, Glasgow, 96½ miles. Thursday—Glasgow, Stirling, Dunblane, Greenloaning, Kirkintilloch, Glasgow, 95½ miles. Friday—Glasgow, Dumbarton, Whistlefield, Arrochar, Tarbet, Ardlui, Crianlarich, Tarbet, Alexandria, Glasgow, 115½ miles. The hill-climbing tests will take place at Lennoxton, Greenloaning, and Whistlefield. The first-named hill rises 950ft. in four miles, 750ft., however, occurring in the first two and a half miles. Whistlefield Hill is very steep, rising over 300ft. inside a mile.

A full list of the forty-one cars in the manufacturers' section, and the eleven vehicles in the members' privately-owned section, entered for the trials, was given in our last issue. In Section 3

of all of these in time for the present issue, but append a description of several herewith:—

The illustration given above shows the 10 h.p. car entered by the Lanchester Engine Company of Birmingham. The engine, of this firm's well-known balanced type, gives an absolute freedom from vibration. It is of 10 h.p., and is air cooled by forced ventilation, no water being required. The governing of the motor speed is automatic, and is capable of instant control from the driver's seat, giving at will a varying motor speed of from 400 to 1,000 revolutions per minute. The ignition is effected by an electric current, generated by a magneto alternator of special design, dispensing with the need of batteries or accumulators. The sparking plugs are arranged to be instantaneously detachable, and can be removed, examined, and replaced in a few seconds. No wire connections are employed, the electric current being conveyed to the ignitors by a brass bar completely insulated at its point of support, so that all possibility of short currents and failure is avoided. The car is fitted with three change-speed gears, giving a liberal choice of speeds. No chains are used on the car, which has a worm

drive; this the company state they have found, after long tests, to be the most perfect and efficient method of transmission. Two powerful brakes are fitted; the gears and brake are actuated by two levers, which, when forward, drive ahead, and backward apply the brakes. The brake actuated by the low gear lever acts as a reversing gear if the application is continued after the car has come to rest. Tiller steering is fitted, the Lanchester Company believing that this method when once tried will be preferred to the wheel form of steering, which, however, they are prepared to fit if required. The petrol tank, which is provided with indicator gauge, has a capacity of ten gallons, permitting a run of over 250 miles without re-filling. Automatic lubrication is fitted throughout, there being a central tank of sufficient capacity for a 300-mile run. The oil is distributed to all parts of the motor by a system of tubes, and the supply automatically ceases when the engine is stopped. The car, which is fitted with a body of the popular *tonneau* type, has an extended wheel base and wide gauge, securing safety and comfort in running. The method of suspension is also a new departure by which, it is claimed, the speed may be maintained with perfect ease over the roughest roads.

It has been known for some time that the Enfield Cycle Company, Ltd., of Redditch, were at work on a new type of motor-car. We are now able to give an illustration of the "Royal Enfield" vehicle, which will be ready for delivery for the new year. The engine is of the two-cylinder type, water-cooled, and is built on the well-known "Ader" system, a description of which was given in our issue of May 11th last. The water



THE ROYAL ENFIELD CAR.

circulation is maintained by means of a pump driven by friction off the clutch face. There are three speeds and reverse, the change wheels sliding on a square shaft on the well-known *balladeur* system. Power is then conveyed to a differential gear shaft having at its extremities the usual chain pinions. To take up all shock in starting, the engine is fitted with a special spring drive, which is rather difficult to explain without illustrations, but we understand it is effective in reducing all shock. A very important detail in connection with the engine is a patent arrangement for throttling the gas supply at the moment the clutch is thrown out, to prevent the engine racing. This greatly facilitates changing the speed, and does not require any manipulation of the gas or ignition levers to effect changes quickly. It acts practically in the same way as a governor. The carburettor is also made under "Ader" patents. It is entirely automatic in its action, and is kept at a constant level. By this means it soaks a series of wicks held in brass cages through which the air is drawn. The air becomes saturated with vapour, and is passed to the engine by means of a mixing valve. The body of the car is a *tonneau*, but of course any pattern, such as the double phaeton or the spider car, can be fitted. Underneath the back seats are special compartments for tools, etc. The front seat contains the petrol reservoir, induction coil, and accumulators and there is also room for spare air tubes, etc. A special feature in the steering is the manner of fixing the front axle to the framework. The usual side springs in front are dispensed with, one spring only being fitted across. This spring

is fitted to the frame in the centre of the front cross bar, and attached to the axle are four tie rods, two on each side, which pass back and fasten on another swivel joint midway in the frame. The action of the front axle when passing over a rough road is to rise and fall entirely independent of the frame, which remains horizontal. The road wheels are fitted with artillery hubs and wooden spokes, and can also be fitted with tangent wire spokes and bicycle hubs if desired. The rear wheels are 36 in. and the front 28 in. in diameter. The front bonnet is entirely detachable. The lubrication of the change-speed, bearings, pump-bearings, differential gear, etc., is by means of grease lubricators fitted to the dashboard. Sight-feed oil-lubricators are also fitted to the dashboard, to lubricate the engine.

The Daimler Motor-Car Company, Limited, have three cars entered for the trials—two of the new pattern light cars and one 18 h.p. four-cylinder *tonneau*. The new Daimler light car is fitted with an improved *tonneau* body, constructed to carry four persons, including the driver. The engine is a standard 7 h.p. Daimler, fitted with both tube and electric ignition. The gear box is constructed almost entirely of aluminium, and is provided with three speeds and a reverse, giving eight, sixteen, and twenty-five miles an hour at a motor speed of 720 revolutions per minute, and eight miles per hour on the reverse. The gear wheels of the two lower speeds are made of steel and manganese bronze; those of the top speed being of steel. The gear wheels are extremely wide for a light car, and it is estimated that they will stand upwards of 20,000 miles of wear before it is necessary to have them renewed. From the gear box the power is transmitted through a longitudinal shaft, on the tail end of which is a bevel pinion gearing on a bevel wheel on the rear live axle. The usual form of differential gear is contained in an aluminium casing. On the forward end of the longitudinal shaft is a combined universal joint and brake-drum of special construction. The usual sprocket brakes are also fitted. The clutch between the engine and the variable speed gear is a single one of large diameter, and is constructed to avoid putting too sudden a strain on the shafts and gears, and yet will, it is claimed, never slip, except when required. The whole of the controlling, accelerator, and advance sparking levers are conveniently arranged under the steering wheel, within easy reach of the driver's hand. The water tank and coolers are arranged just in front of the motor and partly within the bonnet. The road wheels are of equal size, 32 in. in diameter, and are fitted with 90 mm. (3½ in.) pneumatic tires. Weldless steel tube of ample strength has been exclusively used in the construction of the frame. The weight of the car complete is 10½ cwt.

The car entered by Messrs. J. Parr and Co., Ltd., of Leicester, is driven by a 5 h.p. engine, and has accommodation for four passengers. The speed can be varied at will up to twenty-four miles per hour, a reverse motion being also fitted. When required to carry two passengers only the back seat may be detached and replaced with luggage carrier, or by removing four bolts the whole body can be removed and replaced with a light delivery van for business purposes. Two sets of powerful brakes are fitted, one set of band brakes operating on drums on the driving wheels by a foot lever, and the other, a powerful emergency brake, operating by a hand lever on a drum on the balance gear. The brakes can be applied when the car is moving either backwards or forwards.

In addition to their 5 h.p. and 10 h.p. vehicles, the Wolseley Tool and Motor-Car Company, Ltd., will have a 20 h.p. car in Glasgow during the trials.

The Progress Motor Co., Ltd., find it impossible to get their new car—which will be their 1902 pattern with motor in front—ready in time to take part in the trials. We shall give a full description with illustrations of the new vehicle in a few weeks.

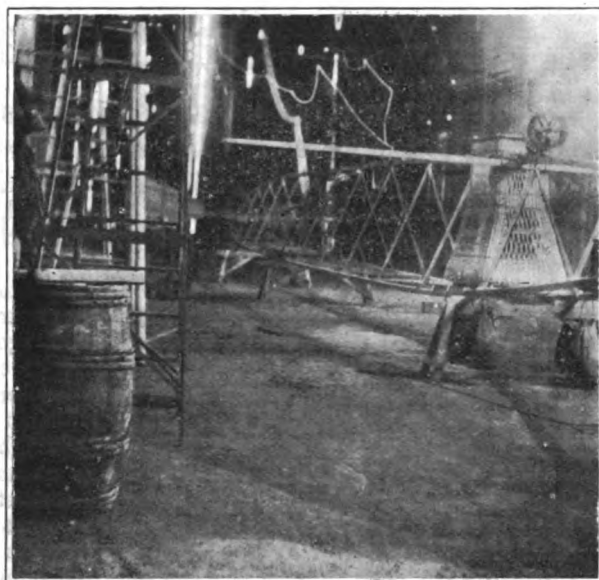
LORD IVEAGH has just received delivery of a Serpollet steam car. It is the first of its kind in Ireland.

J. C. MEREDITH, Limited, Summer Lane, Birmingham, stock all parts, such as tremblers, contact screws, etc., in connection with De Dion, Ariel, Aster, Decauville, Darracq, Minerva, Werner, and Motosaeoche motors.

CONTINENTAL NOTES.

By "AUTOMAN."

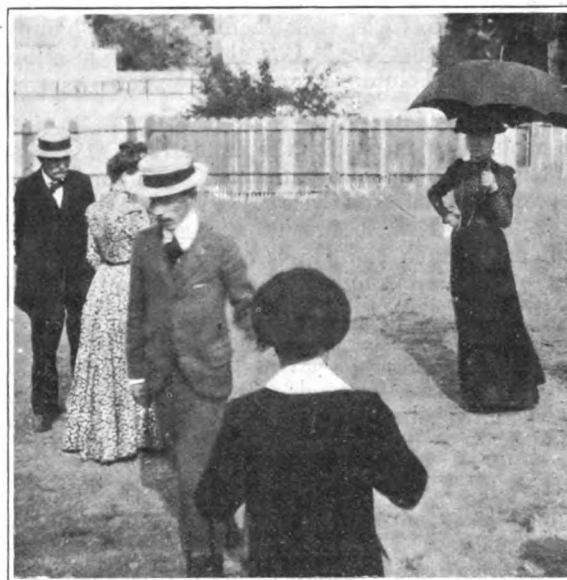
IN an interview with M. Georges Prade, of the *Auto-Velo*, M. Henry Fournier speaks of the car in which Captain Laycock met with his serious accident the other week. It is the 20 h.p. Mors, which belonged to Count Cahen d'Anvers, and in which he met his death. Fournier, then quite unknown to fame, was also in the car at the time with the unfortunate Count, and had a very narrow escape. Fournier left Southampton last week by the "Deutschland," bound for New York. Having driven the fastest automobile, he naturally chooses the fastest Atlantic liner. He has taken out with him to America a 40 h.p. Mors car, similar to the one on which the Paris-Bordeaux and Paris-Berlin races were won, and which was presented to him by the brothers Mors on the occasion of his victorious entry into Berlin. Tod Sloan is going with Fournier, and has become the owner of the Mors car piloted by M. Brasier in the Paris-Berlin race, and which arrived fourth. The Buffalo-Erie race seems to be one of the objects of Fournier's trip, but he also gives it to be understood that several propositions have already been made to him to start an agency in motor-cars in New York.



THE SANTOS-DUMONT MOTOR-BALLOON IN COURSE OF PREPARATION.

In a letter to a contemporary, Mr. Sidney H. Hollands, of Coventry, comments on M. Santos-Dumont's accident and providential escape, and brings up the old controversy of heavier than the air or lighter than the air, or, as he aptly puts it, gravity versus levity, on which subject the Duke of Argyll, a great authority on aeronautical subjects, held and propounded the doctrine that nothing but gravity or heavier than the air could possibly succeed in the way of flying machines. Mr. Hollands goes on to speak of the use of gravity in the soaring of birds, and ends up by wishing to hear of M. Santos-Dumont's conversion to the gravity theory. In an interview I had with him just before he met with his last accident M. Santos-Dumont explained to me his ideas on this controversial question, and told me that he first began with lighter than the air, and was soon converted to heavier than the air, which is the opinion he still holds, backed up now by a larger practical experience of mechanical flight than any living man. Contrary to the statements to be seen almost every day in the Press, the Santos-Dumont No. 5 was heavier than the air, and was raised from the ground by purely mechanical means. Before the engine was put in motion it rested on the ground, and if the engine was stopped when in the air it sank towards the earth in a

vertical direction. It was, therefore, heavier than the air. The balloon is only used to reduce the weight of the whole and thus make the conditions more birdlike, for it would be impossible for human ingenuity to construct a machine whose power would have the same comparison to its weight as is the case with a bird. But M. Santos-Dumont goes further and claims that the shape of his balloon makes it act as an aeroplane. Owing to the horizontally elongated form of the envelope it is easier for it to go through the air horizontally than vertically, therefore it has a tendency to float. With regard to the flight of birds, M. Santos-Dumont does not hold the opinion generally expounded, that is that the birds are aided in their flight by the wind, and is convinced that birds do not tack like ships. He rather leans to the view that the bird chooses for itself the currents of air that suit the general direction of its flight. That the wind is a series of puffs and eddies, and not a solid body of air moving along, is a well-established fact, and it is also a fact that a bird's visual power is far greater than a man's, and who can tell, says M. Santos-Dumont, whether or not the bird's eye is constructed in such a manner that it can actually see the air moving and choose the eddies favourable to its direction. Then, again, it is an undoubted fact that the wind is in fan-shaped stratas, so that if twenty small balloons are sent up together from the same spot they will take twenty different directions



M. SANTOS-DUMONT (THE CENTRAL FIGURE OF THE GROUP) AT THE AERO-CLUB AT SURESNES.

according to the altitude they reach. A bird may therefore sustain itself in the air just above the strata of the wind which is near to the earth, and in a strata which is more favourable to its flight, and thus it may seem to us to be flying dead against the wind when in reality it is only flying across the wind. There is also another point that is not generally understood with regard to M. Santos-Dumont's system, which is, I believe, quite novel and unique, that is the fact that to ascend or descend he does not throw out ballast or let out gas, but by means of a balance weight he simply points or inclines his machine (balloon, keel and all) upwards or downwards, and the propeller does the rest. His system has frequently been compared to Count Zeppelin's, but there is no similarity between the two—as the latter experimenter throws out ballast to rise, and is therefore lighter than the air.

MR. GRIFFITHS, in an article on this subject in a daily paper, comments in a similar manner to Mr. Hollands on M. Santos-Dumont's system, and wishes also to see the young Brazilian change his plan. Mr. Griffiths, however, finishes up his article by saying that M. Santos-Dumont's system will never succeed until a tallow candle can be pushed through a deal board, over-

looking the fact that to perform this interesting experiment you need only fire the candle from the barrel of a gun, and it will easily traverse a deal board.

M. HENRY DEUTSCH, as I have already mentioned to the readers of the *Journal*, was constructing a flying machine on the same system as M. Santos-Dumont, but much larger. Owing, however, to the criticism of the *New York Herald* on M. Deutsch competing for his own prize, the latter gentleman decided to stop the construction of his machine and gave orders accordingly. Fortunately, however, M. Victor Tatin and the Committee of the Aero Club have induced M. Deutsch to modify his decision, and to hand over the construction and trial of his air-ship to M. Tatin, who will complete it, assisted financially by M. Deutsch, and who will enter it for the Deutsch prize.

M. MAURICE FARMAN, the well-known French *chauffeur*, is the latest to take to aeronautics, and went up last Sunday in a balloon cubing 800 meters.

AN International Automobile Club is about to be formed in Paris, with the object of constructing an immense motodrome for automobile races. Prince Drucki Lubecki, the Counts of Kermel and Briey are amongst the names of the Committee, and the club premises are to be somewhere near the Champs Elysées. It is intended that the A.C.I. shall be the meeting ground for all the affiliated clubs.

THERE are about fifty entries for the motor races at Deauville, which take place to-morrow (Sunday). The competing cars must start from the Châlet des Cycle at the Porte de Suresnes, in the Bois de Boulogne, Paris, between 9 a.m. and noon to-day (Saturday), and must reach the garage at Trouville between 6 a.m. and 10 p.m. this evening. Amongst the entries are Girardot, Lemaitre, Serpollet, Osmont, Teste, Demester, Cormier, and Rivière. Mr. S. F. Edge has entered a 50 h.p. and a 16 h.p. Napier, and Jenatzy has entered a car in which he hopes to do the kilometre in less than 30 seconds. By special permission, Mr. Edge will be controlled at Boulogne, and will run direct to Trouville instead of going to Paris and thence to Trouville.

QUITE a number of Scotch firms inform us that they have made special arrangements to cater for the wants of motorists during the coming trial week. Messrs. Calder and Armour, 14, Broomielaw, Glasgow, after consultation with the Scottish Automobile Club and the Secretary of the Automobile Club (London), have arranged to supply at the tramway stables—in which the competing vehicles will be stored—Carless, Capel and Leonard's petrol, and Pratt's motor spirit. Carts will deliver the spirit at the tramway stables on Saturday, August 31st, from 8 to 10 a.m.; on Monday, Tuesday, Wednesday, Thursday, and Friday next week from 6.30 to 8 a.m.; and Saturday, September 7th, from 8 to 10 a.m. Messrs. Calder and Armour also hold a stock of Price's motor-car lubricants. Messrs. Rennie and Prosser, Limited, 93 and 95, Mitchell Street, Glasgow, agents for De Dion-Bouton and Panhard and Levassor, are prepared to deliver petrol, oils, grease, etc., at the garage where the cars will be stored by six o'clock each morning. The firm is also in a position to supply all sizes of Clipper-Michelin tires at the shortest notice. Mr. W. H. Kingsbury, 61, Bath Street, Glasgow, will also have a large stock of spare parts on hand for different types of cars, as also D oil and other lubricants and greases. Messrs. Peter Lee and Sons, of 34, Trongate, Glasgow, will supply motor spirit, cylinder oil, axle, bearing, and other grease, etc., they having arranged for their carts to deliver the same every morning between 6.30 and 8 a.m. during the trials. Finally, the Kingsburgh Motor Construction Company, Limited, Granton, Edinburgh, write asking us to mention that they are prepared to supply petrol and to do any repairs during the trials. A stock of parts for Daimler cars is kept on hand.

CORRESPONDENCE.

A SUGGESTED CLUB FOR MOTOR-BICYCLISTS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Mr. T. Underwood suggests in your issue of August 17th the formation of a club for motor-cyclists. This suggestion has been already anticipated by the formation of the Automobile Sporting Club, with headquarters at Burgos House, Sydenham Road, North Croydon, which will be opened on September 1st for the convenience of automobilists, cyclists, and lovers of sport in general. Those gentlemen who specially favour the motor-cycle will here be able to arrange runs either among themselves or in conjunction with riders of motor-cars or cyclists, and will have all the advantages of a well-appointed social club.—Yours truly,
R. J. CHOLMELEY, Secretary.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I see among correspondence a proposal to form a motor-cycling club. I for one shall be pleased to join if the subscription does not exceed a guinea; it is the one thing that I have often thought should be formed, and I am sure many cyclists would buy motors if they thought there were chances of club runs, for of all things a cyclist hates most is riding by oneself. Many a time have I gone to seaside resorts on my Werner by myself for the reason that my machine is too fast for the ordinary bicycle. Trusting the proposal will receive many supporters.—Yours truly,
HENRY KENNETT.

ELECTRICAL IGNITION MATTERS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—As one to whom the advantages of a personal visit to the recent Automobile Exhibition have been denied, allow me to thank you for your excellent show numbers, which to me have been second only to an actual visit.

I should like to say a few words on the much-discussed subject of electrical ignition. Speaking as an electrician I must say that it is a marvel, not that electrical ignition gives trouble, but that it works at all, by reason of the electrical abortions perpetrated at the hands of some "motor" engineers. The novice is in many cases instructed to short circuit his battery, either primary or secondary, as the case may be, through an "ampere-meter," which electricians have known as an ammeter from time immemorial. Then, again, many of the contact breakers—I beg pardon, "tremblers"—some of which do not tremble, are most unsatisfactory. Why a "wiping" contact is not used on the half-speed gear more often than the "touch and go" affair, with its flimsy and costly platinum contacts, is a mystery. The slight spark at "break" occasions no trouble, as the rubbing action of the contacts cleans off any oxidation, which, in the case of the "touching" contact, would be serious were it not for the platinum. A case in point is the switch used in lighting circuits. A very heavy spark is produced at "break," burning the contacts considerably. This, however, is provided for by the construction of the switch, which automatically cleans the contacts by the rubbing action it exerts when being turned "on" or "off." It is scarcely necessary to observe that the primary spark in connection with electrical ignition is infinitesimal compared with that encountered in dealing with heavy currents at a very much greater voltage.

While on the subject may I draw Mr. A. J. Wilson's attention to a slight error which has crept into the last edition of his admirable work on motor-cycles? He says, on page 41, line 42, *et seq.*:—"The route is from one end of the battery to the handle-bar, along inside the left half of the handle-bar to the switch on its end, back and along the frame to the automatic contact-breaker, thence to the induction coil . . . and back along the frame to the battery. In other words, both poles of the battery are to be "earthed" to the frame, which, on completion of the circuit by the switch, would result in a "dead short." Should this meet his eye, I trust he will pardon me for offering a friendly correction. A useful tip to protect terminals from wet, and much neater and handier than rubber tape, is to encase the wires throughout their length with rubber tube.

This is turned back at each end while the necessary contact is effected and then slipped over the entire terminal, not only keeping the wet out but raising the insulation of the entire wire.

I may say I am experimenting with an improved coil, but, as the present letter has run to too great a length, will hope to say a little more at a later date.—Yours faithfully,

Port Elizabeth, South Africa.

ROOINEK.

P.S.—Just as I have written this a belated mail, detained by “military operations,” brings me my copy of the *Journal*. May I say how heartily I concur with the Rt. Hon. Sir J. H. A. Macdonald? Surely the time is past when we depended on the Continent for the smallest bolt and nut. *Garages, chauffeurs, etc.*, are to the British mind monstrosities, and why must the good old word “fitter” or “mechanic” be replaced by *mécanicien*? Does this latter distinguish the finker or “motor” engineer from the genuine article? Let us by all means use good British material and dignify it by good wholesome Anglo-Saxon.

AERIAL NAVIGATION.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—No one can deny the interest displayed by everyone in the problem of aerial flight as being worked out by our neighbours the French, but has it not struck some of us that English capitalists, with their vast wealth, or even the Government itself, never offer a prize for anything? A good prize, such as the Deutsch prize, would stimulate inventors to reach many a desired end. Everyone will admit that it is through the energy of the French that the motor-car is with us, and further that it must benefit the human race. We are imitating the French every day in motor-car building, and soon we shall be pirating from the same nation ideas in aerial navigation, not because we have no inventors, but because our inventors are poor. Now, Sir, I have struck the nail right on the head. Who ever heard of a real inventor rich at the start? I might almost ask who ever heard of an inventor rich at all? As a class they are poor, and to patent an invention under such circumstances is the height of folly, for the patentee, as everyone knows, or ought to know, gets no protection from the Government. How, then, is he to fight a wealthy company, or how is he to fight anybody, for that matter? Let me quote an experience of my own as an inventor. My first invention consisted of an air ship, without any balloon attached, and I guaranteed it (under an indemnity) to rise direct in a vertical line, also to travel when at any reasonable altitude in any direction at will, and to return to the same place and come to rest in the same position as before starting. I approached all I could think of, whom I considered might, by reason of their wealth, finance me in the undertaking, and I failed. When I found, as was invariably the case, that the full working drawings were to be sent by post, not taken by hand, I dropped my invention, but had I had the slightest encouragement I have no reason to doubt that aerial navigation would have been achieved ten years ago.

My second invention was a safety appliance for railway working, and consists of an apparatus (quite inexpensive in itself) that will make collisions absolutely impossible, no matter what the conditions, even should the driver disregard the signals, or a train run away. I approached a wealthy railway company, was willing to agree to an indemnity as before, but here a complete specification of a patent was required, which amounted to the same publicity as in my former experience. Where, I ask, is the inventor's protection? If we must imitate the French, or any other nation, we might have the chivalry to admit it, though the confession does not say much for our boasted engineering skill. Instead of our being called a nation of shopkeepers I think it would be more appropriate if we were called a nation of imitators.—Yours truly,

H. W. WALTER.

A CORRESPONDENT writes:—“Can any of your readers give me experience of working of the Twin tire, how it wears, and whether it skids in mud?”

REGARDING the proposed club for motor-bicyclists, Mr. C. Stanley Sadgrove, of 149, Ebury Street, S.W., writes that he would willingly become a member of the club should it be formed. Further, he is in a position to introduce other members.

AN ENGLISH MOTOR-BALLOON.

SO much attention is just now being centred on the question of motor-balloons that no excuse is needed for publishing some particulars of the work of an English experimenter—Mr. Frederick Buchanan, of Cosham, Hants—whose invention partakes of the nature of an air-ship, or mechanical bird, rather than a balloon. Mr. Buchanan's machine is heavier than air, but he has adopted the principle of the balloon as an assistance in preventing it being too heavy. The machine is as nearly as possible bird-shape, and has an ornamental bird's head affixed to the bow to assist the illusion, which is at the same time shaped to throw off or reduce the air resistance. The balloon part inflated is the portion above an imaginary horizontal line drawn through the centre. The actual air ship is in the portion below the line. Mr. Buchanan regards the balloon part, however, merely as a protection, and for no other purpose than to assist buoyancy in the same way as a life-belt is now used by a swimmer. The lower part, that is, the actual air ship, contains the car and machinery, in a framework of bamboo and canework, with portholes admitting air fore and aft. This framework—the whole ship, in fact—is surrounded by a covering of waterproof sail cloth, which by its curved shape reduces the air resistance which the open ship would inevitably meet. The air ship, which is all but ready for a trial trip, lies in a shed at the rear of Mr. Buchanan's residence. She is 120ft. long, with 12ft. to 14ft. beam, and will weigh, when the balloon is attached and everything on board, about 23 cwt. The present petrol engines in the ship are of from five to six

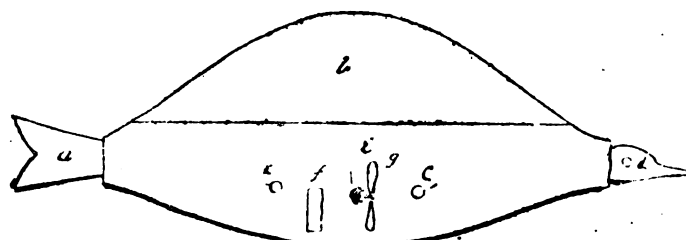


DIAGRAM OF BUCHANAN'S NEW AIR-SHIP.

horse-power, with two cylinders; but these have not given satisfaction, and consequently a new set is in course of construction by Messrs. Spencer Bros., of Highbury, to Mr. Buchanan's designs. They will be of from twelve to fourteen horse-power, with four cylinders, and will, it is expected, drive the ship at between thirty and forty miles an hour. The ship is steered by a powerful rudder, which works from every angle—up, down, or sideways—at the will of the engineer. It is driven through the air by two powerful propellers, one on each side of the vessel, and constructed on an ingenious plan, enabling them to give an ascending, descending, or steering power. They are, in fact, the wings of the bird, and act in conjunction with the tail rudder. The blades of the propellers are grooved on their surface transversely, the effect of which, the inventor claims, is to give them exceptional power of gripping the air. Mr. Buchanan is an elderly man, who has spent twenty years of his life and expended nearly £10,000 upon the working out of his scheme. He holds that this bird-like vessel dives head downwards and rises head upwards, and sails through the air with the action of a bird, and at greater speed than ever previously achieved. As far back as 1884 Mr. Buchanan submitted a model of his invention to the military authorities at the Royal Engineering School at Chatham, and Colonel Gordon, R.E., a brother of General Gordon of Khartoum fame, reported on behalf of a committee of inspection that they considered the machine would accomplish all that was claimed for it. But the War Office will not help in the development of private inventions, and for want of capital Mr. Buchanan has up till now been unable to perfect his ideas. Meanwhile, the Deutsch prize is still to be won, and Mr. Buchanan is full of confidence. His countrymen will wish him luck in his enterprise.

THE DUPONT TWO-SPEED GEAR FOR MOTOR CYCLES.

FOR some time past there has been a general tendency to fit motor-tricycles and quadricycles with a clutch; later still attention has been devoted to the question of equipping such machines, particularly quads, with a two-speed gear. Several devices of the kind have from time to time been introduced, and we are able to illustrate and describe that known as the Dupont. This gear consists of a main shaft, J (Figs. 1 and 2), upon which is mounted freely the main gear pinion I. This shaft and pinion replace those ordinarily in use. The change-speed consists of the case G, containing the bevel pinions K, K¹, K², and K³ (Fig. 2), which are mounted as follows—K and K² free upon the cross axis LL (Fig. 2), which in turn is held in the blocks PP, while K¹ is firmly keyed to the motor shaft J and K³, which is fitted with a long bearing, revolves freely upon the shaft J, but is keyed to the female clutch A by the key or feather N. A continuation of the gear box G forms the male portion of the clutch B, and the pinion I is also secured to G. The portions A and B are kept engaged by means of the spring E mounted concentrically upon the motor shaft J, whilst the clutch A can be kept stationary,

when not engaged with B, by means of a band brake (not shown in illustrations). In proceeding to fit the gear it is necessary to disconnect the engine from the frame, take the flywheels apart, leaving the cross-head pin attached to the flywheel on the pinion side, and, having removed the existing pinion shaft from the flywheel, see that the coned end of the shaft J and the key fit perfectly in the female cone of the flywheel. Having ascertained this, proceed by placing the correct half of the crank case over the end of J, after which replace the flywheel. Tighten up and replace the nut locking-plate, and swing the whole between the centres of a lathe to see that the flywheel is true with the shaft J. After seeing that this is correct, replace the engine connecting-rod and second flywheel on the crank-pin,

tighten up the nut, and replace the whole in the lathe and true up the flywheel just replaced with the flywheel already fixed to the shaft J. When both flywheels revolve truly finally tighten up and replace nut locking-plate. The two halves of the crank case should now be rebolted together, seeing that the crank-shaft has a slight amount of end play (about one sixty-fourth of an inch). Remount cylinder and combustion head and refix engine to frame, now see that the new pinion meshes correctly with the large gear wheel and that the shaft J is parallel with the driving-wheel axle. At the outer end of shaft J will be found two small recesses, the outer of which locates the position of the ball-bearing sleeve, whilst the inner recess indicates the position of set screw of collar F (Fig. 2). Having adjusted up the ball bearing in the correct position on the shaft, place the clip with the swinging

arm over the axle casing, and bringing the arm into position with the ball bearing casing, mark off the holes in the former and drill for size of bolts and secure in position. When fixed see that the shaft revolves freely.

It will now be necessary to fix the clip, to which is attached one end of the fork by means of the female portion of the clutch A is disengaged from the male portion B on to the axle casing. Place the runners on the pins in the fork, and, holding them centrally in the recessed portion M, mark off the hole in the other end of the fork arm from that already drilled in

the clip, for the bolt which will form the fulcrum upon which the fork arm will swing. The side of the fork arm upon which the incline is formed is to be nearest the gear case G. Having fixed the arm in position, slide the clip along the axle casing until the lever, which swings on the pin formed on the clip, and to which one end of the band brake is attached, is clear of the straight portion of the fork arm at the bottom of the incline by one-sixteenth of an inch to allow the spring F to press the clutch A well home, and tighten the clip in this position. If the lever is now swung so as to ride up the incline it will be found that the female portion of the clutch is withdrawn from the male portion, and the spring E at the same time compressed, and in this position the free motor is obtained. To allow of the lever riding up the

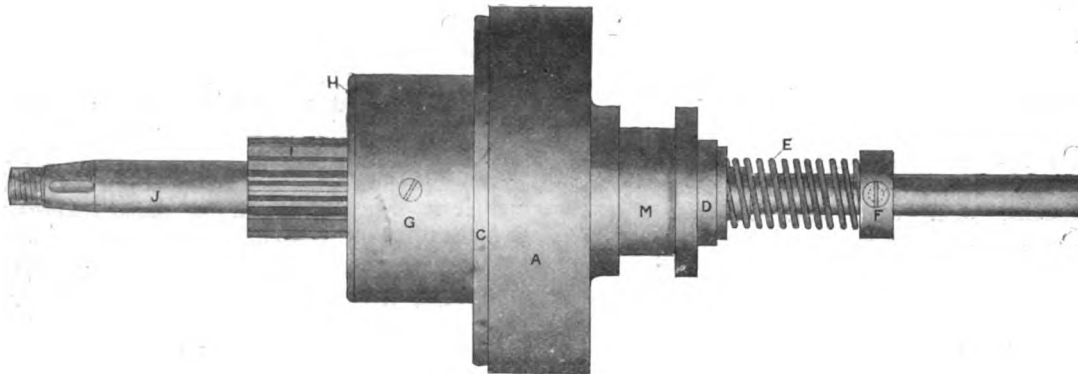


FIG. 1.—GENERAL VIEW OF GEAR.

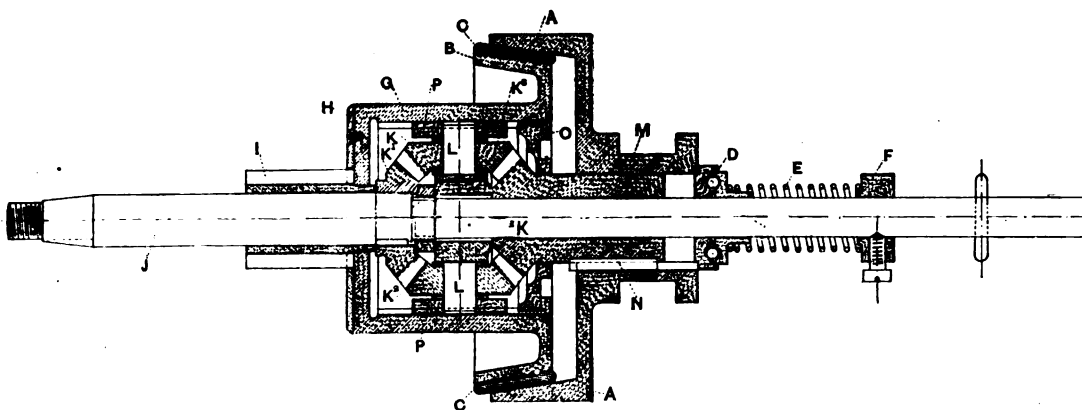


FIG. 2.—SECTIONAL VIEW OF GEAR.

A, female cone of clutch.
B, male cone of clutch.
C, fabric clutch grip.
D, clutch thrust ball bearing.
E, clutch spring.
F, clutch spring stop.
G, clutch box enclosing gear.

H, disc plate screwed to G, and cut to fit into teeth of motor pinion I.

I, motor pinion loose on motor-shaft J.
J, motor shaft.
K, bevel pinion keyed on motor-shaft J.
K¹, K², bevel pinions carried by clutch-box G on trunnion spindle L L.
K³, bevel pinion fast on clutchshaft J, by feather N.

L L, trunnion spindle carrying bevel pinions K K².
M, clutch collar for striking arm.
N, feather making bevel wheel K³ fast to female portion clutch A.
O, disc closing open end of clutch box G.
P, carriers carrying trunnion spindle L L.

incline easily it is advisable to round off the edges engaging, so as to obtain a smooth action.

The operating handle may now be fixed, in any convenient position, to the top tube of the machine, and the rod to connect it to the top end of the lever on the clip made to the correct length. To obtain this length place the pin in the handle in the forward recess (*i.e.*, nearest the handle bars, and which will afterwards be the position for the top speed), and with the bottom end of the lever on the clip just at the bottom of the incline on the fork arm and clear of it; bend the ends of the rod to fit in the holes in the ends of the handle and clip levers. It may be found necessary to crank or set this rod to clear the rider's leg owing to the operating handle and the lever on the clip not being in line. When this rod is fixed in position on the operating handle, being placed in the mid or upright position, the end of the lever on the clip should have reached the straight portion at the top of the incline on the fork arm, and should be resting on it for about one-eighth of an inch, and the female portion of the clutch A should be clear of the male portion B, whilst the band brake should be quite clear of A to allow of its revolving freely. On the operating handle being locked in the back recess the band brake should grip A fairly tightly, and if this is not the case it must be adjusted to do so. The gear should now be ready for testing. See that all the bearings are lubricated and the gear box G filled with grease by means of the small screw shown in Fig. 1. Jack up the driving wheels and start the motor by means of the strap and pulley provided, keeping the operating handle in the upright position. In this position the motor shaft J, driven by the engine, rotates the bevel pinion K1, which in turn rotates the pinions K and K2, and these cause K3 to rotate in the opposite direction, carrying the female portion of the clutch A with it. But as A is not engaged with B no motion is transmitted to the pinion I. Owing to the centrifugal force set up in G, and the slight amount of friction due to J and A travelling in opposite directions, there is a tendency for the shaft J to carry the whole gear box G round with it, and this may be sufficient to transmit some motion to the road wheels even on the level road unless the brake is applied. In placing the handle in the forward position (*i.e.*, the top speed) the female portion of the clutch A is allowed to engage with the male portion B, thus preventing A from rotating in the opposite direction to J, and the whole gear is rotated in the same direction as J, and at the same speed. On placing the handle in the back position (*i.e.*, the low speed) the two portions of the clutch are again disengaged and the band brake caused to grip the portion A, thus preventing it from rotating. The motion of the engine shaft is then transmitted through the pinion K1 to the pinions K and K2, but owing to K3 being held fast by the band brake on A the motion is transmitted through the cross axis LL to the gear box G, carrying the pinion I with it, but at half the speed of the shaft J. When thus properly fitted the gear runs beautifully, the speeds being changed by a slight movement of the lever without the slightest shock or jar to machine or rider. With the Bowden wire fitted to change the speeds the action is even more delightful. The sole agency for the Dupont gear is held by the United Motor Industries, Limited, 40, Holborn Viaduct, who have already supplied a considerable number of them.

THE motor-cars supplied to the Austrian army are destined to perform more duties than that of transport. By a simple belt arrangement the motor drives a dynamo which generates electricity for various purposes.

ACCORDING to the *Irish Cyclist*, probably the first automobile in Ireland was Hancock's "Era," afterwards named "Erin." It arrived in Dublin on the 6th January, 1835, having left London on board the ss. "Thames" on the 30th December. It only ran for eight days, "sufficient to effect the purpose of its visit;" though what this was is not stated. It was reshipped to Stratford. Before being taken over to Ireland it had carried some 4,000 passengers between the City and Paddington, and later on ran to Marlborough and back.

HERE AND THERE.



It is reported that the King of the Belgians is establishing a private motor garage at Ostend.

A SCHOOL for teaching the handling of automobiles has been established in Berlin. The fee is £2 10s. for ten lessons, which are supposed to be sufficient to insure competence.

MESSRS. ALLEN BROTHERS, of 496, Kingsland Road, N.E., supply Pratt's motor-spirit, lubricating oils, greases, and accessories for motor-cars and motor-cycles. Repairs are also undertaken at the same establishment.

As Mr. W. Goodchild and Mr. C. Poston, of Romford, were riding in a motor-car one day last week a dog was caught in the steering gear, and the car overturned. Mr. Goodchild was severely cut about the head and face.

WE learn that Mr. Dan Albone, of Biggleswade, is building motor-bicycles for Lord Alwyne Compton, M.P., the Right Hon. Graham Murray, M.P. (Lord Advocate for Scotland), Mr. George Kemp, M.P., and several other well-known gentlemen.

THE Birmingham Motor Manufacturing and Supply Company, Limited, have taken some fine showrooms at Broad Street, near to Five Ways, Birmingham, and will shortly have on view their latest direct-driven car, particulars of which we hope to publish later.

THE sole agency in Great Britain for the "Kelecom" petrol motors made by Messrs. Antoine and Co., of Liege, has been secured by the Motor Fittings and Engineering Co., of North Road, Brighton. The engines are made in various sizes from 2½ h.p. to 10½ h.p.

AT Tiddington, on the evening of Sunday, the 18th inst., a motor-car belonging to Mr. C. T. Crowden, of Leamington, collided with a Stratford cyclist on the road between Stratford and Tiddington. The cyclist was severely cut and bruised, and his machine much damaged.

WE regret to announce the death at Perth, on Wednesday, the 21st inst., of Mr. Rowland John Murray. For some time deceased, who was only twenty-six years of age, was connected with the Caledonian Cycle and Motor-car Company at Aberdeen, but relinquished his position on being appointed to the Scottish Motor Company in Edinburgh, of which he was a director at the time of his death.

AT a recent sitting of the Ripon City Bench, the mayor called the attention of Inspector Booth to the reckless manner in which some cabdrivers drove their vehicles, and asked that they be cautioned. Mr. Whitham (clerk) suggested motor-cars as well. The mayor said motor-cars should be included. Members of the Bench complained of the speed at which motor-cars were driven through the streets.

DURING the recent manœuvres Mr. Archibald Weir, of Ottery St. Mary, placed his De Dion double phaeton car at the disposal of the military authorities, which proved exceedingly satisfactory. Mr. Weir, in referring to the subject, writes, "I hear that in the Aldershot manœuvres the general and staff concluded that my phaeton was the car best fitted for the work. It did particularly well across country, and never failed to start in an instant."

AN unfortunate accident recently befell Mrs. Shaw, the wife of Mr. T. F. Shaw, the borough member for Stafford. Whilst driving to Stafford Station her horse took fright at a motor-car which was driven by the Earl of Shrewsbury, who was proceeding to Ingestre Hall. The animal bolted along at a rapid pace despite every effort on the part of the coachman to rein it in. Mrs. Shaw and the coachman were thrown from the trap, the former being badly shaken and sustaining slight concussion of the brain. We are glad to learn that Mrs. Shaw is now out of danger and is making good progress towards recovery.

A NEW motor-bicycle is about to be put on the market by the Progress Cycle Company, Limited, of Coventry.

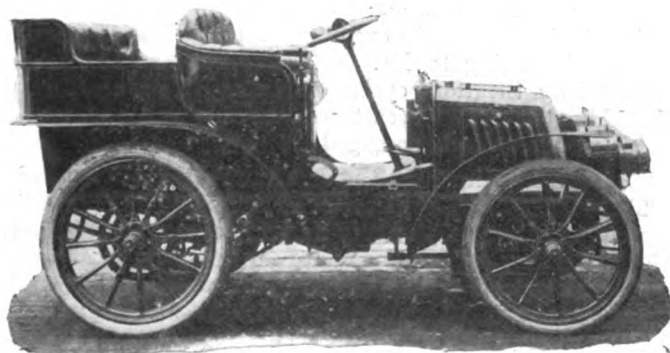
COMPLAINTS have reached us from Ormskirk that one evening last week a gentleman drove his motor-car at top speed through the town and past the church into Southport Road, to the danger of the lives of many cyclists.

CALLING at the works of the Century Engineering Company, Ltd., of Cumberland Park, Willesden, a few days ago, we found them very busy. They are now turning out three of the Century tandems per week; one was just being despatched to a customer at Durban at the time of our visit.

THE annual sports in aid of the Poplar Hospital, organised by the Danes Cycling Club, were held at the Memorial Recreation Grounds, Canning Town, E., on Thursday afternoon. Included in the event was a motor pursuit race, while Mr. T. Maltby, junior, gave an exhibition ride on his De Dion spider.

MR. JAMES PAINE writes to the *Bridgwater Mercury* to warn drivers of motor-cars that the law does not allow them to exceed a pace of more than twelve miles an hour, and that they "may rest assured that I shall do my best to see that the law is enforced." Evidently some painful experiences are in store for motorists going Bridgwater way, but as to what they are likely to be we do not know.

MOFFATT AND EASTMEAD, LIMITED, has been registered with a capital of £2,000, to acquire the business now carried on by Moffatt and Eastmead, Limited (in liquidation), and to carry on the business of makers of lifts, engineers, etc. The registered office is at 32, Green Street, Blackfriars, London, S.E.



THE RT. HON. A. J. BALFOUR'S 7 H.P. LIGHT PANHARD CAR.

BUSINESS is just now very brisk with the Roadway Autocar Company, judging from the following *resumé* of the deliveries to be made during the next few days. To the Duke of Westminster a 16 h.p. Mors, to Lady Rosslyn a 6 h.p. Mors, to Mr. H. V. Holden, of Ashford, Kent, a 24 h.p. Mors, to Mr. H. Livesey, of Tunbridge Wells, a 16 h.p. Mors, and some four or five Renault voitures. Altogether a very respectable total for one week.

MESSRS. DE DION BOUTON, LTD., recently supplied one of their "Mylord" cars to Mr. A. E. Hambro, a director of the Bank of England. This gentleman has a 12 h.p. Panhard, but the De Dion has proved so satisfactory that within a few days his nephew, Mr. H. C. Hambro, of Seale, Surrey, ordered a De Dion double phaeton. A similar car has also recently been delivered to Mr. Reginald West, a director of the Leeds branch of the Bank of England.

REFERRING to the paragraph in our last issue in regard to a delivery of a number of cars made to Mr. D. M. Weigel, the Panhard and Levassor Company, of Regent Street, S.W., write us stating, "that Messrs. Panhard and Levassor are not supplying cars to Mr. Weigel in view of the fact that we are their sole British agents. If the cars were delivered they were supplied to Mr. Weigel through one of the Paris agencies. At the same time we would point out that our deliveries of stock are far in excess of the so-called deliveries you mention as being the biggest sent to England."

A MILE motor-cycle handicap is to be included in the Lincoln cycle sports to-day (Saturday).

MR. C. FRISWELL is, we hear, leaving London to-day (Saturday), for Glasgow, on one of the latest types of 16 h.p. Mercedes cars.

DURING the present year a part of the London to Oxford main road is to be remade by the Bucks County Council at an estimated cost of £1,000.

WE hear that Messrs. Brown Brothers, Ltd., are experimenting with a chain-driven motor-bicycle, the engine of which is fitted with a free clutch.

A SUSSEX rector has been writing to the county papers, enthusiastically declaring that the automobile is opening out a new era for rural England.

IN the autumn manoeuvres of the Swiss Army, which take place from September 4th to the 20th, motor-cars are to be used both for the transport of men and material.

ACCORDING to a telegraphic despatch from Cape Town, General French has permitted the use of a railway motor-cycle, which is being built, and which will be capable of doing forty miles an hour.

MESSRS. J. M. WADE AND CO., of the Victoria Works, Felixstowe, have excellent accommodation for storing motor-cars. They also stock oils and greases, and undertake repairs of every description.

M. BUCHET, of Paris, has succeeded in producing a 40 h.p. petrol motor which only weighs 8 lbs. 13 oz. per horse power; he hopes to further reduce the weight to 6 lbs. 11 oz. per horse power in an engine of 60 h.p. he is at present engaged upon.

AT a meeting of the Sculcoates (Hull) Rural Council on Tuesday, it was decided to draw the attention of the East Riding County Council to the excessive speed of motor-cars in the district, and ask them to take some steps to control the speed of these vehicles.

THE Cinque Ports Engineering Company, of 14, George Street, Hastings, to whom we referred in our last issue as storing petrol, inform us that they undertake repairs of all sorts to motor-cars, which are done on the premises. The company are official repairers to the De Dion Bouton Company.

FRISWELL, LTD.'S, next motor-car auction, owing to the Glasgow trials, will not be held until September 17th. In the meantime a most extensive stock of second-hand vehicles is being offered for sale by private treaty at 1, Prince's Road, Holland Park, W., these ranging from motor-bicycles up to a 9 h.p. Napier car.

AT the last meeting of the council of the Institute of British Carriage Manufacturers, the Secretary was instructed to obtain certain information in regard to the speed of motor-cars on country roads, and to bring it forward at a subsequent meeting of the council.

AS the number of motor-cars in and around the town of Wexford is steadily increasing, Colonel Magrath of Bann-aboo, Wexford, has written to the local papers stating if owners of horses wish to get their animals used to motor-cars he will be glad to aid them, an offer which we trust will be taken advantage of.

ON Saturday morning last Dr. Newton was driving his motor-car along the High Street, Tonbridge, when, turning a corner, he ran into a horse and cart. The horse began to plunge, with the result that the two hind wheels and the axle of the motor-car were bent, and the horse was thrown down. Fortunately neither the occupants of the trap nor the motor-car were injured.

GENERAL ANDRE, the French Minister of War, and his suite have been visiting the powder works at Vonges and the forts at Langres in a fleet of five motor-cars furnished by Messrs. Cottereau, of Dijon. In the forthcoming French manoeuvres General Brugère will direct the operations from a 24 h.p. Serpollet steam car, piloted by Captain Genty.

THE "Locomotive" Company of America inform us that they are making arrangements for one or two of their cars to be in Glasgow (apart from the two on trial) for the special purpose of

giving trial runs to any persons who are interested in the locomobile. Appointments can be made either by writing to the London office or to Mr. W. M. Letts, at the Grand Hotel, Glasgow.

WE are glad to hear from Mr. Frank Morriss, of King's Lynn, that business in the automobile industry in his district is just now exceedingly good. Mr. Morriss tells us that the past week has been a record one with him, no less than five Daimlers having passed through his hands. As showing the demand for good second-hand cars, he mentions that he recently had sent to him two vehicles, which only stayed two days in his depot.

In addition to motor-quads and tricycles, the Enfield Cycle Company, of Redditch, are now making a "Royal Enfield" motor-bicycle. The frame of this machine has been specially designed for the purpose, and is fitted with the Royal Enfield Flexible front fork, a desirable feature on a motor-bicycle, as it eliminates the vibration from the hands and arms. The fork is of course much stronger than the one fitted to the ordinary Flexible bicycle. For the drive a tandem back hub is fitted and specially strong back stays and chain stays. The engine is a Minerva of the latest pattern.

MESSRS. FRISWELL, LTD., of Holborn Viaduct, E.C., have now received several specimens of the latest type of Peugeot voiturette. The car, which is fitted with a two-cylinder motor of 8 h.p., comprises several modifications, notably the fitting of equal sized wood wheels and the substitution of wheel for lever steering. A feature of the engine is that it is fitted with both tube and electric ignition, which can be used either independently or simultaneously. In the new arrangement no trembler is employed, but instead there is a make and break device on the half-time shaft, this being used in connection with a special high-tension coil. The new electric ignition apparatus is very neatly fitted, and is so attached that by removing two small nuts the whole of it can instantly be detached.

FROM Herr M. Krayn, of Berlin, we have received a copy of the "Automobil-Kalender und Handbuch der Automobilen Industrie, 1901-2." As the title clearly indicates, this is a handbook for the use of German motorists, and although the first year of publication it extends to no less than 556 pages. The first part consists of a diary, after which 100 pages are devoted to mechanical formulae. Explosion motors, carburettors, ignition apparatus are dealt with in the next part, after which are chapters descriptive of the leading types of petrol, electric, and steam cars. A useful portion of the book is that in which a list is given of the places where the batteries of electric vehicles can be charged in Germany—a list which attains proportions which we should like to see equalled in this country. Next come a *résumé* of the regulations relating to motor-cars in the various European countries, a list of clubs, and much other useful information. Although printed in German, being primarily intended for German motorists, the book will afford much useful information to any English automobilist contemplating a tour in the Fatherland.

ARRANGEMENTS are in hand for the holding of an international exhibition in Wolverhampton next year. The guarantee fund already amounts to over £30,000. The Earl of Dartmouth (the Lord Lieutenant of the county of Stafford) is president, and the vice-presidents include a large number of the nobility, members of Parliament, the mayors of neighbouring towns, and prominent manufacturers of the Midlands, Lord Barnard has granted part of the site, and an area of over thirty acres is made up of a portion of the beautiful park, including a lake, belonging to the town. Mr. H. A. Hedley, the general manager of the Glasgow Exhibition, and Messrs. Walker and Ramsey, the architects of part of the buildings of that undertaking, are now engaged in maturing the plans of the beautiful halls in which the exhibition is to be held. In these provision is made for the display of specimens of the finest modern machinery, assurances of exhibits from many leading engineering firms having already been obtained, as well as from manufacturers in other branches of industry. Negotiations are also in progress with several of the Colonial Governments with a view of exhibiting the resources of their countries.

FURIOUS DRIVING CASES.

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At the Barrow Magistrates' Court, on the 16th inst., Leon Vint again appeared in answer to a charge of furiously driving his motor-car in Dalton Road to the danger of passengers on Tuesday, August 6th. A plea of not guilty was tendered. Police-constable Duckworth stated that about 3.15 p.m. on the date in question he was on duty at the corner of Dalton and Abbey Roads, when the defendant passed in his motor-car at a furious rate. He was driving about 15.3 miles an hour. Defendant stated he had no witnesses to call, and a fine of 40s. and costs was imposed.

At Chertsey Petty Sessions, Count Seilern, of Farnham, was summoned for driving a motor-car at excessive speed at Egham on July 31st. The defendant, who attended with his solicitor, Mr. Staplee Firth, pleaded not guilty. All witnesses were ordered out of court. P.C. Day, stationed at Virginia Water, stated that at 4.20 p.m. on July 31st he was near the Wheatsheaf Hotel, when he saw a motor coming from Sunningdale at a furious pace. He went out in the road and held up his hand. The car was stopped. Count Seilern gave his name and address, and said he was only going about fifteen miles an hour. There were several cabs and cyclists in the road, and they were undoubtedly in danger. The Chairman: What do you estimate the pace at? Witness: Over twenty miles an hour. John Aldridge, baker, Middle Hill, Englefield Green, corroborated the constable's evidence. Count Seilern stated that he had driven a motor-car for about three years. He had never had an accident or complaint until last week. He then got two summonses, one for Chertsey and one for Farnham. On the day in question at Virginia Water he had a lady with him in front, and his Swiss *mécanicien*. His motor had not been running well that day, and he was not driving furiously down the hill towards the Wheatsheaf. He had the brakes on, and he was sure he did not exceed a speed of from ten to eleven miles an hour. It was not a fact that he drove away at a high speed after speaking to the constable. When a policeman was behind him he was always particularly careful. (Laughter.) Mr. Firth, in addressing the Bench, protested against the acceptance of evidence which was merely guess-work. He said all policemen seemed to have decided on putting excess speed at twenty miles an hour. He contended that a man could not guess the speed of an object moving in a direct line towards him, as was the fact in this case. He pointed out to the Bench that he knew from his own experience that the police in Surrey were getting most reckless with regard to their evidence on motor driving, and it had happened over and over again lately that the magistrates had to dismiss cases of this kind because they had found that in certain parts the police went out on expeditions to trap motor-cars and take names and addresses, however slow they were going. The Bench imposed a penalty of £5 and costs.

At the Thames Police Court, Arthur Weeks was summoned for driving a locomotive to the common danger in Wellesley Street, Stepney. The evidence of a police-constable and of Mr. H. W. Dyne, a licensed victualler, was to the effect that the defendant turned the corner of Wellesley Street into Hare Street at an excessive speed, the constable giving it at fourteen miles an hour. There were a large number of children about the streets, which were very narrow. The motor-car took the corner so sharply that it tilted on two of its four wheels. The magistrate said that to drive motors so quickly brought them into great disrepute, and set people against them who would not otherwise be prejudiced. The defendant would be fined 20s. and 2s. costs.

At St. Neot's, Arthur Wood, of Streatham Hill, was charged with driving a motor-car at more than twelve miles an hour at Buckden, Hunts, on August 13th. A constable said he saw defendant driving the car at a pace which worked out at twenty-six miles an hour. Defendant was fined £7 10s. and costs.

At Coventry, Charles Kingston Welch, Park House, Warwick Road, Coventry, was fined 10s. and costs for driving a motor-car at a speed exceeding the legal limit. The police evidence was that the car was travelling in the straight mile on the Kenilworth Road at the rate of from twenty-five to thirty miles an hour. In defence, it was urged that the defendant was an experienced driver, and, being on a straight road, there was no danger. The Earl of Craven, who was on the Bench, referring to the evidence as to the speed, said he should like to know how it was arrived at, as he would be sorry himself to say that anyone was going at the rate stated.

At Barmouth Petty Sessions, Eric Ibbetson, Duffryn, was fined £5 and costs for riding a motor-tricycle through the streets at what was described as a terrific speed. Defendant's plea was that he could stop the motor dead if necessary.

At Chelmsford, F. J. T. Horsey, of Finchley Road, London, was charged with driving a motor-car at a greater speed than twelve miles an hour. The counsel for defendant said that nobody believed motor-cars kept within the twelve miles an hour limit. There was a very great personage living at Sandringham who, according to the papers, covered the distance from King's Lynn at seventeen miles an hour. The Clerk: I think it right to say in favour of His Majesty that he can do no wrong. The defendant was fined £5 and £1 18s. costs.

In reference to the above case we have been requested by Mr. Horsey to state that the name of a third party was introduced into the case without his knowledge or sanction, and had he been able to be present in Court such an improper proceeding would have been prevented.

At Portsmouth, Harry Humphries, of the Cycle and Motor-Car Works, South Street, Chichester, was summoned for having, on August 11th, driven a motor-tricycle in Commercial Road and Landport Terrace, Southsea, at a greater speed than twelve miles an hour. Mr. J. M. Bew, solicitor, of Chichester, appeared for the defence. It transpired in evidence that on the Sunday afternoon in question the defendant was watched by a couple of constables (P.C.s Pratt and Sturges), when he was going at a high rate of speed, and by following him upon bicycles, to which "meteoroscopes" were attached, they found he was running at a pace of over sixteen miles an hour. The driving, however, was described as being carefully performed, the defendant keeping wholly upon the tram lines, while the ordinary traffic was small. The defence was that the rate of speed was not beyond ten or eleven miles an hour, and the defendant in that statement was corroborated by Mr. Rogers, of Farnham. The magistrates intimated that they felt bound to accept the evidence of the police, but they inflicted only the small penalty of 15s., including the costs.

At Beaconsfield, Arthur Rackhaw, motor-car driver for Mr. Louis Fleischman, of Burnham, was summoned by the Bucks police for driving his motor-car at a greater speed than twelve miles an hour. A police-constable stated that he saw the defendant driving 1 mile 210 yards in two minutes six seconds, which worked out at 31 miles 1,725 yards an hour. Deputy Chief Constable Sutton said that the defendant passed him on the way to court at sixteen miles an hour. The Bench inflicted a fine of £5 and £1 costs.

Two motor-car drivers were fined, at the Huntingdon Police Court, on Saturday last, for furious driving. Frederick Ryde, engineer, of Ealing, who was said by a constable to have driven a quarter of a mile in thirty-five seconds, was fined £5 and costs, and Ean Francis Cecil, of Stocken Hall, Oakham, a lieutenant in the army, was mulcted in £10 and costs, the constable stating that he saw defendant drive half a mile in one minute on Sunday, July 28th.

At Chertsey, Charles Fournier, a Frenchman, was summoned for driving a motor-car at a greater speed than twelve miles an hour, at Thorpe, on August 6th. P.C. Pickett said he saw the defendant, who was with the owner of the car, driving down Staines-lane at eighteen miles an hour, just before eight o'clock on the evening in question. Witness stopped the car and said to the defendant, "You are going rather fast," but the owner of the car intervened, remarking that they were not proceeding faster than was allowed, and that there was nobody in the road. Witness saw the defendant first against the Fishing Temple. The car went half-a-mile in one minute seventeen seconds. By Mr. Spyer, who appeared for the defence: Witness was not specially told off for the duty. He had never had a similar case before. The defendant stopped directly witness held up his hands. He stopped within twenty yards, while travelling full speed. P.C. Edwards, Egham, corroborated. Mr. J. M. Brown, who was in the car, was called for the defence, and stated that he thought the car was proceeding at the rate of about ten miles an hour. The defendant said he had had considerable experience in driving motor-cars. He was not going eighteen miles an hour. If that had been the pace at which he was going he would have run over a policeman. Fined forty shillings and costs.

At Bournemouth, Ernest Starr was summoned for driving a motor-car to the danger of the public. He pleaded not guilty. P.C. Rose said that on the 10th inst. he saw defendant driving a motor-car at the rate of about 15 miles an hour toward the Square. Witness shouted to him to stop, but he took no notice and drove straight on. Soon after, when defendant was returning from the Square, witness asked him why he did not stop when called upon to do so, and defendant replied that he did not see witness. Superintendent Foster said there had been several complaints from residents against drivers, this one in particular. Fined £1, including costs. A further charge was brought against defendant by P.C. Sumner for furiously driving on Thursday, the 15th. The constable stated that defendant was driving in the Old Christchurch Road on the wrong side and nearly ran into a horse attached to a carriage. The Bench convicted, and a fine of £1, including costs, was imposed.

At Bournemouth, Bertie Oran, motor-car driver, was charged with furiously driving a car in the Old Christchurch Road on the 16th inst. P.C. Sumner said he saw defendant driving a motor-car in the direction of the Arcade at a rate of about 13 miles an hour. Defendant passed between a cab and a bus and nearly collided with the cab. When defendant was on his return journey witness stopped him and asked him why he went down the town at such a rate. Defendant replied that he was not going very fast; only about eight miles an hour. Fined 5s., and 7s. costs.

At the Guildford Petty Sessions, Mr. C. N. Williamson, of White Hall, Hampton Court, was summoned in respect of furiously driving his motor-car. A Mr. Honey, a farmer, was the complainant, and stated that when driving on the Ripley Road with a young restive horse he saw a motor-car coming. He put up his hand, but the driver of the car took no notice except to go faster, and this caused the horse to dash off the road into the ditch, overturning the cart and all that was therein, leaving everything in a pretty mess. He swore the car was going over twenty miles an hour. His man supported the master's evidence, and gave as a reason for judging speed that he had been out on service in South Africa, and learnt how to judge speeds there. The farmer said he calculated a furlong on the road, and that Mr. Williamson covered the furlong in twenty-two seconds. He

admitted to Mr. Staplee Firth, who defended, that this was guess work, but insisted that it was practically an infallible calculation. He spoke too soon, for he was at once challenged to give a demonstration in court of guessing twenty-two seconds. Mr. Firth gave him the word to go. It was noticed that the majority of the Bench took out their watches, and much was the amusement when this champion witness declared that the twenty-two seconds had expired, when in fact only eight seconds had elapsed. He also admitted that he intended to claim for damages in a civil action. The Bench dismissed the case.

At Farnham Police Court, last week, Mr. Staplee Firth, solicitor, made an application in the case of Count Seilern, of Frensham Place, who on the 8th inst. was fined £10 and costs in two summonses for driving his motor-car at excessive speed. He said that the summonses were only served on the 5th (Bank Holiday), and on the 6th the Count came to London to consult him. As the Count had to go to the Isle of Wight, and he (Mr. Firth) was engaged in the High Court on the 8th, it was impossible to get up the evidence in one day, and he wrote on August 6th to the magistrates asking them to adjourn the hearing. He was astonished on receiving from the magistrates' clerk a letter, in which he said that the magistrates had determined to proceed with the hearing, and, after hearing three witnesses in each case, had fined the Count £5 and costs in each case, for which he would send a cheque. That placed Count Seilern in a very awkward fix. He should have been able to prove, and he thought anyone could have done if the case had been properly thrashed out and heard, that there was no evidence on which the Court could convict. Besides that, the Count had been put down, as the chairman expressed it, as being concerned in "the worst cases he had ever heard of," and that in his absence. He asked for an adjournment of the hearing. The Chairman: The Bench cannot grant your application. Mr. Firth: As a matter of personal convenience to me, as I shall be in Scotland at that time, will you adjourn it to the 12th? The Chairman: You have our decision, and that is sufficient.

LEAVING WITHOUT NOTICE.

At Bournemouth County Court, The Bournemouth Motors, Limited sought to recover from William McArdle £6 13s. 6d. wages in lieu of notice and damages caused by the defendant leaving his employment without giving notice. Mr. Chilton, who appeared for the plaintiffs, said the defendant was employed by the plaintiff company as a motor-car driver, and left without giving notice on a Monday afternoon, having been paid his wages up to the previous Saturday. The details of the claim were £1 10s., a week's wages in lieu of notice, and £5 3s. 6d., loss of profit in consequence of the plaintiffs' inability to fill the defendant's place. Francis Joseph Bell, managing director of the plaintiff company, said defendant was employed by the company, and taught the business of a motor-car driver, and remained in its service for about a month. He then left, but came back, and at his application was re-engaged at 30s. per week. He had only been employed a short time when he failed to turn up to work, and witness saw him subsequently driving the motor-car of another company. It was, of course, difficult to get a licensed motor-car driver at a minute's notice, and the car was idle for ten days. In making the claim he took the books and found that the average takings of the car for a week were £11 3s. 6d., and the working expenses were about £1 a day. Cross-examined by Mr. Tattersall, witness said that there was no specific agreement that a week's wages should be paid in lieu of notice. £1 10s. had been paid into Court. The defendant McArdle, called by Mr. Tattersall, admitted that he left without giving notice. He had paid £1 10s. into Court in lieu of notice. He left on the Monday, and he saw the car out the next day, driven by a man named Parsons. With regard to the profits, his experience was that if a car made £3 a week gross profit it was a very good week. The net would not be more than 30s. His Honour gave judgment for £3, including the sum paid into Court.

MR. ELMER APPERSON recently made a trip in one of the standard Haynes-Apperson two-passenger carriages from Kokomo to Chicago, covering the distance of 205 miles in thirteen hours, or at an average of a little less than 16 miles per hour. Those acquainted with the roads in that section of the country consider that the performance is a very creditable one.

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COMMENTS.



KING EDWARD left Homburg on Thursday last for a short visit to the Danish Court, *en route* for London and Scotland. His Majesty has derived much benefit from his stay at Homburg. During the early part of his visit he seldom went out except upon a motor-car; but later His Majesty's health so far improved that he was able to play golf. King Edward is, however, too enthusiastic an automobilist to abandon his favourite form of exercise,

even for one of a more athletic nature, and from first to last scarcely a day passed without His Majesty taking one and sometimes two runs on a motor-car. So much interest did the good people of Homburg evince in His Majesty's going and coming that it was found necessary on more than one occasion, in order to avoid a popular demonstration from the crowd assembled outside Ritter's Park Hotel, to send the car away empty. On the dispersal of the crowd the car would return and His Majesty depart without ostentation. Queen Alexandra, during her stay at Fredensborg, has also taken frequent rides on an automobile, often visiting Copenhagen on shopping expeditions.

Motor-Cars in Manœuvres.

WRITING to *Country Life* of his experiences of both the cavalry and cyclist manœuvres, the Hon. C. S. Rolls remarks that in the first of these the military mind was suspicious as to the capabilities of the motor-car. That it could travel across country was doubted till one or two runs of this nature had established its right to the advantages claimed in that respect, and added enormously not only to the ubiquity of the commanding officer, but also to the precise information forthcoming. Perhaps the most thrilling episode of the whole period was that of the officer who travelled twelve miles, rushed the enemy's outpost, drove right into their camp, got the information he was sent to get, and was away, returning at top speed by another route before anyone had time to recover from the astonishment which his presence caused and give chase or cut him off. As illustrating another useful phase of the motor-car in military operations, Mr. Rolls says of the cyclist manœuvres: "Sudden information was received that Lord Roberts, the Commander-in-Chief, wished to see the whole of the Cyclist Corps on parade at Queen's Ground at 8 a.m. This order was quite unexpected, and did not reach us till about 7.30, at which time various companies of cyclists were somewhat widely scattered about the district, having been out since six o'clock; accordingly, the General was driven back to the parade, and motor-cars were sent out to collect as many of the cyclists as could be found, and they succeeded in bringing in almost all, though one or two sections, which were found in outlying districts, arrived somewhat late. This feat could not have been accomplished by any other means."

The Speed of Motor-Cars in Scotland.

A NEW Order which has been made by the Secretary for Scotland with regard to the speed of motor-cars will give great satisfaction to Caledonian automobilists. The effect of the Order is to raise the limit of speed for light locomotives and motor-cars in Scotland from ten to twelve miles an hour. It is well known that the Locomotives on Highways Act of 1896 placed a limit on the speed of light locomotives, the section relating to pace reading: "No light locomotive shall travel along a public highway at a greater speed than fourteen miles an hour, or than any less speed that may be prescribed by regulations of the Local Government Board." It is also well known that this moderate maximum was reduced to twelve miles an hour in England under the powers given by the Act. In Sub-section 10 a reference to the Secretary for Scotland is substituted for a reference to the Local Government Board, and thus it came about that the reduction of the limit to twelve miles an hour, which was made in the case of England, suffered a still further curtailment in the case of Scotland, where the arbitrary and inadequate maximum of ten miles an hour has hitherto been in force. Thanks to the efforts of the Automobile Club the maximum limit of speed has now been raised to twelve miles an hour and the regulation as to pace thus assimilated with that in force in England.

What the Motor-Car is doing for France.

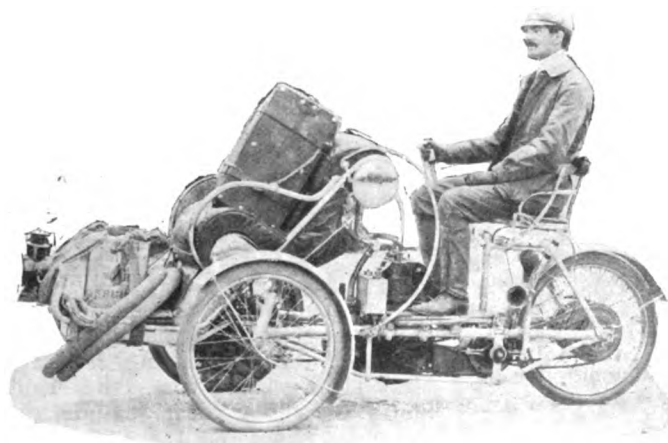
THE great activity which during the past few years has characterised the automobile trade in France has caused Mr. Thornwell Haynes, the United States Consul at Rouen, to prepare an elaborate report on the subject. Mr. Haynes intimates very plainly that the manufacture of automobiles is doing more, directly and indirectly, to stimulate business, and, consequently, to add to France's general prosperity, than any similar industry in which the people of that nation have ever engaged.

Appearances.

THE appearance of the participants in the 1,000-miles trial when they arrived at Bristol, after the first day's journey, was the cause of much gay writing in that section of the press opposed to automobilism, and recent pictures of racing *chauffeurs* in the Continental press have occasioned similar disparaging comment. One little journal which is said to be concerned with scraps of science deplors the coming of the motor-car as an anti-artistic force in this country, and urges that when the automobile comes into its rightful inheritance there will be little opportunity for the display of the present fashionable accoutrements associated with driving. Fashion is a changeable habit and can soon accommodate itself to new conditions, and this peevish objection is not likely to impede the progress of the new movement. But it illustrates the point that the prevalence of racing on the Continent is responsible for some of the prejudice excited in more conservative England.

The Wiseacres and Slow Coaches of Dundee.

SCOTLAND is rather backward in motor-car matters, and the Glasgow trials should do something to dispel native ignorance on the subject. We are led to write thus bluntly because of the attitude of the Dundee magistrates towards Messrs. Irving Brothers, of that city. They applied for a licence to run a motor-car on special occasions, and a route between the High Street and a local flower show held on Magdalen Green was mentioned. After some discussion it was suggested by the Bench that the vehicle should run via the Esplanade, as the route proposed was generally lined with people in the evening. Ultimately it was decided that the matter should be left to the chief constable and the applicants. This is a very absurd way of dealing with the matter. The magistrates cannot prevent a score of private motor-cars using the route suggested by Messrs. Irving, and we hope every motorist passing through Dundee will make a trip that way. Why then should a business firm be excluded? The fact that the route is one along which people walk in crowds testifies to the public need, and it is hoped one result of the present trials will be to show the people and magistrates of Dundee, in common with the rest of Scotland, the value of the motor-car in the rapid transport of people. If motor-vehicles were used in busy thoroughfares it would be an advantage, for the streets would be considerably clearer of traffic owing to the lessened space required by automobiles and the accelerated pace at which they move—when compared with those horse-drawn methods of the nineteenth century which still survive. But, after all, these Dundee slow-coaches are pretty wide awake, for they nodded their heads, and the Lord Provost concurred, when Chief-Constable Dewar said he objected to the motor-cars running in opposition to the Corporation tramways.



THE HON. LEOPOLD CANNING TOURING ON HIS CENTURY MOTOR-TANDEM.

The Folly of a Horse Driver.

A LEADING Yorkshire paper has been opening its columns to the plaintive wails of a Shipley gentleman, who had three frights in one day while driving "a young horse that had never seen one of these (motor) carriages." All we can say is that the man who does not accustom his horse to a motor-car before trusting him on the road is woefully behind the times. No horse should be allowed on the public highway—unless the driver is willing to take the risk—without a course of elementary education. And no equine curriculum is, nowadays, complete unless it includes the automobile.

Local Helpers.

INDIVIDUAL motorists throughout the country can do much to allay popular prejudice by sending brief and lucid letters to the local press whenever undue or unfair prominence is given to accidents happening to motor-vehicles. Much good work has already been done by this means, and we are always

pleased to see the persistence with which some gentlemen educate the editors and readers of country newspapers. Mr. Archibald Ford has just had an excellent letter in the Liverpool papers on the subject, in which he shows how generally accidents to horse-drawn vehicles are ignored—because of their common occurrence—while the novelty of the motor-car is the newspaper excuse for chronicling mishaps, etc., in connection with its progress. Often this arises from the inexperience of the driver, or the desire of novices to go beyond the legal limit and similar causes unconnected with the mechanism of the car. These are points which should always be made clear in local papers whenever trivial incidents are exalted into catastrophes.

For Week Ends.

EVIDENCE of the popularity of the motor-car among pleasure seekers has been found during the present summer by the absence of cars for hire at the leading firms in London. Between Thursday and Tuesday the number of automobiles available for hire has been altogether inadequate to the demand, and not a few private owners, who have not wanted their cars for the week end, have found a source of profit in letting them to friends and other people who have advertised for motor-cars for week-end trips. This is a branch of the industry likely to prove lucrative in the near future, and one that Metropolitan firms will do well to regard with attention and care. Cars have not only been booked weeks in advance but inquirers have been offering excellent prices.

The Tour of an Electric Car.

THE powerful electric car of the British and Foreign Electrical Vehicle Company successfully completed its tour to the North on Friday last week. We met Mr. Theodore G. Chambers in the garage in the tramway stables in Glasgow on Saturday, and got from him a few particulars of the trip. In our last issue we left the car on its way from Lancaster to Carlisle, which was reached on the Tuesday evening. Here trouble was experienced in getting the batteries recharged, an operation which was not completed till late the next day (Wednesday), causing the party to be out travelling all the night. Thursday found the tourists at Sanquhar, where they were entertained by Mr. McConnell, the proprietor of some collieries in the district, and the batteries recharged. Another night journey ensued, Glasgow being reached about five o'clock on Friday morning. The British and Foreign Company are naturally proud of the achievement, for it is the first time such a long journey has been attempted and completed by an electrical vehicle.

The Speed of Motor-Cars.

THE question of the speed of motor-cars is still receiving the attention of the town, county, and district councils throughout the land. At a meeting of the Canterbury County Council last week the chairman asked the town clerk if they had any bye-law to limit the speed of motor-cars while passing through the city. Without wishing to throw cold water on a new invention, he had seen several examples of rapid travelling which were dangerous to the public, and especially to children. Councillors Godden and Burren gave instances of reckless travelling through the city, and urged that steps should be taken to bring the drivers under control. Alderman Cross proposed that a bye-law be framed to limit the speed of motor-cars to eight miles an hour in the city, but it was eventually agreed that the town clerk should look into the law on the subject and report at the council meeting next week. On Monday the Darlington Rural Council decided, in consequence of the frequency and serious character of motor-car accidents, to bring before the Local Government Board the desirability of enforcing registration of such vehicles and compelling drivers to carry both in front and at the rear of their cars a conspicuous number which would assist identification in case of accident.

Beverley Reasonable.

At a meeting of the Beverley Rural District Council, on Saturday last, the Chairman, in moving the adoption of the minutes of the Highways Committee, stated that as Chairman of that Committee he had received numerous complaints with respect to the alleged furious driving of motor-cars in the district. It appeared to him that the District Council had nothing whatever to do with the matter. They had in that Riding a well-paid and very efficient chief constable, and an efficient police force, capable of looking after the interests of those who had to use the highways, and of enforcing the laws for the regulation of the traffic. He would like to say that as this new means of locomotion had come to stay, and ultimately, in his opinion, would benefit all classes, it behoved those who at present drove them to do so in such a way as not to raise public opinion against them to such an extent as would retard the development and general use of these vehicles.

The Postmaster-General on Motor-Cars.

LAST Sunday, by the kindness of Lord and Lady Londonderry, some twelve hundred cyclists attended a church parade at Wynard Park, Stockton-on-Tees, the residence of the Postmaster-General. At the conclusion of the service the company assembled at the cricket pavilion, where a vote of thanks was passed to Lord and Lady Londonderry for their kindness in throwing open their beautiful grounds for the parade. His Lordship, in a characteristic speech, said he was extremely pleased to welcome them. He proceeded to remark upon the development of the cycle and motor-car for business. He believed that motor-cars, as they improved, would be found not only of the highest convenience, but economical in use. He was having one built for himself, but it would not be geared beyond sixteen miles an hour. He was filled with consternation at the furious speed at which motor-cars were driven, and thought they should not be allowed to proceed at a greater pace than a pair of horses could be driven at.

Amusing but Annoying.

IN the course of a letter to a Liverpool newspaper a northern automobilist relates a few of the incidents of his travels to show through what befogged lenses the general public regard the slightest movement on the part of a motor-car. When touring in a remote part of Cheshire he found, while passing through a village, that a small screw, scarcely half an inch long and of no importance, had been lost from somewhere in the region of one of the axles. The motorist called at the local cycle repairer's and had it replaced, afterwards continuing on his journey. Imagine his surprise on seeing in a country paper, the very next Saturday, a paragraph of goodly length, headed in large type, "Motor-car Accident," and a description of himself (name and all) as having had a breakdown and put up for repairs at this identical shop in that particular village! The same motorist relates the following story:—"Someone said to me the other day, 'There is a fine red motor-wagonette just gone along, but it's round the corner there; they've had a breakdown and are mending it. They can't get it to go.' I hastened to view the disaster, and there I beheld the owner of the car filling up his water tanks!"

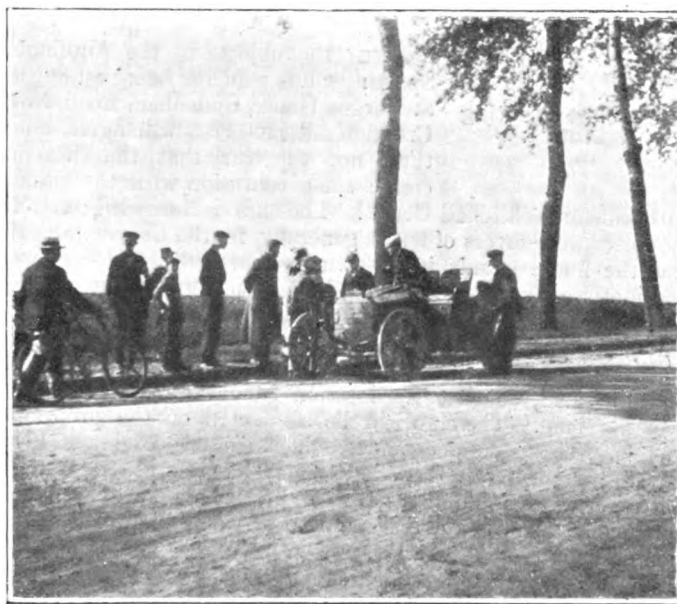
Where to Draw the Line.

A CORRESPONDENT informs us that while out with a friend the other Sunday the exhaust valve of his motor-trike broke. They were passing through Colchester at the time, and seeing a cycle shop open (a C. T. C. repairer) they naturally entered it, hoping to have the matter put right. Whilst waiting they distinctly heard someone say, "Whatever they want, say we have not got it." A girl came out, and when asked for an exhaust valve, gave the answer they had overheard. Asked if they did business on Sundays, the girl replied, "No, only hiring-out trade on Sundays." The trike was towed by a Pieper car to

Chelmsford, where it was left in the capable hands of Mr. Knight. Our correspondent advises motorists to carry any spare parts that may go wrong, for should they be stranded at Colchester they may know what assistance to expect on a Sunday. If the cycle repairer in question has a lingering regard for Sabbatarian principles, to draw the line at selling parts, as a set-off against hiring-out, is a curious way of arranging the matter with his conscience. A reference to a certain portion of the Scriptures, which deals with an ox in a pit, might help him to a more equitable judgment.

The Yorkshire Automobile Club.

THE members of this club will hold a short run to Knaresborough to-day (Saturday). Leeds members will meet at the City Square at 2 p.m., and Bradford members at Mannington Park (Lister Monument), at the same hour. The two detachments are timed to meet at Pool Bridge at 3 p.m., whence the start for Knaresborough *via* Follyfoot will be made fifteen minutes later, arrangements for the return journey being made *en route*. The committee have heard of various cases of members not attending the runs because they thought that they would be outdistanced by the larger cars and cycles. They ask us to point out that this cannot occur, as stoppages are frequently made along the route, preferably outside towns and villages, to enable members to reassemble. It is hoped therefore that all who can possibly be present will endeavour to do so. Suggestions from members as to destination and route of any future Club runs will be cordially welcomed by the Committee.



M. DANNAT ON HIS 50 H.P. MERCEDES CAR.

Horses and "Diabolical Phenomena."

ALTHOUGH not particularly partial to the automobile, Sir Edmund Monson, our Ambassador to France, has rendered a service to owners of motor-cars by giving the results of his observations in Paris and in France. He calls motor-cars "monsters" which produce the impression of a "diabolical phenomenon," and justifies his superlatives by the glaring colours in which they are painted, the excruciating noise which they make, and the asphyxiating odour which they emit. And then he is observant enough and sufficiently fair minded to say that "neither my own horses nor those of any of my acquaintances have ever, as far as I know, had their equanimity disturbed by these offensive apparitions; and at this little seaside town (Houlgate, Calvados), where the proportion of motor-cars to the number of the inhabitants and visitors is even more striking than at Paris, and where the utmost recklessness, as I know to my

cost, is shown in driving them at express speed along the narrow streets, neither the saddle nor the carriage horses show any restiveness or alarm at their vagaries. My belief is, that as soon as the use of the motor-car becomes more general in England it will be found that horses will be as indifferent to them as they now are to the railway train." Seeing, therefore, that the shying of horses may be attributed to the nervousness of drivers, why attempt to obstruct the coming of the motor-car?

Against Furious Driving.

WHILE we always deplore harshness in dealing with motorists whose conviction depends on the unsupported evidence of a police constable, we, in common with all motorists who are concerned with the future of our pastime, equally deplore the folly of those drivers of automobiles who show no regard for the feelings of pedestrians and the nerves of passengers in horse-drawn vehicles. We expect ordinary good manners from every class of traffic on the road, and, to justify our expectation, must display similar sensibility ourselves. Such should be the attitude of motorists. Scorching along the public highway to the horror of nursemaids and the danger of elderly persons is to be condemned—whether in the case of cyclists, motorists, or horse-drivers. Some of our contemporaries delight in recording the cases of furious driving recorded against automobilists. Why do they not give similar attention to the hundreds of cases every week against drivers of ordinary traps and carts? We have become so accustomed to the latter that their frequency does not frighten; it is the novelty of the motor-car prosecution that gives its interest to the newspaper reader.

Automobile Sporting Club.

WITH the objects of the Automobile Sporting Club, which is being established at Burgos House, Sydenham Road, North Croydon, all motorists will agree, but is there not the fear that the title may create some confusion with the premier authority in Whitehall Court? The club is intended for automobilists and lovers of sport generally in the Croydon district, and the house stands in its own grounds, with stabling, cycle, and motor-car accommodation. Luncheons, dinners, etc., will be provided, and reception rooms provided for the convenience of lady visitors. The headquarters are near four railway stations, and within easy reach of Epsom, Sandown, Hurst Park, Gatwick, and Lingfield, so that its location should appeal strongly to sporting men. The club will be conducted on the proprietary system. The general committee includes His Highness Prince Aiyah, Captain Gerrard Buller, Colonel George Montagu Hicks, Viscomte d'Olivera, and the Hon. Charles Blake; while Mr. R. J. Cholmeley, B.A., is the secretary, to whom the annual subscription of one guinea should be sent.

The Stop-Watch

VARIOUS have been the means to which the police have resorted in their persistent and irritating efforts to secure convictions against motorists. From placing trunks in the road, to the use of field-glasses, telephones, and stop-watches there are many devices to be selected for adoption; and most of them commence with the assumption that the automobilist is a person to be proceeded against. Having that end in view, the police should have little difficulty in securing evidence. After toiling up a hill, the motorist may find a steep descent along a straight, unfrequented road, down which he goes at a rapid pace, pulling up when on a level road again. But half way down the hill a constable may have been lying in waiting with a stop-watch (as is used in the county of Surrey), and at the bottom of the hill is a brother officer. Subsequently, comparing notes and watches, it is easy to prove excessive speed with a resultant conviction. And the police pride themselves on their excellent intelligence. But is it justice?

Carriage Builders and Motor-Cars.

THIS is a subject that has been freely written about in our columns, and a recent reference in the *Coachbuilders' Journal* leads us to again recur to it. Our contemporary is urging those who have hitherto supplied vehicles intended to run behind horses to give heed to the requirements of the age, and not to allow the motor-car industry to jog along without their help. This is very good advice, and has been anticipated by the carriage builders of the United States, who were quick to realise the value of the automobile industry. Even within the last few months a great improvement is noticeable in the body-work of motor-cars, and only the other week did we refer to the altered appearance of the coachbuilders' parade—viz., Long Acre. Hence our contemporary is right in its advice to coachbuilders, the enterprising members of which trade should at once recognise the possibilities that are within their reach if they will run with the times—or, to be more correct, the automobile.

"Killed by a Motor-Car."

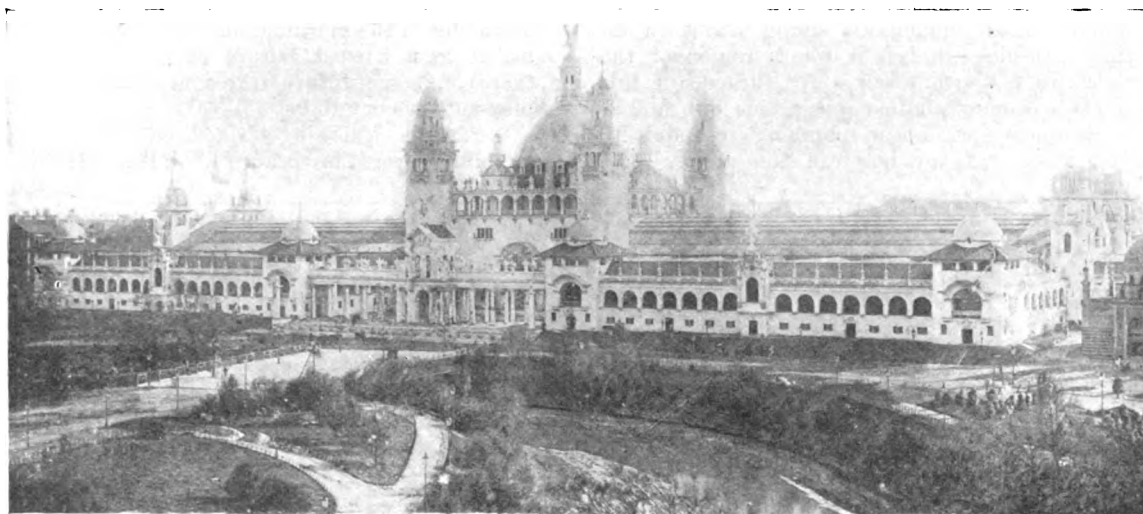
SUCH was the startling headline which caught our eyes in the *Islington Gazette* recently, and beneath it we read with distress the following:—"On Saturday information was forwarded to Dr. G. Danford Thomas, corner for Central London, of the death of John Waters, aged four years, who on Friday afternoon ran from the pavement at King's Cross directly in front of a motor-car, and before the driver could pull up the machine, was knocked down and received severe injuries. The child was picked up and taken to the Royal Free Hospital, Gray's Inn Road, where, on being examined by the resident medical officer, life was found to be extinct. An inquest will be held in due course." Naturally we watched with a sad interest for the details which the inquest might divulge, and read the following with a sigh of relief a week later:—"Mr. Walter Schroder held an inquest at the St. Pancras Coroner's Court with reference to the death of John Waters, aged four years. Evidence was given that deceased's mother left home, telling her elder son to put the deceased to bed. The boy took the deceased out, and being joined by another boy, the three went on a toy 'motor,' consisting of a straight board on four perambulator wheels. They went into Rosebery-avenue, and whilst descending a gradient the 'motor' collided with a van belonging to Messrs. Pickford and Company, and overturned. The hind wheel of the van passed over the deceased and the third boy. Deceased died soon after his admission into the hospital, from the effects of internal injuries, whilst the third boy was found to have received severe injuries to his arms. The Coroner said that he did not know these playthings were called motor-cars, but it was evident that they had adopted the latest fashionable term. The Jury returned a verdict of 'Accidental Death.'" There be motor-cars and motor-cars, and the enterprising news-hunter of the *Islington Gazette* should even without technical knowledge be able to discriminate between the egg-box on discarded perambulator wheels and the genuine article, presuming of course that he is a man of average intelligence. The motor-car proper has sufficient prejudice to contend with on its own account without being saddled with the sins of the home-made infanticide appliance.

MR. EDGAR SMITH, of 5, Broad Street, Halifax, has been appointed local agent for "Mayfair" voiturettes. Mr. Smith also keeps a stock of accessories, Carless Capel's petrol, greases, etc., and is opening works for the repair and storage of cars.

THE three gentlemen injured in the recent accident near Doncaster, Major Cradock, Captain Laycock, and Captain Wilson, are, we are pleased to say, making satisfactory progress. Captain Laycock has been out a little during the past week. The other gentlemen will not be able to go out for some considerable time. Major Cradock, who was by far the most seriously injured, is only progressing slowly, though he is as well as can be expected.

The Big Event of 1901.

THE GLASGOW RELIABILITY TRIALS.



GENERAL VIEW OF THE GLASGOW EXHIBITION.

EN ROUTE FOR SCOTLAND.

ON Tuesday last week, when we retired to rest, the prospect of motoring on the morrow seemed remote indeed—the rain was pouring in torrents and the forecasts were all against an immediate amendment in the state of the weather. However, on awakening the next morning, a cloudless sky was seen, and, by previous arrangement, our car arrived punctually at six o'clock. Fifteen minutes later we were all on board, and a start was made, *via* the Hampstead Road and Heath, for Barnet, which was reached at 7.5 a.m. The morning, albeit bright, was extremely raw and thus early the force of the wind was felt. Welwyn Church was reached at 7.50, Baldock at 8.33, and Biggleswade at 8.57. A stop was made at Dan Albone's for breakfast, and while waiting we had a run through our host's factory, which we found fully employed in the manufacture of motor-bicycles. These seem to have struck the popular fancy, for we learnt that the proprietor has a large number of orders on hand. The works are well adapted for those in need of repairs, and the facilities for recharging batteries are such as will commend themselves. At 10.15 another start was made, and a stiff head-wind soon made itself felt. The cold was extreme and, what with troublesome horses and frightened drivers, travelling was the reverse of pleasant. The sixty-fourth milestone from London was reached at 11.15, and the eighty-second milestone at 12.15 p.m., the wind in the open country around Wansford almost blowing the car to a standstill. At the ninety-sixth milestone, reached at 1.14 p.m., a stoppage was made to change batteries, the motor, which had not been "pulling" over grandly all the morning, having slowed considerably. At two o'clock we reached Grantham (110 miles), where a stoppage of fifteen minutes was made. At 3.15 we were 130 miles from London, and ultimately arrived at Retford at 4.5, where a stop for refreshments was made at the White Hart, an inn to be commended to all passing through that district. We left at 5.15 p.m., arriving at York at 8 o'clock. York we should imagine to be one of the worst lighted cities in the Kingdom, and it was with difficulty that the Station Hotel was found. The races being on, a private villa was recommended, whither we made our way. The place was certainly clean, but the charges for apartments (two rooms)—21s.—we certainly

considered extortionate. Stabling at the Windmill for the night cost 3s. 6d.

The morning was opened by our *mécanicien* (Budd) grinding in the exhaust valves, which were in a bad state, and by ourselves rambling round the old city, therefore it was not till between three and four o'clock in the afternoon that our journey to the north was continued. The day was lovely—a marked contrast to the previous one—and our route lay through Northallerton to Scots Corner, the road being good as well as pretty. At Scots Corner, which we had some difficulty in finding, the character of the roads changed into a long, narrow lane, switchback in conformation, and for miles neither habitation nor human being were seen. At Greta Bridge a halt was made, the beautiful meeting of the waters—Tees and Greta—being well worthy a visit. Beyond here is a long hill with a very steep portion, and on this the motor stopped. The sprag, fortunately, held, and, although for a moment things seemed uncomfortable, we were enabled, ultimately, to reach the top. Bowes, (279 miles from London) we had intended to be our stopping place for the night, and four miles from that bleak and inhospitable village—scene of "Dotheboys Hall"—the roads were simply a mass of ruts and stones. When we reached Bowes our hearts sank within us. There was only one inn, and that we would not stop at. The character of the cottages did not commend themselves any more than the appearance of the villagers. "Poor Smike" seemed reproduced in many a ragged urchin, and when the rain began to descend matters were felt to be in a desperate plight indeed. "What to do?" and "Where to sleep?" these were the questions. Darkening clouds were gathering and the pitiless rain was descending. For miles previous to entering Bowes, buildings forming what looked like a gigantic city had been seen, and from the frequency of the sign posts pointing to Barnard's Castle it seemed that must be the haven; so our car was turned, and, descending the hill, we saw a sign post—four miles to Barnard Castle. The car, after the attention to the valves, had been pulling better—forty-six miles in two hours—and so, after all, the four miles back did not worry us much, although the rain was pouring hard. As a matter of fact, the journey was all down hill—and such a hill! The time taken was phenomenal, and our hearts sank as we realised we should have to return by the same route in the

morning. One portion of the hill seemed almost vertical—it must have been about one in six. It looked steeper than the famous Porlock Hill. At the bottom of the hill was a bridge over a river, and at the corner an inn. A woman stood at the door, and as there was a right and left turning, neither seeming to lead anywhere, and the town being invisible, we inquired where it was. "I don't know," in the vernacular of the district, was the response. We did not like the look of the bridge, which was short, narrow, and rose to a point in the centre. We, however, risked it and immediately entered a dirty narrow street, with common lodging-houses on either side and half-naked inhabitants lying about in all sorts of disgusting attitudes—in fact it was a region of the most squalid poverty we had ever seen. At the end of this street we came to the bottom of another precipitous hill, and as there seemed no alternative we began climbing it, inquiring occasionally whether there was any hotel in the place. The people all being apparently deaf, the car was stopped and enquiry was made in a shop, when we were told, with a look of astonishment, that there was the "King's Head." This we made for, and although, as we were afterwards informed, it was the inn where Dickens had written "Nicholas Nickleby"—well, we never want to set foot in the town again.

Shortly after nine o'clock on Friday morning we made a fresh start, the rain still falling heavily. Our brakes had been specially looked to, and descending out of the town we turned into the narrow lane—there being only just room for the car to go through—crossed the bridge, and commenced the ascent to Bowes. We had not travelled far before the motor stopped. All had to alight, and ultimately ignominiously push the car up the hill—a most unpleasant task for ladies, with the rain pouring and the surface of the road thick with greasy mud. However, Bowes was again reached, and our journey—over the Skiddaw—to Brough continued. For thirteen miles the surface is about the worst in the kingdom, we should imagine. To call it a road is ridiculous. It is a grass track, and we felt it was considerate of the authorities to place stone posts for some miles to mark the track, otherwise wayfarers would be lost on the hills. The rain poured and drove, the hail descended and stung, the wind nearly blew our breath away; but still, after all, we did not mind it much. The car kept steadily on, and we were weather proof, thanks to Burberry's gabardines. Our journey for the day was a short one, and the rain could not keep on forever; as a matter of fact, it stopped just before entering Carlisle, a distance of forty-two miles. Here we stayed two hours, visiting the cathedral where Sir Walter Scott was married. The afternoon turned out lovely, so our wraps were laid aside and a most beautiful run was enjoyed.

At Gretna Green a halt was made at the post office for a paper, and we learnt that there was only one post a day, which arrived at 5.45 in the morning. The *M.C.J.* had consequently not arrived. Our next stoppage was at Ecclefechan, where a visit was paid to the shrine of Carlyle; after which we proceeded to Lockerbie, where we stayed the night. The "King's Arms" was the name of the inn, and we can assure our readers that the remembrance of that inn is as an oasis in the desert of our memory of swindling landlords. Our readers can safely stay there and rely upon securing such creature comforts as are most welcome to travellers in these little isles of ours. We deeply regretted departing in the morning, and trust that, if the Fates are kind to us, at least a week out of our brief existence will be spent there on some future occasion. The name of the place is a pleasant memory to us.

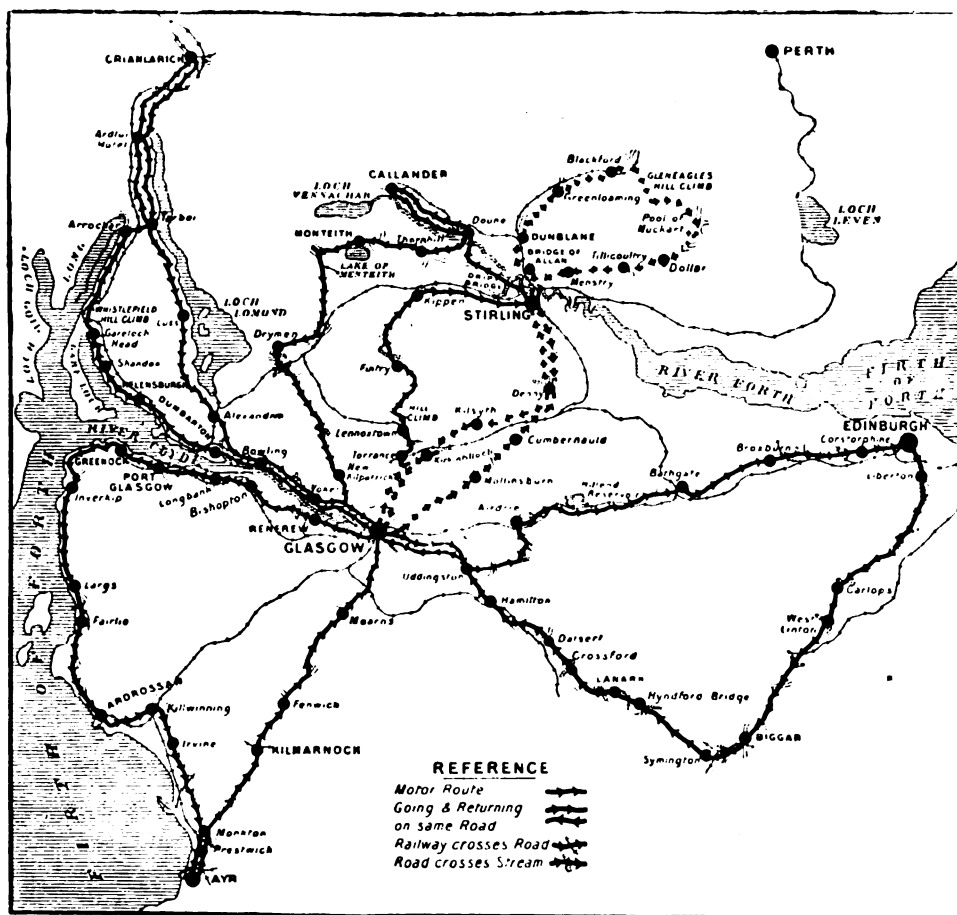
Saturday morning opened gloriously fine, and found us rambling over the beautiful hills. It was late when a start was made, and the crisp, invigorating atmosphere made our hearts glad within us. The car was pulling indifferently, but we made progress, and the ride over Beattock Summit and on to Abington, through continuous hills, was much enjoyed. At Lesmahagow—where quite a number of motorists on their way to Glasgow had strayed—we had luncheon, and afterwards proceeded to Glasgow, where we found that most of them had arrived.

IN GLASGOW.

Before dinner we proceeded to the garage in Kelvinhaugh Street, after having sampled our rooms, which were found according to arrangement. The accommodation is of a most ample description, the premises having formerly been a tram-car shed.

They are well lighted by electricity, and there is every facility for cleaning, etc. At the time of our visit there were forty-three cars in the shed, and the general attention of the visitors seemed to have been concentrated on two new Star cars, which had been entered at the last minute. During the afternoon the cars which are taking part in the trials were tried as to the efficiency of their brake power on a steep hill by Lieut. Col. Holden, Chief of the Ordnance Department at Woolwich. The tests took place in Hill Mansion Road, Langside, where they were made to run backwards down the steep incline and stop at a given signal. All stopped satisfactorily except a Serpollet steam car, which, owing to the accidental bursting of a tube, was withdrawn; and a light Daimler car in which, owing to the brake acting too suddenly and jamming the gear, the wheels were stripped.

On Sunday the garage presented an active scene—men and masters all being busy. The judges were also continuing their labours, while many of the competitors—the day being



MAP OF ROUTES.

gloriously fine—indulged in spins in various directions. The following "Notices" were placed on the board on Sunday:—

- No. 22. 8 h.p. Humber will not run.
- No. 21. 5 h.p. Humber will carry four instead of two persons.
- No. 32. Teras car will have only four seats, not six.
- No. 8. The second 10 h.p. Wolseley car is withdrawn.
- No. 34. The Progress car is withdrawn.
- No. 2. M. M. Co's. Light Carriage has affixed to it the New York Co.'s tires (P.5.), entered for trial.
- No. 31. Lanchester car withdrawn.
- No. 39. Hollanshire car withdrawn.
- No. 38. Stirling car withdrawn.
- No. 6. Light Daimler car withdrawn.

ANNOUNCEMENT BY THE JUDGES' COMMITTEE.

LATE ARRIVALS OF VEHICLES AT THE STORAGE BUILDING.

Rule 58 provides that competing vehicles should be at the Storage Building, Glasgow, on Friday morning, 30th August, at 10 a.m., and that, otherwise, they may be disqualified.

It will be seen from the list shown hereunder that (a) nineteen vehicles were in the Storage Buildings by 10 a.m. on Friday; (b) seven more vehicles were there by noon on Friday; (c) seven vehicles arrived between noon and 9 p.m. on Friday; (d) eight vehicles had not arrived at 8 a.m. on Saturday morning. It is known that competitors who complied with the regulations would have been glad of the opportunity of delaying, even for a few hours, the departure of their vehicles from their works and that these few hours might have enabled them to put their vehicles into more satisfactory condition than is at present the case. Competitors who delayed departure from their works at such a time as would have enabled them to comply with the regulations have thus an advantage over those competitors who adhered to the regulation. The Judge's Committee have the right to disqualify and forbid the running in the trials of vehicles which arrived in the storage building after ten a.m. on Friday. The Judges' Committee have decided not to make awards in respect of vehicles which arrived after twelve noon on Friday. The Judges' Committee are, however, prepared to consider any representation in writing that may be made by a competitor whose car did not arrive by that hour as to the non-responsibility of the competitor for the failure, but such representation, in addition to stating the cause of detention, must state at what time the car last left the competitor's premises before its arrival in Glasgow, and such statement must be verified.

Arrivals before or at timing, Friday, August 30th, at 10 a.m.:—Cars Nos. 5, 6, 7, 9, 10, 11, 12, 13, 14, 17, 18, 19, 20, 27, 28, 32, A5, A6.

Arrivals by noon on Friday:—Nos. 21, 23, 24, 26, 29, 30, 41.

Later arrivals on Friday:—4 p.m., No. 1; 9 p.m., No. 2; 4 p.m., No. 4; 12.30 p.m., No. 33; 5.40 p.m., No. 35; 6.0 p.m., No. 36; 6.30 p.m., No. A8.

Saturday, after 8 a.m.:—Nos. 3, 15, 25, 31, 37, 39 (withdrawn), 40, 42, 43.

In Section II., not entering for certificates:—A1 arrived at 11.30, p.m. Friday; A2 at 6 p.m.; A7 at 6.30 p.m.; A10 5.40 p.m.; A11 at 8 a.m.

Not arrived by 8 a.m. Saturday:—A3, A4, A9.

SECTION III.

P. 1.—The 12 h.p. Panhard to which Dunlop tires are affixed, had not arrived by 8 a.m. on Saturday.

P. 2.—The M.M.C. No. 3 had not arrived by 8 a.m. on Saturday.

P. 3.—Ignition being fitted on Friday to No. 7.

P. 4.—Ignition fitted to car No. 14, which was up to time.

P. 5.—Tires fitted to car No. 2, which arrived 9 p.m. Friday.

THE INAUGURAL DINNER.

IN connection with the trials an inaugural dinner was held in the Windsor Hotel, Glasgow, on Saturday evening. The Right Hon. Sir J. H. A. Macdonald, Lord Justice-Clerk of Scotland, occupied the chair, and Mr. Norman D. Macdonald, the Chairman of the Scottish Club, Mr. James R. Nisbet, and Mr. Robert J. Smith, C.A., officiated as croupiers. After dinner, the chairman proposed "The King." He said it was a great thing for those connected with the motor-car movement to know that the head of the State took an interest in it and enjoyed the sport. The chairman then gave "The Queen, Duke and Duchess of Cornwall and York, and other members of the Royal Family." He remarked that it was encouraging to those who favoured electric traction to know that the motor-car of the Queen was driven by electricity. He hoped that many ladies would follow her example.

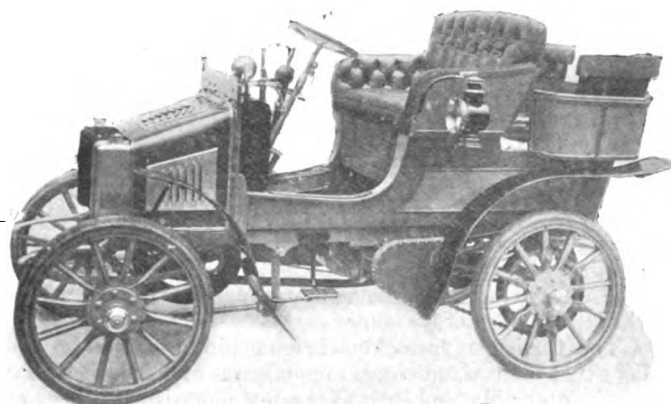
Mr. John H. Gretton proposed "The City of Glasgow," which was acknowledged by Bailie Cleland.

Ex-Bailie Simons proposed "The Trials, Exhibition, the Automobile Club of Great Britain and Ireland, and the Scottish

Automobile Club." With reference to the trials, he remarked that when Mr. Johnson, the secretary of the parent club, came to Glasgow, he naturally came to the speaker as the Chairman of the Sports Committee. It was clear to him that these automobile trials were a desirable thing to have, and that they should do everything possible to further this interesting work. That was the reason why, without any hesitation, the Sports Committee were at once able to arrange for these tests, which he hoped would be of great advantage, and be thoroughly subservient to the objects which the clubs had in view. They could not in this country have those exciting break-neck contests which had been held on the Continent. From a utilitarian aspect he believed the trials of speed and duration would be more conducive to the benefit of the movement than the more exciting ones. He coupled the "Exhibition" with the name of ex-Bailie Shearer, that of the "Automobile Club of Great Britain and Ireland" with Lieutenant-Colonel Holden, and that of the "Scottish Club" with Mr. Norman D. Macdonald.

Ex-Bailie Shearer said their object in the Exhibition was to spread abroad the knowledge of the position that Glasgow and the West of Scotland occupied in the manufacturing, engineering, and other enterprises; and he trusted that those who were interested would recognise that Glasgow was a splendid centre for the new and rising industry of the construction of motor-cars.

Lieutenant-Colonel Holden, in his reply, said that one of the speakers had referred to the growth of electric traction in Glasgow, but he would like to say that electric traction must not



THE PARR 5 H.P. CAR.

grow too fast or take up too much room, else little room would be left for the automobiles. With reference to the action of the War Office in this matter, he would like to say that the War Office had a difficulty in starting that sort of thing. A number of gentlemen came forward and offered their services and their cars to the War Office without any restriction if they would only try them; and several gentlemen had actually gone down to Aldershot with their cars, and had created a most favourable impression. They had started the interest of the military authorities in automobiles. That referred to passenger vehicles; but he was glad to say that the military authorities were about to interest themselves in heavier vehicles; and in that respect the recent trials at Liverpool had been of the greatest value. A committee which was sitting at the War Office attended these trials a few months ago, and, as possibly all knew, specifications were being formulated, and a prize was being offered for lorries mechanically driven, and he trusted that the manufacturers and inventors of this country devoting themselves to this work would be found at the head of every nation. As regarded the Glasgow trials, he believed the tests would do more to spread automobilism in Scotland than the previous trials at Richmond or the 1,000 mile Trial of last year.

Mr. Norman D. Macdonald, in replying for the Scottish Automobile Club, said he could not resist the temptation to give them a hint of what he proposed to say in a paper at the coming meeting of the British Association. He would point out that the citizens of Glasgow had just put down their electric trams at the

very time when it was beginning to dawn upon the public of this country that electric trams would have to be taken up. He was not saying one word against the efforts the Corporation had made in respect to electric traction, or the splendid results that had flowed therefrom; but what he meant was this, that the tram-cars were run on fixed rails in the middle of the streets, and that that was an absurd method of moving traffic. If the streets of Glasgow were filled with automobiles taking the traffic instead



THE M.M.C. VOITURETTE ON THE WEIGHING MACHINE.

of the cars, there would be a much larger traffic at a much greater speed and with more safety.

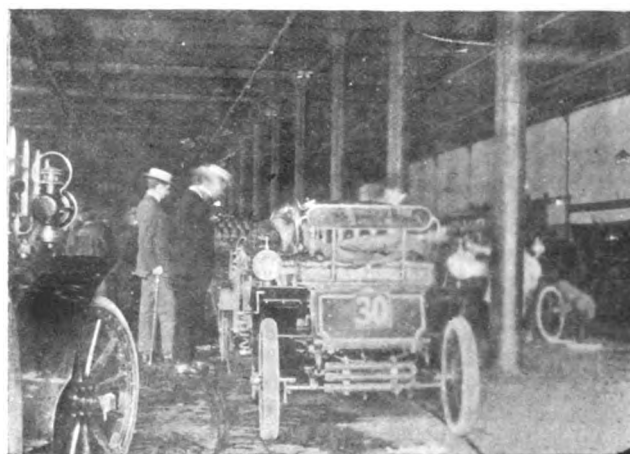
Mr. T. W. Staplee Firth gave "The Chairman," and spoke of the dogged way in which Lord Kingsburgh had stuck to his faith in the future of the motor car.

The Chairman, in acknowledging the toast, said he did not believe that in Scotland any automobile was ever driven at a rate of more than ten miles an hour. Very few motorists had been prosecuted, for, like canny Scotchmen, they only drove beyond the legal limit when there was nobody looking. (A laugh.) It was quite true in a sense, as had been said to him that day, that very fast running upon roads by cars built for very fast running improved the breed. But they would allow him to suggest that the place where they improve the breed of horses by racing was not upon the public roads. To improve the breed of horses had something to do with blood, but there was no blood whatever—nothing but petrol—in the inside of a motor-car. He would advise his young friends to have a little discretion. It was not wise, in the interests of automobilism, for some of them to tear along as they did—rolling and rumbling and making a fearful noise raising clouds of dust, so that nobody could follow them. Another thing that required to be considered was the want of good feeling that was shown to other people upon the road by some of the automobilists. He had made up his mind that if ever any case in connection with an automobile came up on appeal he should tell his colleagues that he should not sit upon that case. He could not give a righteous judgment, as he was almost sure he would go against the automobilist, as an extreme desire to be conscientious sometimes was the most misleading thing in this world. He would like to make a suggestion to those who were interested in the automobile industry. The people they had to please were not extreme sportsmen; they were the citizens of this country, and they must use all their efforts to produce that which would please the average citizen who did not wish to risk his life every day. If those who were deeply interested in this as a commercial speculation—because all these things had two sides, one a commercial and the other a social—kept these two things before them, he could assure them that in this country there was a vast future

before them. He was quite certain the day was coming when the large sums of money that had been going abroad for the past few years would no longer go there, but that the citizens of this country, when they came to take up automobiles—as they would do—would be able to build and turn out successfully motor-cars which would give satisfaction on the road to the drivers and also give satisfaction to the public who had no motor-cars. The chairman concluded by proposing the health of Mr. Johnson, the secretary, who replied. The company then separated.

THE FIRST DAY.

The first day's trial was from Glasgow to Edinburgh and back, a distance of 116½ miles. Among the forty-one carriages which left Finnieston on the stroke of eight o'clock on Monday morning could be found almost every type—voiturettes, light carriages, six-seated cars, a Century motor-tandem of light construction, wagonettes, and dogcarts. Elaborate and well-devised arrangements had been made for the run. Police were stationed at nearly every city crossing and at every hamlet, regulating the traffic and controlling the crowds that gathered everywhere along the route. No incident occurred in the town procession, the Scotch horses, contrary to the expectations of the English visitors, being in no way frightened. Many cars joined unofficially in the run. The Rt. Hon. Sir J. H. A. Macdonald, who is president of the Scottish Automobile Club, in his elegant Delahaye, travelled over the course. After passing through the city at a moderate pace, they drew up at the third milestone east of Glasgow, and thence proceeded on their way at minute intervals. During the run the order of procession was repeatedly altered, cars dropping out through tire punctures and other causes. All along the route the automobiles were regarded with wonder and, in many cases, with enthusiasm. Edinburgh was reached two hours twenty-eight minutes from the Glasgow control, the New Orleans (No. 16) making St. Andrew Square at 11.2 a.m., and most of the vehicles had lined up before 11.30. After luncheon at the Royal Hotel the automobilists proceeded on the return journey by Straiton, West Linton, Biggar, Lanark, and Hamilton, joining the outward track at Uddingston. On the moor country a fair rate of speed was maintained, notwithstanding the steep gradients. The famous Lanark brae offered an unequalled opportunity for testing the brake power of the machines. All came down the sudden turnings of the road with ease and safety. Seen from a distance it was a most extraordinary sight as the sun shone on



IN THE "GARAGE" IN KELVINHAUGH STREET, GLASGOW.

the long *queue* of cars that seemed to crawl like flies on the spaces of the inclines. At Lanark and Hamilton the streets on either side were lined with spectators. First to arrive at the milestone which marked the Glasgow control was the 9 h.p. Napier car, driven by Mr. C. Edge. The Hon. C. S. Rolls's 16 h.p. Panhard's machine, however, was first to arrive at the Exhibition, passing Queen's Gate at 4.57 p.m.

Other cars were in hot pursuit, and formed into line as they arrived. At half-past eight there was only one vehicle to come in, and an hour later the muster was complete. With lamps blazing strongly and having on board many ladies, the cars paraded through the Exhibition grounds, and so successfully ended the first day of the trials. The M.M.C. voiturette No. 1 (single cylinder voiturette) on Monday carried Mr. Shrapnell Smith as observer, and had as passengers a representative of *The Glasgow Herald* and a mechanic. The runs, both out and home were absolutely non-stop and close to the official minimum times. The car led the procession from the Tramway Stables to the outward control in Glasgow, and reached Edinburgh seventh. The "Auto-sparker" was not tested this day. The marks for the run were awarded as follow:—

SECTION 1—MANUFACTURERS' VEHICLES.

Class A.—No. 1, Motor Manufacturing Company's 6 h.p. voiturette; No. 16, New Orleans 7 h.p.; No. 28, Hozier Engineering Company's Argyll voiturette; No. 30, De Dion-Bouton 4½ h.p. voiturette—300 each; No. 9, Wolseley Tool and Motor-car Company's 5 h.p. Wolseley—298; No. 12, Roadway Autocar Company's 4½ h.p. Renault; No. 37, Stirling's Motor Carriage Company's 4½ h.p. Stirling Parisian phaeton—295 each; No. 33, Century tandem—280; No. 20, Locomobile steam car—253; No. 29, Parr and Co.'s 5 h.p. carriage—251.

Class B.—No. 2, Motor Manufacturing Company's 6 h.p. two-cylinder light carriage; No. 5, Daimler Motor Company's 6 h.p. light car; No. 36, Mo-Car Syndicate's 7 h.p. Arrol-Johnston dogcart—300 each. No. 41, Enfield Cycle Company's 6 h.p. Royal Enfield—299; No. 11, Roadway Autocar Company's 6 h.p. Mors—288.

Class C.—No. 3, Motor Manufacturing Company's six-seated car; No. 18, Auto-Carriage Company's 10 h.p. Bardon; No. 35, Mo-Car Syndicate's 8 h.p. Arrol-Johnston six-seated car—300 each; No. 26, Panhard and Levassor's 7 h.p. light Panhard—287.

Class D. No. 13, Roadway Autocar Company's 10 h.p. Mors; No. 14, Geo. F. Milnes and Co.'s C.P.C. car; No. 23, Motor Power Company's 9 h.p. Napier—300 each; No. 32, W. T. and S. E. Botwood's 14 h.p. "Teras" (Gobron-Brillié)—293; No. 7, Daimler Motor Company's 18 h.p. Daimler—292.

SECTION 2.—PRIVATELY-OWNED VEHICLES.

No. 3, 16 h.p. Panhard, owned by the Hon. C. S. Rolls; No. 7, 12 h.p. Daimler, owned by Mr. J. D. Siddeley; No. 8, 7 h.p. light Panhard, owned by Mr. Harvey Du Cros, jun.; No. 11, 7 h.p. New Orleans Company's, owned by Mr. William Exe—300 each; No. 10, Arrol-Johnston, owned by Mr. R. A. Whytlaw, jun.—285; 7½ h.p. Albion car, owned by Mr. Walter Creber—284.

Appended are accounts of the performances of several of the cars, prepared either by the observers or passengers on the same.

ON THE M.M. CO.'S CAR, "No. 3."

A bright and glorious morning, with just the degree of mist hovering round, which in Scotland at this time of the year gives promise of a fine day, and an ideal day it turned out, though the motorists would have preferred less dust in some parts of the route. The first cars to move away from the storage premises were within a minute from the official time of departure; unfortunately, the car on which I was placed had only arrived from the works late on the previous night by train and had not previously been run, so what with making minor adjustments, filling up with petrol, and waiting for a late passenger, it was 8.10 a.m., or ten minutes late, before we got away, and but few cars remained behind. Our car carried six in all, and though of but 7 h.p., very soon showed signs of a capacity for moving which promised to make up such of the lost time as the regulations permitted.

On the journey to the outward control nothing of interest was observed; the Glasgow "setts," or paving-stones, are proverbially bad, and on our car being shod with solid tires, and heavily laden, we felt the effect somewhat. Five late starters drew up at the control two minutes after we arrived, and in leaving the control we had Mr. Rolls' 16 h.p. Panhard (A3) as our

pilot. From Glasgow to Holytown (9½ miles), on a choppy road, nothing more important than a little passing and repassing occurred. The first car we passed was Mr. Burns' 6 h.p. Daimler wagonette (A5), swerving badly, then one of the late entry Stars. Just after taking the turn for Holytown, Mr. Manville's 12 h.p. Daimler (A9), in company with another Daimler, was observed to be in trouble, apparently from the circulation pump. Two miles further we overtook the 5 h.p. Humber (No. 21), going very slow, and very soon after this found the 18 h.p. Daimler (No. 7), entered by the Daimler Company, pulled up for repairs evidently connected with the tires. Then in turn we passed an Albion car (A6), and the British and Foreign electrical car (No. 40), which was stopped for some reason or other. The next car overtaken was the 6 h.p. Mors (No. 11), following close on which both the Locomobiles (Nos. 19 and 20) were pulled up together for water.

Yet two more cars were destined to fall behind us ere Bathgate was reached, these being the two Arrol-Johnston cars of 7 and 8 h.p. respectively (Nos. 35 and 36). The only companions we had on this stretch were Mr. Exe's New Orleans (A11) and the Star, both of which kept pace for a considerable distance.

Between Bathgate and Edinburgh (16½ miles) we first caught up with the Royal Enfield voiturette (No. 41), and immediately after came across one of the three Wolseleys involved in tire complications. The next car passed was 4½ h.p. Stirling (No. 37), which had been in sight some time and was going very well. At the Edinburgh control our own car was close on minimum time, our nearest attendants being the Star, Enfield, and Stirling, all three cars having gone well for some time. The bulk of the first arrivals were away from Edinburgh at the earliest moment possible after the expiration of luncheon time, our car being somewhat late in starting. But little of interest occurred for some time, though we passed a few of the smaller powered cars. After the climb out of Edinburgh the view was magnificent, and the roads continued to improve to the next stage at Biggar, twenty-eight miles from Edinburgh control.

Biggar to Lanark and thence to Hamilton (twenty-four miles) proved the tit-bit of the run in the way of scenery and diversity of view. The road is undulating but smooth, with some steep hills, notably the one after Lanark. Beyond passing a 7 h.p. light Panhard with inner tube of tire out, a 7 h.p. New Orleans, also stopped on account of tires, and a Renault car stopped for some other reason, we saw nothing of any others. The rest of the journey was uneventful, no car being sighted except the M.M.C. voiturette (No. 1) as we passed through Hamilton. At the inward control to Glasgow, and near to the Exhibition, however, the New Orleans and the M.M.C. (No. 1) caught us, through traffic obstruction, and we entered the Exhibition grounds together.

The M.M.Co.'s car on which I travelled made no stop but the compulsory one at Edinburgh and at the controls until we got blocked with traffic in Glasgow on the return journey. Although the vibration from the solid tires was at times unpleasant, the running of the car was an unqualified success by reason of the fact that it did all asked of it, and, whilst fulfilling the Club's conditions, took its load of six persons from place to place without fault or failure in accordance to order.

T. H. H.

ON THE "C.P.C." CAR.

I was somewhat late in my application for a seat for the week's drives, but I thought that chance had favoured me more than I deserved when I saw to what cars I had been allotted on the various days. On Monday I was accommodated upon one of the Marienfelde cars of Messrs. Milnes and Co. As I had seen it, and several like it, before the coachwork was added, and had therefore had an opportunity of examining the construction of usually hidden parts, I was much interested in seeing how it turned out. The difficulty of writing any account of the day's experiences is that there were no incidents of a mechanical nature, and that the programme arranged by the Club admitted nothing more than a cursory view of the country traversed. We were among the last to get off in the morning, owing to our position in the stables. However, the engine started up

with a couple of turns of the handle, and ran all through as well as she started. She proved herself quick in picking up after a stop; the magnetic ignition was efficient, so was the cooling, although the slight leak which I noticed might become a nuisance with so little water carried. The speed-changing seemed a bit difficult at times, and the second gear was not so silent as the others. So much for the car. The road in the outward direction seemed to me considerably more bumpy than I remember its being years ago, but that was from the cyclist's point of view, and I believe that the automobilist is more dependent upon the quality of his road than the cyclist, though the contrary might be supposed. It is difficult not to compare Edinburgh with Glasgow, when one sees them both in one morning. Nature has, of course, done very much for the eastern city, but I do think man has done almost his worst for the western.

We had a tire down soon after starting after lunch. We were not going particularly fast, but internal warmth loosened an old patch. French chalk, as an observer reminded us, keeps tubes from heating as well as from sticking; only you must have plenty of it, as much as the cover will hold when the tube is in place. The observer said the rule was that no passenger might lend a hand; I thought it a very beneficent rule myself at the time. However, our friends got a new tube in without any difficulty. After that we did not halt till we reached the Exhibition grounds. We managed the Lanark hill all right—it is certainly a nasty one. Most of the cars appeared to be going faster in the stage following this than at any previous point, owing, perhaps, to two or three of the more powerful machines happening to get together at this point. The road was on the descent and very tortuous, and the clouds of dust impenetrable. It made quite an exciting bit. One can't have everything, but it seemed a pity to go past the Falls of Clyde and Hamilton Palace without stopping. Throughout the run people were most kindly, and greeted the cars as they went by. The police did their duty with the best of humour. One constable who was taking numbers and notes told me it was done for the use of the press.

ARUNDEL WHATTON.

MR. MANVILLE'S 12 H.P. DAIMLER (A9).

Mr. and Mrs. Manville and a servant arrived on their 12 h.p. Daimler at Glasgow on Saturday afternoon, after having had a run of about 800 miles, an experience which Mrs. Manville described as embracing some of the finest scenery in England, Scotland, and Wales. Notwithstanding this long journey and the short time which elapsed between their arrival and the commencement of the trials, Mr. and Mrs. Manville were all ready for the first day's run, and were amongst the first arrivals at the official starting place. Mr. Staplee Firth was the judges' observer on this car for this particular day. The car arrived at the outward control at Glasgow in the ordinary course, but before the first twenty miles had been reached there were unmistakable signs of trouble. The engines had become so hot that the outer covering of one of the sparking plug wires fired. A stop was inevitable. The mischief was difficult to discover, and the difficulty was increased by several friends who were experts giving advice which proved to be incorrect. It had been discovered at an early part of the investigation—as is evident from the foregoing—that the water circulation was defective. Ultimately Mr. Manville, acting on his own impulse, attacked the pump, and it was found that the small set pin which holds the bottom valve in the pump in position had disappeared. The result was that the water was draining away at the lowest point, and that the dislocation of the valve made it impossible for the water to circulate. The pump was detached, and a search was made for anything in the shape of an engineer's shop, but the best apology for one that could be found was the village blacksmith, by whose help a small shouldered pin was shaped from a rough piece of iron. The pump was replaced, and very soon the car was speeding on its way to Edinburgh, a distance of some thirty-eight miles, after a delay of 2½ hours. We understand that the performance of the car throughout Monday's run, with the exception of the mischief caused by a single piece of defective iron, was highly satisfactory, and gave great pleasure to its occupants.

ON THE 7 H.P. LIGHT PANHARD, No. 26.

On Monday I was acting as observer on the 7 h.p. light Panhard, which was driven by Mr. C. Jarrott. Having made my way to the stable and found the car, we took our place in the procession, and left for the Outward Control. During the run through the traffic Mr. Jarrott showed how perfectly this car can be managed, as in a procession of motor-vehicles, keeping close together and considering the space taken up by the electric trams, the car has to be under perfect control. Or if the car in front has to pull up suddenly you are into it without the slightest warning. The car in front ran into the back of the one before that, and our car was pulled up immediately. The points in the car which struck me most were the magnificent brake power, a test of which we had on Lanark Hill, the swiftness of running such a light car with so powerful an engine, and the hill-climbing powers. In the course of our run we had only one trouble with the motor, the pipe to supply petrol to the carburettor getting stopped up; this was remedied in a very short time, and our other stop was caused by a puncture.

ON THE 9 H.P. NAPIER, No. 23.

This car, the production of the well-known firm of Messrs. D. Napier and Sons, of Lambeth, is generally of their standard design, developing 11½ h.p. on the brake. There are, however, a few detail improvements over those previously turned out, the principal one being that of governing the engine by throttling the mixture and obtaining an impulse every cycle instead of reducing the number of impulses as originally. The gearing is also an improvement on earlier designs, in that one lever suffices for the four speeds forward and one reverse. The car had of course no opportunity of showing its true form until well outside the Glasgow control, but after waiting eight minutes at this point for other cars to start at regular intervals, immediately settled down to its work at a steady pace fully up to the legal limit. The villages through which we passed appeared in all cases to be holiday making, the streets being lined on both sides; between which a passage was excellently kept by the local police, who heartily entered into the spirit of the trials and rendered all assistance in their power. The latter appeared to be in all cases provided with bicycles, so that one has to be careful of speed in these parts.

Our car was now beginning to exhibit its superior qualities by the methodical way in which it gradually forged ahead, and rapidly bettered its position in the procession, as after a most enjoyable but uneventful non-stop run we eventually ran into Edinburgh third, thus having bettered our position by about nine places. We here took up our position in St. Andrew's Square, where the cars were critically inspected by many enthusiasts, and it was a matter of some difficulty to get to one's car when the time came for our return journey. The attention required during the luncheon interval consisted solely in lubrication and a little water for cooling. We started out at 12.45 after lunch in the same position in the queue of cars as we had entered the inward control, and were ably directed to the outward control by the police, who kept an excellent course. After reaching the outskirts of the city our pace was again regular, and the two cars which started in front of us were soon passed. We were now travelling in fine style through most beautiful scenery, the sun shining on the heather-covered mountains in the background, giving an exceptionally fine effect. The roads throughout were very hard and smooth, but unfortunately a little dry, thus causing considerable dust.

Judging by the experiences of others, the roads must have been very plentifully strewn with nails and other enemies to tires, but we were exceptionally fortunate in getting right through without troubles of this description. Sundry cattle and sheep were met with which did not appear to relish our approach and necessitated a few "slows" to enable them to get off the road. After examining our brakes and successfully negotiating the corkscrew hill into Lanark, we followed the Clyde for some miles, country mansions dotted about on its banks adding considerably to its beauty. The run home into Glasgow was as

enjoyable and successful as the outward trip, and we finally ran into the Exhibition grounds, after having secured premier place, without any adjustment of the smallest description being necessary, the latter reflecting much credit on the makers, considering that the car had only run 100 miles before the trials.

R. H. S.

THE SECOND DAY.

There was little wind, the dust was not troublesome, and the rain which threatened in the morning kept off all day. The days programme was a run to Ayr and back, via Renfrew, Port-Glasgow, Stevanston, and Monckton. Although differently composed, the procession, which left Kelvinhaugh Street at eight on Tuesday morning, again numbered forty-one vehicles. There was a larger proportion of ladies among the travellers than on the previous day. The Glasgow control ended at the Govan tramway terminus, and here the cars pulled up. Three of them had already damaged their chances by involuntary stops within the first few miles. Control was cleared about nine o'clock. Full advantage was taken of long, smooth tracts in this district, and here the speed limit was at once touched by most of the cars. The Inchinnan Bridge over the river Cart was safely negotiated, and soon the head of the procession was more seriously tried by the narrow, awkward streets of Port-Glasgow. Punctures were more plentiful on this route, and several cars were in difficulties between here and Largs. First to pass into the Ayr control was the Hon. C. S. Rolls's 16 h.p. Panhard, which crossed the bridge at 12.18, closely followed by other cars, the last arriving about half-past two. The breakdown of two vehicles was reported here, and those in charge of the powerful 18 h.p. Daimler were stated to have been forced to seek assistance owing to a tube defect. Many fine performances were recorded on the uphill run to Fenwick, and once on the smooth down track every car was put on the full speed permitted by the rules. The Hon. Mr. Rolls's Panhard maintained its advantage, and first reached the Glasgow control. Two minutes later P. 1, a 12 h.p. Panhard car entered by the Dunlop Company for tire trials, came in. Unfortunately, Mr. Rolls's car broke down in the street and could not be driven further, so the honour of first entering the Exhibition lay with the Panhard car. At 8.15 thirty-seven vehicles were in the grounds. Good performances were plentiful. In the section composed of cars declared at a selling price of more than £500 four out of the five machines entered earned full marks.

The marks for the day's run were awarded as follows:—
Section I.—Manufacturers' vehicles—Class A.—No. 12, Roadway Autocar Company's 4½ h.p. Renault; No. 16, 7 h.p. New Orleans; No. 28, Hozier Engineering Company's Argyle voiturette; No. 30, 4½ h.p. De Dion voiturette; No. 37, 4½ h.p. Stirling Parisian phaeton—300 each. No. 1, Motor Manufacturing Company's 6 h.p. voiturette; and No. 27, Motor Car Company's 5 h.p. Decauville voiturette—297 each. No. 9, 5 h.p. Wolseley, 294; No. 19, Locomobile steam car, 278; No. 20, Locomobile steam car, 265; No. 33, Century tandem, 260; No. 24, Clarkson and Capel 5 h.p. light steam carriage, 258.

Class B.—No. 11, Roadway Autocar Company's 6 h.p. Mors, 297; No. 36, 7 h.p. Arrol-Johnston dog-cart, 292.

Class C.—No. 2, Motor Manufacturing Company's 6 h.p. two-cylindrical light carriage; No. 10, 10 h.p. Wolseley; No. 35, 8 h.p. Arrol-Johnston 6-seated car—300 each. No. 26, 7 h.p. light Panhard, 297; No. 3, Motor Manufacturing Company's 6-seated car, 293; No. 18, Auto-Carriage Company's 10 h.p. Bardon, 275.

Class D.—No. 13, Roadway Autocar Company's 10 h.p. Mors; No. 14, George F. Milnes and Co.'s C.P.C. car; No. 15, the same manufacturers' C.P.C. car; No. 23, 9 h.p. Napier—300 each; 18 h.p. Daimler—133.

Class F.—No. 4, Motor Manufacturing Company's 1-ton van, 6 h.p., 107½ miles in 9½ hours.

Class G.—No. 40, British and Foreign Electrical Vehicle Company's car, 69 miles on one charge, with no stop.

SECTION II.—PRIVATELY OWNED VEHICLES.

No. A 5, No. A 6, No. A 7, No. A 8—300 each; No. A 11, 7 h.p. New Orleans—297.

SECTION III.—PARTS OF MOTOR-VEHICLES ENTERED BY MANUFACTURERS.

No. 1, Class B (tires), Dunlop Pneumatic Tyre Company's set of Dunlop tires affixed to a 12 h.p. Panhard car; No. 5, New York Tyre Company, a set of tires affixed to an M.M. Company's voiturette—300 each; No. 4, Class G (ignition devices), Simms-Bosch magneto-electric ignition and interrupting timing gear, entered by the Simms Manufacturing Company, affixed to vehicles 14 and 15—300.

ON THE "C.P.C." CAR.

The route to-day was over one of the finest stretches in the country, embracing delightful scenery and well-nigh perfect road surface for the bulk of the journey. In consequence of the compulsory retirement of some of the vehicles some little difficulty was experienced in rearranging seats, and a few late comers were unable to find a "mount." The Humber voiturette on which I was to have travelled was unable to start through some slight trouble, and at the last moment I was offered a seat on one of the two Geo. F. Milnes Company's C.P.C. cars, two of which were running in the trials; and in this I was particularly fortunate, for I found myself on one of the finest and fastest cars engaged. The start was a punctual one, and we left the storage building about tenth in order of procession. The first thing to be noted was the difference in running over the Glasgow paving when mounted on pneumatic tires as compared to the solids of the day before, and the outward control to-day was a fairly long one—five and a quarter miles. Proceeding through Renfrew and Bishopton, and so on to Greenock and Gourrock, the road offering no opportunities for "getting away," chief interest was centered in the mingled wonder and enthusiasm of the dense crowds of spectators lining the streets, particularly at Greenock, for the men were just returning from breakfast. After getting clear of the trams at Gourrock (27½ miles from start), the open country was reached, and a glorious panorama was unfolded with every bend in the road. The Clyde-side resorts at the opposite side of the water stood out clearly, and Ben Lomond in the background was now visible, but the morning was distinctly dull with promise of rain. Great enthusiasm on the part of the people continued to be displayed all along the road through Wemyss Bay, Fairlie, and other Clyde-side resorts, and up to Kilwinning nothing of any importance had come under observation.

The section D to E on the programme, from Gourrock to Ayr control, (40½ miles), offered fine opportunities for scorching, practically the whole of this distance being a smooth, well-kept road, with lovely views on the right. On leaving Gourrock we passed a cluster of small voiturettes all going fairly well, and soon after overtook one of the Daimlers with Mr. Critchley on board, going very badly, while further on the Motor Manufacturing Company's voiturette was seen pulled up for repairs. Meanwhile our own car was behaving grandly, the engine working with that peculiar, smooth, humming sound which denotes perfection of working, and on the top speed the silence of the car was remarkable, practically nothing of the exhaust being heard, and whenever our "official observer" gave us permission to "go on" it was clear that the car could answer. Indeed, with respect to most of the cars as well as the one I was on, it was a case on this journey of being held back by legal restrictions and the Automobile Club's regulations for the trial; in fact, the cars which escaped misfortune were controlled to run on time to a nicety, our own car completing the various timing sections with greater regularity than most express trains, for it was seldom we were more than half a minute away from official time. On the 40½-mile run from Gourrock to Ayr control the pace of the car was regulated to such a nicety that at each half hour the required milestone was in sight, and at the end of this non-stop run the watches showed us as ten seconds away from time. The only cars in trouble which were passed by us on this stretch were Mr. Cordingley's 10-h.p. Napier and the Royal Enfield voiturette; Mr. Harvey du Cros's Panhard was also stopped, though nothing in the way of repairs seemed to be going on.

The arrival at Ayr was very uniform as far as the "first flight" cars were concerned, but the long forty-mile run had eliminated many of the under-powered smaller vehicles, and after making a stay of over an hour at Ayr for luncheon, we met several of these only just arriving, the following amongst others: Mr. Exe's New Orleans, which had run so well on Monday; the two Arrol-Johnston motor-cars; a Locomobile; the Century tandem; and the smaller Bardon. The run back was uneventful so far as our immediate surroundings were concerned, our nearest attendants being the De Dion voiturette and the little Stirling, which had done so well on the first day. The order of arrival at the Exhibition should have made our car third in rank, but the actual order of the cars as drawn up for inspection placed the three Panhards first. At 3.50 a cluster of six cars arrived, after which there was a long interval, and some fifteen were very late for some reason or other. T. H. H.

ON THE "POWERFUL" ELECTRIC-CAR.

On the first day of the trials, namely, Monday, the car ran to Edinburgh, where the battery was charged for four hours at the Heriot-Watt College, by the courtesy of Professor Francis E. Baily, and returned to Glasgow in the evening, doing a total of 100 miles or more. On Tuesday, at a distance of about thirty-five miles along the route, the driver declared his intention of returning to Glasgow, and the car reached the Exhibition at 4.15 p.m., having covered seventy miles at an average speed of twelve miles an hour throughout the journey. The voiturette at the start on Tuesday registered 104 volts, and at the finish 96.

THE THIRD DAY.

Wednesday's run was to Callander and back *via* Torrance, Fintry, and Thornhill—a distance of 99½ miles. The route was a hilly one, and advantage was taken of this to hold a hill-climbing competition up Fintry Hill—a rise of 843 feet in three miles, equal to an average gradient of 1 in 19.1. Thirty-four cars started from Glasgow, the morning being cold, with some rain. The hill-climb was taken by the majority of vehicles in good style. A stop was made at Callander for lunch, and in the afternoon the weather improved. The first car got back to the Exhibition at Glasgow at a quarter past three, while the others were all in by half past six. Notwithstanding bad roads, the day's results were very satisfactory.

THE OSTEND RACE MEETING.

(From Our Own Correspondent.)

OSTEND, Monday, 9.30 p.m.

AUTOMOBILES are not very much *en evidence* here," was our reflection at the end of last week, and the villainous *pace* which forms so much of the available highway in Belgium seemed enough to account for it, though we were rather surprised at so few cars being visible. But the last day or two has altered the state of affairs, and many of the competitors and their friends have already arrived, though the foreign contingent are yet to come, many being probably still on their way from Deauville. While looking out for the arrivals at Sluyter's garage (with many false alarms owing to the habit of carrying horns being prevalent with rubber-tired carriages, to say nothing of cyclists and the numerous steam trams) the unmistakable sound of the exhaust announced the arrival of a racer, which proved to be M. Brulé's Mercedes, with a broken *chassis* due to the rough roads. Jenatzky had already arrived, but no news was to hand of M. Serpollet, who had started, with Mme. Serpollet, for Ostend by road after his success at Deauville, and much interest was expressed in the chances of Messrs Mayhew and Edge putting in an appearance.

A visit to the track on Sunday, when it was the scene of some trotting races, did not suggest the prospect of records being broken, it being of grass, and though 2½ kilomètres in circumference, somewhat sharply curved for automobile speeds. Being inclosed, however, there is no likelihood of sport being spoilt, as at Deauville, by the encroachment of spectators on the course. Rivierre is also among the arrivals, and another victim of the bad roads, the frame of his Mors having broken in somewhat the same manner as Brulé's, necessitating a patch up, by the way, with wooden blocks. M. Sluyter's surmise that the state of the high-

ways might account for many of the absentees may prove only too correct; it is, however, consoling to learn that a sum of five million francs has been voted for their improvement, though the results cannot be expected for a couple of years.

Tuesday, 8 p.m.

The weather, which had been doubtfully inclined, proved propitious for to-day's races, though a fresh north-east breeze, blowing down the 1,000-mètre straight, was evidently felt by the lighter cars. A large attendance showed the interest taken in the events, and the paddock was filled with a fashionable crowd, the greatest interest, in the lamented absence of the Napiers, being perhaps aroused by Truffault's curious 12 h.p. voiturette, a vehicle resembling the Pennington war chariot more than anything, with its front wheels in forks, and the driver's seat consisting of a pneumatic cushion on a bracket at the extreme rear, the intermediate frame, with two-cylinder engine in the centre, being a complex framework of tubes, with no trace of carriage-work about it. It proved, however, out of the running against the more legitimate voiturettes, being no doubt handicapped by the roughness of the turf, which must have been a severe ordeal to all the vehicles concerned. The first event, a cycle race of 16 kilos. 200 m. (six laps), was a ding-dong struggle between Gasté and Demester, won by the former in 16 min. 3.5 sec., by 15 sec. from the latter, followed—*longo intervallo*—by Bucquet on a Werner bicycle, two local men who also started having fallen out at an early stage. The next, a race of 27 kilos. (10 laps), for cars under 650 kilos., brought out a large field, including Ribeyrolles (20 h.p.), Baras (20 h.p.), Théry (16 h.p. Decauville), Page (16 h.p.), Olliver (6 h.p. Serpollet), S. Luc (De Dion voiturette), Jules Fischer (12 h.p. Vivinus), Truffault (12 h.p.), Darracq (12 h.p. Darracq), Deschamps (12 h.p. Deschamps), L. Nannarf (5 h.p. Fabrique Nationale), Sluyters (ditto), Debueger (4½ h.p.), France (6 h.p. Mors), Houzoul (3½ h.p. Pieper), De Beukelaere (5 h.p. Fabrique Nationale), and Demester. Owing to the large number of competitors this was run in heats, the winners being—first heat—Darracq, Olliver, and Nannarf; much cheering being elicited by the steady plodding of the latter's 5 h.p. car, which secured third place against many of the flyers that were put *hors de combat* by the rough course. Second heat—Deschamps, Page, Fischer, Demester. The final was a good race between Darracq and Deschamps, won by the former in 26 min. 57 sec. In the race for cars over 650 kilos. (distance 40½ kilomètres, 15 laps), M. Serpollet (12 h.p.), D'Aubrey (12 h.p. Pieper), Baron de T'Serclaes (Bolidé), Baron de Crawhez (20 h.p. Panhard), A. Brull ("Naughty Girl" Daimler (sic), which proved to be a Mercedes), and Baron de Caters (24 h.p. Mors), were the competitors. Serpollet was slow in getting off, while Crawhez and De Caters, with Brull, started at a good pace. After several laps De Caters got the lead, and kept it till the finish; while the Bolidé succeeded in passing Crawhez, and the "Naughty Girl" had to stop a lap from home with valve trouble. The final times were:—De Caters, 45 min. 13.5 sec.; de T'Serclaes, 49 min. 13.2.5 sec.; and De Crawhez, 56 min. 43.3.5 sec.

De Crawhez had been delayed by a stoppage at the tenth lap, while Serpollet had to fall out at the fourteenth lap, after one or two stoppages and re-starts.

WHILE Mr. Anderson and party were motoring in Ayrshire near the foot of Dalvennan Brae one of the steering wheels came in contact with a loose stone, which caused the car to swerve and take the steering handle out of Mr. Anderson's hand, with the result that the car was upset and the occupants thrown on the road. One of the ladies had her arm fractured, and the other occupants were more or less bruised. No damage was done to the car.

THE United Motor Industries, Limited, understand that a firm in Yorkshire are selling a lubricating oil in bulk purporting to be "D" lubricating oil. They ask us to warn motorists against buying any oil in bulk under the name of "D" lubricating oil as genuine. "D" lubricating oil as sold by them is supplied to the public and to agents in tins only, containing one litre, two litres, and five litres respectively, and bearing the name and London address of the firm.

CONTINENTAL NOTES.

BY "AUTOMAN."

THE question of a motodrome still agitates the minds of Parisian automobilists, and longing eyes have been cast upon one of the race courses, which, amongst other advantages, possesses the essential of being close to the gates of the Capitol. The realisation of the project depends entirely upon the willingness of the owner of the chosen site to come to terms with the promoters of the scheme.

M. TAUPAT, who since severing his connection with the Dietrich company has been in charge of a mission to the French Soudan, with the object of establishing an automobile transport in that country, writes from Madagascar, where he is as enthusiastic an automobilist as ever. There is already a strong automobile movement in the island, there being at present fourteen motor-cars, five motor-tricycles and quads, and two motor-bicycles.

MILITARY automobilism is the order of the day, even in Switzerland. In the general orders for the autumn manoeuvres, August 4th to September 20th, instructions are given for the employment of five cars. Three of these are detailed for staff purposes, one wagon capable of carrying 1,000 kilogrammes will be attached to the 3rd battalion of Carabiniers, and another, with a capacity of 2,000 kilogrammes, is placed at the disposal of the transport corps.

It is not generally known that M. Santos-Dumont, who has so far come nearest to winning the Deutsch prize of 100,000f., has himself offered a prize of 4,000f. According to the conditions of the Deutsch prize, M. Dumont drew as a reward for his work in aerial navigation last year a year's interest on the principal, amounting to 4,000f. This sum he has placed at the disposal of the Aéro Club for the foundation of a prize bearing his name, to be awarded to any member of the Aéro Club who, between May 1st and October 31st, 1901, will start from the club ground at Saint-Cloud, travel round the Eiffel Tower, and return to the point of departure (at the end of any time whatever) without having touched the earth, and solely by such means as he may have on board his air-ship or balloon. If the prize is not gained during 1901, it remains open till the solution of the problem. The prize cannot be won by its founder nor by any competitor using a balloon or air-ship designed by M. Santos-Dumont.

THE accident at Lisieux, in the north-west of France, is causing serious injury to the automobile movement, and threatens to bring most drastic restrictions into force. An unknown automobilist ran over and killed an unfortunate employee of the Octroi at Lisieux and escaped at full speed, leaving the man dead on the road; and in spite of the searching, not only of the police, but of the public and of all right-minded automobilists, no clue can be ascertained as to the identity of the perpetrator of this foul deed. The General Council of Calvados is recommending a law to prevent any firm making motor-cars capable of travelling more than eighteen miles per hour, and also requiring the greatest possible speed of all existing cars to be reduced to the same figure. A Press campaign is also going forward on this subject. No amount of law-making will, however, prevent a ruffian from committing a crime, and it is to be sincerely hoped that more reasonable counsel will prevail and that the author of the trouble will be discovered and punished as he deserves.

THE echoes of the great Paris-Berlin race continue to reverberate. The latest echo is the question of Jenatzy and his *voiture mixte*. Jenatzy has been suspended by the A.C.F. for attempting to run in the race without having paid his entrance money or being regularly *poinçonné*. It seems, however, that there is another explanation to his conduct, and Jenatzy has lodged a protest against a decision which, he says, was taken in his absence and without him being asked to give an explanation. Jenatzy further says that, having entered for the race and

deposited, as was required, a sum of money in the hands of the A. C. B., he put his regulation number on his car and started for Paris, but, unfortunately, he had a broken spring, and arrived at Paris too late. His way back to Belgium lay over part of the same route which was gone over by the competing cars. He forgot to take off his number, but informed the controls as he passed that he was not competing. This is Jenatzy's explanation, and the matter stands in abeyance for the present.

THE meeting at Deauville was a victory for steam, and M. Leon Serpollet's friends will all be glad to see him coming to the front again after his misfortunes in the Paris-Berlin race. Strange to say, his little 6 h.p. car beat the 12 h.p. and got the record. The most remarkable performance was that of Osmont, on a 9 h.p. De Dion tricycle, who lowered the petrol record for the kilomètre *lancé* by one second, though he still leaves Béconnais holding the record of the mile. The course was hardly long enough, the road not good enough, and the weather was dull and cold. Mr. F. Edge had two cars entered—a 16 h.p. and a 60 h.p.—but scratched them both.

EVERY day unearths some new experimenter with flying machines as yet unknown to fame. Lyons can now boast of one, a M. Pomperen-Piraud, a maker of models used by painters and sculptors. For years he has been studying the anatomy of the bird, and trying to imitate it in the light materials which he uses for his own business. His object was to make a flying machine with wings articulated like a bird's, but he has given up this plan as impracticable, and is now substituting fans.

RUMOUR has it that Mr. Maurice Farman is about to begin the construction of a flying machine in combination with the Prince of Arenberg, who is supplying the sinews of war. The readers of this journal will remember that I mentioned last week Mr. Farman's balloon ascent. The descent took place under very exciting circumstances, in the middle of a thunderstorm, and the aeronauts were dragged some distance along the ground. Fortunately nobody was much the worse for the experience. It seems that shortly after going up it began to thunder, and, notwithstanding the fact that the valve was opened many times, the balloon was drawn up into the thunder clouds to a height of 1,100 metres. It was soon decided that they must come to earth again, but as the storm was then at its height there was considerable difficulty in getting safely anchored, and in the bumps over the ground, ballast, instruments, provisions, and everything else was thrown out. Mr. Farman, in telling the story to the *Auto-Vélo*, finished by a word of advice to all aeronauts—"On hearing the first thunderclap, come down at once if you don't want to risk your life."

MR. SANTOS DUMONT is ready for another aerial journey. It is just three weeks since his accident, and in the three weeks much has been done. Apart from a few unimportant details, such as a summons from the proprietor of the house where he came down and where he broke a few paltry slates, for which the proprietor was not even polite enough to request payment, the flying machine No. 6 is ready. The stroke of the engine has been lengthened, water cooling has been added, a new balloon has been constructed, the entrance fee for the Deutsch prize has been paid, and now any day—perhaps whilst these words are at the printer's—the world may hear that the plucky Brazilian has rounded the Eiffel Tower and won the prize.

THERE is even the possibility of a collision in the air between two flying machines, for M. Rose has paid his entrance fee also, and purified his hydrogen. He, too, is ready, and expects daily to make his trial ascent. I do not think, however, that M. Santos Dumont has much to fear in this direction. It would indeed be marvellous if an inexperienced aeronaut in an untried machine wrested the coveted prize from the man who has built already six air-ships, five of which have been more or less successful.

THE MILE SPEED CONTESTS AT DEAUVILLE.

A GOOD deal of interest was taken out of the mile speed contests at the meeting at Deauville on Sunday last by reason of the bad weather. The first event was for motor-bicycles (pedalling). There were nine entries in this class, including one lady. The result was as follows:—Cissac (on Chapelle bicycle), 1 min. 48 3-5 sec.; Bucquet (Werner), 1 min. 55 sec.; Lesaint (Werner), 1 min. 58 3-5 sec.; Berny, 2 min. 10 sec.; Jolivet, 2 min. 25 2-5 sec.; Mme. Jolivet, 2 min. 43 2-5 sec. Cissac's time is a record, the previous best having been to the credit of Bucquet (1 min. 56 3-5 sec.). Event No. 2, for motor-cycles (non-pedalling), brought out six entries. Cissac again proved the winner, covering the mile in 1 min. 49 3-5 sec., with Rivierre second in 2 min. 14 2-5 sec.

In Class B (motor-cycles) the first contest was for machines with only one passenger (the driver). Twelve entries were received; Osmont proved the winner, doing the mile on a 9 h.p. De Dion trike in 1 min. 15 sec.; Reith, on a 12 h.p. Buchet, was second (1 min. 25 2-5 sec.); and Gasté, on an 8 h.p. Liberator-Soncin, third (1 min. 26 2-5 sec.). Osmont's time for the kilomètre—38 1-5 sec.—beats record by one second, but his time for the mile was eight seconds outside record. In the two-seated cycle class there were four competitors, the result being: 1st, Osmont

and one for cars with more than two seats. The former resulted as follows:—Ribeyrolles (three trials) petrol, 1 min. 21 sec.; carburetted alcohol, 1 min. 21 sec.; pure alcohol, 1 min. 37 sec.; Baras, 1 min. 23 2-5 sec.; Teste, 1 min. 26 2-5 sec.; Collin, 1 min. 28 2-5 sec.; Tart, 1 min. 28 4-5 sec.; Théry (two trials): 1 min. 37 1-5 sec. and 1 min. 33 4-5 sec.; Gabriel (three trials): petrol, 1 min. 40 3-5 sec.; carburetted alcohol, 1 min. 39 2-5 sec.; pure alcohol, 1 min. 30 2-5 sec.; Page, 1 min. 41 2-5 sec.; Jacquelin (two trials): 1 min. 41 1-5 sec. and 1 min. 43 4-5 sec.; Mercier, 1 min. 44 1-5 seconds; Demester (two trials): spirit, 1 min. 48 2-5 sec.; carburetted alcohol, 1 min. 39 4-5 sec.; Edmond (two trials): 1 min. 48 sec. and 1 min. 41 3-5 sec.; Delahaye (two trials): 2 min. 6 3-5 sec. and 2 min. 7 1-5 sec.; Fouillaron, 2 min. 5 sec. No record was broken in this event. The tests for cars with more than two seats resulted as follows:—Page, 1 min. 38 sec.; Ribeyrolles, 1 min. 28 sec.

Class E (cars weighing over 650 kilos.) proved a disappointment, for although ten entries were received, including Mr. Mark Mayhew's 50 h.p. Napier, Mr. S. F. Edge with two cars (a 16 h.p. and a 50 h.p. Napier), and Girardot with a 20 h.p. Panhard, only one starter—Bardon, on a 12 h.p. Bardon car, who did the mile in 1 min. 48 2-5 sec.

Class F (steam cars), for which there were but three entries, excited considerable interest. The event was run off in three sections. First, in a 6 h.p. light car, M. Léon Serpollet covered the kilomètre in 37 2-5 sec., and the mile in 1 min. 18 3-5 sec., thus easily beating the record he set up at Nice. In a two-seated 12 h.p. car Serpollet next made another attempt at record, but was not successful, his time being 1 min. 26 sec. In the class for four-seated "steamers," Rutishauser, in a 6 h.p. Serpollet, set up new times, doing a mile in 1 min. 24 sec.

In Class G (combination electrical and petrol cars) the only entry was Jenatzy's 100 h.p. car. Owing to M. Jenatzy's trouble with the A.C.F., the car was driven by Baron de Caters, who covered the mile in 1 min. 20 sec. The result was disappointing, but over a longer course it is considered the car could cover the mile in much less time.

Immediately the contests were over a large number of the competitors set off by road for Ostend to take part in the races which were held there on Tuesday last.



GENERAL VIEW OF DEAUVILLE.

(9 h.p. De Dion quad), 1 min. 30 1-5 sec.; 2nd, Cormier (9 h.p. De Dion quad), 1 min. 39 1-5 sec.; and 3rd, Bardin (9 h.p. De Dion quad), 1 min. 44 1-5 sec.

Class C (for voiturettes weighing less than 400 kilogrammes) had nine entries, and resulted as follows:—(1) Truffault (12 h.p.), 1 min. 28 2-5 sec.; (2) Barbaron, 1 min. 32 2-5 sec.; (3) Denesle, 1 min. 37 3-5 sec.; (4) Oury (8 h.p. Renault), 1 min. 41 sec. Truffault's time is a new record, the previous best being 1 min. 40 2-5 sec.

Class D (light cars weighing between 400 and 650 kilogrammes) brought out the following long list of entries:—R. Darzens, 16 h.p. Clément; Théry, 16 h.p. Decauville; Page, 16 h.p. Decauville; Gladiator I., 16 h.p. Gladiator; Gladiator II., 16 h.p. Gladiator; Gladiator III., 16 h.p. Gladiator; Testé, 16 h.p. Panhard; Gobron-Brillié, 12 h.p. Gobron; Clément I., 16 h.p. Clément; Clément II., 16 h.p. Clément; Ribeyrolles, 20 h.p. Darracq; Baras, 20 h.p. Darracq; Edmond, 20 h.p. Darracq; Viguier, 12 h.p. Korn; H.-P. Deschamps I., 12 h.p. Deschamps; H.-P. Deschamps II., 12 h.p. Deschamps; Buchet, 20 h.p. Buchet; E. Jacquelin, 10 h.p. Jacquelin; A. Collin, 12 h.p. Sirene; Vital-Bouhours, 12 h.p. Darracq; Darracq IV., 12 h.p. Darracq; Oury, 10 h.p. Renault; Darracq V., 12 h.p. Darracq; Delahaye, 6 h.p. Delahaye; Fouillaron, 6 h.p. Fouillaron. The event was run off in two series, one for one or two seated cars,

THE Nottingham and District Automobile Club has decided to defend all members summoned for exceeding the legal limit where such excess of speed has taken place upon the open roads without endangering the safety of others.

MR. RUSSELL SKINNER, who represents the Locomobile Company of America, is now staying at the Spa Hotel, Tunbridge Wells, where he will be pleased to meet intending purchasers of motor-cars, and take them for trial runs.

OWNERS of motor cars, mechanics and drivers, should be glad to hear of the employment agency which has been started by the Motor Mart, of Euston Road, N.W., where drivers and engineers seeking employment can register their names free of charge.

A MILE motor-cycle handicap was one of the events of the Lincoln Bicycle Sports on Saturday last. Winners of heats were G. J. Wilkinson, Lincoln, 1 h.p. Stonebow bicycle; T. H. Tessier, London, 1½ h.p. Werner bicycle; G. Hunt, Nottingham, 5 h.p. Darracq tricycle; R. M. Wright, Lincoln, 2½ h.p. De Dion tricycle. In the cross heats Tessier beat Wilkinson, the driving belt of whose machine came off in the first lap; Wright beat Hunt, who gave up in the first lap on losing his switch. The final winner was R. M. Wright, whose time was 2 min. 36 2-5 sec.

A DEMONSTRATION of motor-cars, under the auspices of the Lincolnshire Automobile Club, was held at Billingborough on Saturday afternoon, and proved a considerable attraction. Cars were present from all parts of South Lincolnshire, and Dr. Cragg gave an interesting lecture on the working of different types. Colonel de Burton entertained the motorists and their friends to luncheon at Buckminster Hall, and the cars, after the lecture—which was well attended—paraded to Threekingham House, where Captain Cragg entertained the party to tea.

CORRESPONDENCE.



AERIAL NAVIGATION.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—With reference to "Automan's" comments in your last issue on my letter to your contemporary, allow me to say that I knew M. Santos-Dumont's vessel was *slightly* heavier than air. For purposes of true flight this is not sufficient, and for such purposes is practically the same thing as being only slightly lighter than air—i.e., the condition of the other gas-sustained vessels when loaded up to start. I think M. Santos-Dumont will recognise the truth of that statement and readily endorse it, that is, if he has made any experiments at all in *true* free flight. A gravity aerial vessel is understood to mean one *immensely* heavier than air—i.e., comparable with the birds, which are roughly six hundred times heavier than the air displaced by them.

When advocating the course of making the large sailing birds our models, I had this condition in mind (among others), and repeat my statement emphatically, that gravity is indispensable to their flight; and will add, that if materially lightened, they could not fly at all. This condition differs very widely from that of M. Santos-Dumont's gas vessel. The greatest living and deceased authorities on flight agree in the fact that the sailing birds do make use—and excellent use—of the winds for sustentation, as well as for propulsion, which only their gravity, in conjunction with the *tension on their pectoral muscles*, enables them to do. As I remarked, these birds are known to have very little muscular power, as compared with small birds, proportionately, and so allow the combined action of gravity and wind pressure to do the major part of their work for them, and fly passively. Without weight there can be neither momentum nor inertia, both properties being very essential to true flight.—Yours faithfully,

SIDNEY H. HOLLANDS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Not having the capital myself to experiment with an aerial motor, perhaps one of your readers would like to do so on the following description of, I think, a very feasible machine. The usual cigar-shaped gas-holder, supporting a platform underneath; two motors side by side working independently of each other; each motor to drive a three-bladed fan on a horizontal principle, about fifteen feet apart, across the centre of the platform, for ascending. Bevelled wheels on the shafts would drive two stern fans for propelling the machine. Having independent motors, the one could be slowed down or increased in speed for turning the machine round. It would not be against the buoyancy to have one side higher than the other; a shifting ballast might be necessary in windy weather. No rudder would be required. To guard against the accident of one motor refusing to work, a clutch that would connect the two motors would be a safeguard, so that one could drive all four fans.—Yours truly,

HOPEFUL.

HOSPITALITY (?) AT OLD ENGLISH INNS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—In the interests of automobilism I venture to lay before your readers the following instance of the very unbusiness-like way which some innkeepers run their houses upon. I was out driving upon the evening of the 26th ult., in the neighbourhood of the well-known "Ferry Boat" inn at Tottenham, upon a belt-driven light car, when the connecting link of the belt-shifting gear snapped suddenly. Being dark at the time, pouring with rain, and close to the "Ferry Boat," we naturally thought we should be right for standing the car up for the night, especially as "mine worthy host" displayed a large signboard over three stables (which were empty) stating there was good accommodation for cyclists, pleasure parties, horses and traps, etc., etc. Imagine our surprise when we were curtly refused to be allowed to put the car in a stable for the night, and this after

explaining that it had broken down. We therefore had to push the car about half a mile further on until we came to the "White Hart," where we were willingly allowed to stable our car at a most reasonable charge.—Yours truly,

WALLER MARTIN.

MOTOR-BICYCLES.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I have been much interested in your articles on motor-bicycles, and I can quite understand the difficulties experienced by some riders when first trying such machines. All these difficulties, however, quickly disappear with a very little practice. I have myself been riding a motor-bicycle of the Minerva type, made by Ratcliffe, of Frinton-on-Sea, for the last six weeks, and I know of no more pleasant means of locomotion. I can safely say that anything more simple, neat, compact, or easy of management than the machine I have, it would be difficult to imagine. I am finding it 50 per cent. more powerful now that, with the use I have had, the working parts are all wearing to a face. I consider my machine is the best pattern to ride as an ordinary bicycle should the rider at any time find himself short of petrol. The extra weight is hardly noticed, being below and between the two wheels, which is the best position for carrying, as here it acts as ballast to a boat, reducing vibration and making the machine run perfectly true and straight with an entire absence of sway.

My machine does the maker credit, for although it has carried me many hundreds of miles, I have not had a single hitch with it since I started.—Yours truly,

J. W. MOSS.

THE ROOTS AND VENABLES CAR.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I have a Roots and Venables oil-car which has recently had a new ignition tube fitted, with the result that it fired too soon until I put a collar round the lower part to shield it from the flame. It now fires correctly, but takes a lot of starting from cold—about eighty turns of the handle sometimes. Also I find the blow lamp a great nuisance. It is required to start the car, and also to keep the carburettor hot if car is stopping and engine also stopped. The small hole is always apt to clog up, or the pressure pump of same work badly.

The spokes I find give way frequently, one every thirty miles or so, no doubt granite setts have something to do with it. The solid tires are in good condition. The makers say they do not have trouble with spokes. I wonder if I went in for pneumatics if I should be transferring the bother from the spokes to the tires, and be no better off. I may say faulty spokes are always promptly replaced and properly tensioned. If your readers can help me at all with advice I shall be obliged.—Yours truly,

"ROOTABLE."

A GOBRON-BRILLIE motor-car, the engine of which is operated by alcohol, has lately been shipped from Paris to Tonkin.

DURING the International Engineering Congress, held in Glasgow this week, several papers of great interest to automobilists were read, including one by Professor Hele-Shaw, on "The effect of temperature on cooling water in high-speed automobiles."

CHARRON and Girardot, two well-known French motorists, left Paris last week for New York, via Havre. They have taken with them a 40 h.p. Panhard, a 8 h.p. racing voiturette, and a 10 h.p. light car.

THE German Minister of the Interior has issued an order prohibiting races of automobiles on all public highways, roads, and public places, and has instructed all the provincial authorities not to allow such races in future.

THE French Minister for War has given orders that automobiles shall be used as much as possible in the forthcoming Rheims review. All the military motorist engineers, both on the active and reserve lists, have been warned that they will be called upon to appear before the Czar, who desires to make a study of military automobilism.

HERE AND THERE.



THE Taunton Rural District Council has approved the Long Ashton Rural District Council's proposals regarding the pace of motor-cars, and that such cars should be licensed and numbered.

MR. G. WALMSLEY, of Guildhall Street, Preston, points out in a local paper that the town is on the direct route from the south to the lake district, and urges that as a reason for Prestonians to be tolerant to the motor-car.

A MOTOR-WAGONETTE, licensed to carry eleven persons, began to run this week from Scarborough to Filey, Forge Valley, and other resorts of visitors. On each trip the vehicle carries the full complement of passengers.

MESSRS. BAGNALLS, LTD., of 133, Steelhouse Lane, Birmingham, have taken up the agency in Birmingham and district for the Werner motor-bicycle; they will carry a stock of these machines, as well as of motor accessories.

IN Dr. Barton's airship, the patents of which are said to have been purchased by the British War Office, the propellers are driven by three light engines operated with ordinary motor-car spirit.

A MEETING was held on Wednesday last to consider the possibility of starting a motor-car service between Aston Clinton and Tring Station, and other places in that district of Buckinghamshire.

THE police in the Kenilworth division are very active in keeping a look-out for automobiles transgressing the legal speed limit, and motorists who pass through that portion of the county will do well to avoid the temptation to scorch, which the excellent roads offer.

AT the Lexden Brewster sessions recently held, Superintendent Ackers called attention to the serious danger caused by motor-cars in regard to horses left unattended outside both private and public houses. The Chairman said it was very much people's own fault. Why did they not have iron rings fastened on each side of their front doors?

THE British Power, Traction and Lighting Company, Ltd., of York, inform us that a speed trial of one of the new 6 h.p. P.T.L. Gardner-Serpollet steam carriages was made on Monday last on a straight stretch of road on the Wolds, when the car passed over a measured mile on the level, with a flying start, in one minute and eleven seconds. The trial was timed by several people independently.

A MOTOR-CAR containing two persons, whilst proceeding on Saturday afternoon along the Station Road, Newmarket, met a cart laden with scaffold poles, and in some unexplained manner the longest pole caught the front of the motor, smashing off the front seat and damaging the mechanism. The force of the impact smashed the scaffold pole, overturned the cart and horse, and threw out the driver. The motorists and driver of the cart escaped with comparatively slight injuries.

A MOTOR-CAR, driven by Mr. Arthur Hines, of London, accompanied by Mr. Robert Bloxham, of Leytonstone, Essex, whilst descending a steep hill at Harewood End, near Ross, on Sunday evening, came face to face with a pony and gig at a sharp corner in the road. Mr. Hines, with a view to avoiding disaster, steered the car straight for the hedge, but the pony took fright and sprang forward at the same time. The car ran violently into the pony, knocking it and the trap over, and throwing out the occupants of both car and trap, fortunately without serious results to any.

THE "Devonshire" is the name of a new motor-bicycle which has been put on the market by Mr. J. T. Walker, of 192, Brookhill, Sheffield. The engine, which is of 2½ h.p., is placed in a vertical position in the fore part of the frame behind the handle bar. The machine is driven by a special belt from a wooden pulley attached to the spokes of the back wheel by special clips. The carburettor is placed behind the saddle, and the pipes run under the top tube of the frame to the motor, so that in no way do the legs of the rider catch in any of the connections. The

front part of the machine is specially strengthened by duplex forks. The adjustment of the belt is effected by a ball-bearing jockey pulley which slides upon the bottom stay of frame. The complete machine weighs about 70 lbs.

MR. D. CITROEN, of 45, Holborn Viaduct, London, E.C., has issued a warning against purchasing fittings or motors infringing the patent for the Minerva motor for bicycles. Purchasers of such articles will be liable to an action at law, involving the payment of damages and costs and the forfeiture of the infringing article. All motors of the genuine Minerva manufacture are stamped with the registered trade mark "Minerva, Anvers," except in a few instances where cycle makers have obtained the permission to sell the Minerva motor under their own name.

THE Memorial Grounds at Canning Town were well patronised on Thursday, last week, to witness the fourth annual cycling meeting held under the auspices of the Danes Cycling Club, the proceeds of which will be devoted to the Poplar Hospital Fund. The programme included a motor-cycle handicap, also an exhibition ten miles ride on a 12 h.p. motor-racing spider by Mr. T. Maltby, junr. In the ten-mile motor-cycle handicap Mr. Maltby proved the winner, he covering the distance from scratch in 17min. 22.5sec., Mr. M. Moyle (1 lap start) being second.

A MOTOR-CAR accident, by which four people were injured, occurred in North-street, Brighton, one afternoon this week. Mr. Eric Chaplin, of Stafford House, St James's, London, was driving his motor-car up the hill when the connecting chain came off one of the wheels, and the car ran back into the busiest part of the town, at the junction of five streets. To avoid colliding with a bus laden with passengers, Mr. Chaplin ran his car on to the pavement at the corner of West-street. The pavement was thronged with people at the time, and several were knocked down. The injured were taken to the hospital, where two were detained.

THE United Motor Industries, Limited, of 40, Holborn Viaduct, evidently do not intend to let the grass grow under their feet, judging from the number of new lines they are introducing even at this period of the season, and also the very material alterations in prices which they are making in many directions. They have just issued two new lists of electrical parts, fittings and accessories, including fresh prices for the famous Bassée and Michel coils, for which they are the sole British agents. They are also getting out a new lamp list for the coming winter trade. Copies of both these lists will be sent on application.

A PARAGRAPH went the rounds of the daily Press last week, that the Worcester new motor fire-engine broke down while out on a trial trip, owing to a tube in the boiler bursting. The writer of the paragraph referred to the trial as a fiasco, and added, "The firemen had to return in cabs, while the engine was towed back by horses." Mr. C. T. Crowden, who is responsible for the conversion of the engine from a horse-drawn vehicle to a self-propelled machine, considers the Press criticisms have been very unfair, and likely to discourage advancement in this direction, and sends us the following particulars:—"The horse-drawn engine was constructed in 1883 by a well-known firm, and it has travelled about 300 miles since its conversion into a motor, and has faced all the hills and roads that it has been put on. The other Friday a twenty-four mile journey was taken over some of the hilliest roads, and the engine was then taken to the river to pump water. The trial was a pronounced success, and anything but a 'fiasco.' What really happened was the giving way of one or two boiler tubes, which stopped the supply of steam at once—an occurrence which might happen when pumping on a fire quite as easily as when travelling, and which takes place every day on the railway, and in the Navy. One may as well call the Navy 'a fiasco' because a boiler in one of the ships burst a tube. Fortunately this engine is so arranged that if a breakdown occurs horses can be attached at any time. The boiler was first made in 1893, and has failed twice in that period, through tubes giving out."

FURIOUS DRIVING CASES.



At Chertsey Arthur Du Cros, of Shepperton, was summoned for driving a motor-car at an excessive speed in Bridge Road, Chertsey, on August 18th. Mr. Samuel Flemming defended. P.C. Goobystated that at 6.15 p.m. on the day in question he was on duty in the Bridge Road, Chertsey, when he saw the defendant, driving a motor-car in the direction of Chertsey. He was proceeding at a reasonable speed, but after he had passed witness he put on a much greater speed. Witness timed him over a distance of 176 yds., which he accomplished in 20 secs., or an average speed of eighteen miles an hour. Witness did not see him any more on that day, but on the 19th he saw the defendant coming round Bell Corner on his car, and called to him to stop. Defendant took no notice but went on. Witness afterwards ascertained his name and address, and on the evening of the 20th he again saw the defendant in Guildford Street, and asked him to pull up, which he did. Witness asked him if he was driving a motor-car in the Bridge Road, on the 18th, and at first he said, "I don't know," but, after speaking to a man on his left, he said, "we were out with the children on Sunday night." Other witnesses estimated the speed at between sixteen and eighteen miles an hour. The defendant stated that on August 18th he was driving a motor-car in the Bridge Road. He went to Virginia Water, and returned the same way. The witness then proceeded to refer to the interview he had with the constable, who, he said, spoke very fairly to him. He (defendant) asked him how many passengers he saw in the car, and he said four, whereupon witness said, "it could not have been my car, as I had six." In reply to the Rev. H. J. De Salis, the defendant said that two ladies who were in the car had a child each on their knees. He denied that he went at an excessive speed on the day named. He went to London in his car, and passed fifty policemen practically every day, and had never been pulled up as to his speed. The constable had never said that he identified him (defendant) as the driver of the car. The magistrates retired to consider their decision, and on returning into Court, the Chairman said there was considerable doubt in the case, and the summons would be dismissed. The Bench then proceeded to hear another summons against the defendant for driving the motor excessively in Guildford Street on August 19th. P.C. Larby stated that on the evening in question he stood at the church end of Guildford Street, in company with P.S. Wright and Mr. R. F. Cooper, the relieving officer. He saw a motor-car coming towards them at a great pace, but when near witness the car made a great noise, as though its speed was altered, or the brake put on. The car was stopped by Sergeant Wright, who was on his annual leave. Mr. Flemming: Then I must ask that the case must be dismissed. Inspector Marks (who was in charge of the court): It does not matter; there are other witnesses: Mr. Flemming: But the sergeant took the charge. Mr. R. F. Cooper was then called, and stated that he was with Sergeant Wright and the constable. When he saw the car it was coming at a very rapid rate. He certainly thought that the car was proceeding at the rate of sixteen to eighteen miles an hour. The defendant stated that he had come from Bagshot. The governor of the machinery was not acting properly, and it made a great noise. Speaking of the meeting of Sergeant Wright, he said that he asked the sergeant the way to Chertsey Bridge. He (Sergeant Wright) then remarked, "But what rate do you reckon you came down there at?" and he told the sergeant to look at the gear to see that he was on the second speed, nine miles an hour. This case was also dismissed.

At Portsmouth, Charles Heffer was summoned for driving a motor-car in Broad Street, Portsmouth, at a speed exceeding twelve miles an hour, on August 8th. Mr. T. W. Staple Firth, of London, appeared for the defence. Constable Pratt stated that he saw the defendant proceeding at a rapid rate from Southsea Common along by the barracks to Pembroke Road. Witness, who was accompanied by Constable Sturgess, mounted on bicycles, gave chase, but although they went at the rate of eighteen miles an hour they could not catch the defendant. At Point, however, the defendant was obliged to stop, and the constables took his name and address. The defendant's companion said, "You would never have caught him if he had not stopped. We were going at twenty-five miles an hour." Witness was of opinion that the rate of speed was dangerous, and as the defendant proceeded along Broad Street several horses were frightened by the car. Witness estimated the speed by the aid of a "metroscope," which had been tested that morning and found to be correct. Mr. Firth contended that the constables should have tested the speed of the defendant for twelve miles. If they took a shorter distance, and alleged that he was exceeding the speed laid down by the Local Government Board regulations, the defendant should have been summoned for furious driving. For the defence, it was stated that the car was only geared up to about eleven miles an hour, and the reliability of the metroscope was questioned.—The Bench retired, and after a lengthy deliberation in private, said the question to be decided was one of pace, and they considered that the evidence of witnesses on both sides was very conflicting as judges of pace. There was an element of doubt in the case, and the defendant would have the benefit of it. The information was dismissed.

ALBERT FERRELL, of London, was summoned at Bourne Petty Sessions, Lincolnshire, for refusing to stop a motor-car when requested by the driver of a restive horse, and also for furious driving. The driver of the horse gave evidence as to the defendant refusing to stop when requested, and the police proved the furious driving of the car. The superintendent of police said he saw the motor-car pass his office, and before he

could get to the door it was almost out of sight. He at once telegraphed to a neighbouring town, but had a wire from the constable there to say that the car had already gone, the distance of nine miles having, according to the police evidence, been covered in ten minutes. A Bourne tradesman said when the car stopped in the town for a few minutes the driver told him that they had come from London that morning (a distance of nearly 100 miles) in three and a-half hours, and that the car could travel 60 miles an hour. Defendant did not appear. The chairman said the cases were as bad as they could be, and they would impose the maximum penalties—£10 and costs in the first case, and £5 and costs in the second—a total of £17. In the first case there would be a distress issued, and in the second imprisonment with hard labour in default of payment.

At the Kingston County Bench, Nevill Copland, of Teddington, was summoned for having driven a locomotive in Ewell Road, Tolworth, on the 19th ult., at a speed greater than was reasonable and proper, having regard to the traffic on the highway, contrary to an order of the Local Government Board. P.S. Richardson deposed that about 6.10 p.m. on Monday, August 19, he saw the defendant, who had no hat on, driving a four-wheel motor-car along the Ewell Road, Tolworth, at about twenty miles an hour. Witness ran into the roadway with the intention of putting up his hand to stop the defendant, but he had passed before this could be done, and turned into Kingsdown Road, which was a private road with a barrier across. Going up to the defendant witness asked for his name and address, and told him he would be reported for a summons for furiously driving his motor-car in Ewell Road. There was not much traffic about at the time, but had there been any the defendant could not possibly have pulled up. The Chairman: Why is the summons taken out under this section and not under the section for driving more than twelve miles an hour. This raises the whole difficulty as to traffic. Defendant: There was no traffic whatever about. Sub-Divisional Inspector Brice said that he was responsible for the summons being taken out under this particular section. It was the main road to Surbiton, and just at this spot it was very dangerous to drive at such a furious rate. The Bench decided to convict, and imposed a penalty of £2, Mr. Cockburn advising that any future summonses should be taken out under the other section.

At the Knaresborough Petty Sessions, Walter McCormack, motor-car driver, of Harrogate, was charged by the police with furiously driving on the York and Harrogate road at Allerton on August 24th. Police-constable Sweeting stated that owing to the prevalence of furious motor-car driving a distance of a quarter of a mile was measured on the road, and when the defendant's car came along it was timed and found to cover the distance in three-quarters of a minute. When he and another constable stopped the car and charged the defendant, who was driving, the owner, a gentleman whose name did not transpire, came up to the police and told them he would rather pay £10 than have the case appear in the papers. He offered the officers £1 each, and said he would send them £5 each if they gave their addresses. A sovereign was pressed upon one officer, who was unable to return it, but the other was able to prevent the owner from slipping a sovereign into his hand. Both officers gave evidence, the one producing the sovereign in evidence against the action of the owner of the car. There was no appearance of the defendant driver, and the chairman (Mr. W. Sheepshanks) commented on the attempt to bribe the police, which, he said, was a shameful thing, but the police were not to be bribed. Such a practice, he said, would defy the law and corrupt the police. The full penalty of £10 and costs would be imposed. In reply to an inquiry by Col. Ormsby, the Bench made the suggestion that the sovereign should be sent to the Police Orphanage Funds, the gentleman's address being unknown.

At Luttermworth, Harry Taylor, cycle maker, of Kettering, was charged with driving a motor-tricycle more than twelve miles an hour, at North Kilworth, on the 17th ult. Defendant pleaded guilty, but stated he had the machine under proper control, and could pull up in three yards. Superintendent Agar stated defendant was coming down the hill and along the flat by Mr. Entwistle's at quite twenty miles an hour. Defendant pulled up when he told him, and gave his name and address.—Fined £1, and 8s. 6d. costs.

MR. HUGH MOFFATT, of Coventry, was charged with furiously driving a motor-car at Severn Stoke on the 11th ult. P. C. Jeffs stated that he saw the defendant coming down Stoke Hill very fast, "like the wind," when he passed him, and the hill was a very dangerous one.—Fined £5, and 9s. 6d. costs.

At Sleaford police-court, Albert Ferrell, of London, was summoned for furiously driving a motor-car at North Kyme on August 13th, and a second summons charged him with furiously driving the car at Sleaford on August 14th. Mr. Richard Stow, of Haverholme, said the car passed him at the rate of 25 miles an hour. Mrs. Stubley, of North Kyme, said the car, when it was being driven at a dangerous rate, ran over and killed a sheep. Supt. Taylor said the car left Bourne at 10.25, and passed through Sleaford at 10.57, going at a furious rate. Defendant said the brake got out of order, and the car ran away with him. In the second case, Mr. Godson and Mr. A. C. Howard, solicitors, gave evidence as to the pace at which the car travelled through the streets of Sleaford. George Blackwell considered the car went at the rate of 39 miles an hour, judging by the time it occupied in going 200 yards. Defendant said he was a driver for Mr. Charles Ansell,

stockbroker, of London, but the pace stated had been greatly exaggerated. He had been fined at Bourne on Thursday, last week, and had to go to Norman Cross Court the following day. Fined £13, including costs, but time was allowed in which to pay.

LE MARCHANT, of Chobham Place, Surrey, was fined £5 at Guildford on Saturday for driving his motor-car at a greater speed than was reasonable and proper.

At Ashford (Kent) police-court, Horace O. Hall, of Tonbridge, and W. Fleming Blaine were fined £5 each for driving motor-cars at more than twelve miles an hour. Constables who were stationed on the road swore that Mr. Hall did a quarter of a mile in 35 seconds, or at the rate of 25.57 miles an hour, while Mr. Blaine's time was stated to be 40 seconds for the same distance, or at the rate of 22½ miles an hour.

At Norman Cross (Huntingdonshire), Albert Ferrell, of London, was summoned for furiously driving a motor-car on the Great North road on August 14. According to the police evidence, the defendant was timed to cover three-quarters of a mile in one minute. The defendant said the motor ran away from him. Superintendent Allen stated that defendant had been previously charged with furious driving. Defendant, who was fined £10 and costs at Sleaford the day before, was now called upon to pay £10 and 4s. costs.

At Aberdeen, James Getan, Vicomte de Thiene, a French nobleman, was charged before Sheriff Begg, with having, on the 1st of August, on Deeside road, at Cults, driven a motor-car at a speed of between twelve and twenty miles an hour. The policeman and another witness estimated the rate at which the car was running at about twenty miles an hour. The charge was found proved, and a fine of thirty shillings imposed.

At Derby, Henry Butler was summoned for furiously riding a motor-bicycle on August 24th. Police-constable Gledhill stated that the defendant rode at the rate of eight miles an hour across Pear Tree Road. In Roe Street he only avoided a collision with a woman who was crossing the road with a perambulator by jumping off the machine. Defendant asserted that he was not travelling at a greater rate than six miles an hour. He was fined £2 and costs. The chairman said it ought to be made known that the public had the first right to the road, and that cyclists and others must pull up and wait for pedestrians to cross.

At Harewood End (Rosa) Petty Sessions, Mr. Lorraine Barrow was summoned for driving a motor-car at an excessive speed. Mr. T. Hutchinson (Hereford) appeared for the defendant, who was said to be away in America. One witness said the car passed him at the rate of between forty and fifty miles an hour. It went by him like a flash of lightning. Police-Sergeant Lloyd said that when he spoke to defendant about the matter he said the pace could not be fifty miles an hour, but it was ridiculous to think he should only go at twelve miles an hour on a straight road. The chairman said the Bench thought it was a case which should be marked with a considerable penalty; three recent serious accidents in the district pointed to the danger. Defendant would be fined £10 and 19s. costs.

At Corwen police court, Captain J. Griffiths, of Llangollen, was charged by Police-sergeant Hughes with having driven a motor-car through Corwen furiously, and to the danger of life and limb of pedestrians. Sergeant Hughes said he was sitting in the police-station, which abuts on the highway, when he heard the sound of a motor-car, which appeared to be going at a furious rate. It flashed past, and he had no opportunity of arresting the driver's attention. Police-constable Lloyd said that complaints had been made to him of the furious rate at which the motor was going, and they went to the post-office and wired to Sergeant Roberts at Cerrigy-Druidion to intercept the car. The driver left Corwen at nine minutes past three, and, according to the time taken by Sergeant Roberts, he arrived at Cerrigy-Druidion at 3.36, having travelled the distance in 27 minutes. Police-sergeant Roberts said that he received the telegram from Corwen about 3.30, instructing him to intercept a motor, and Captain Griffiths arrived about 3.36. Defendant told him he had been driving his machine at the rate of twelve miles an hour. The Bench imposed a fine of £1 14s., including costs.

THE SPEED OF MOTOR-CARS IN SCOTLAND.

The following important order has just been made by Lord Balfour of Burleigh which alters the general regulations respecting light locomotives in Scotland. The effect of it is to raise the maximum limit of speed for light locomotives (motor-cars, etc.), in Scotland from ten miles an hour to twelve miles an hour. The order comes into force at once.

Whereas Article IV. of "The Light Locomotives on Highways (Scotland) Regulations, 1896," made by the Secretary for Scotland (hereinafter called the principal regulations) provides inter alia as follows:—

"Article IV.—Every person driving or in charge of a light locomotive when used on any highway shall comply with the regulations hereinafter set forth, namely,

"(2). He shall not under any circumstances drive the light locomotive at a greater speed than ten miles an hour."

And whereas it is expedient that the said article should be amended.

Now, therefore, I, the Right Honourable Alexander Hugh, Lord Balfour of Burleigh, K.T., His Majesty's Secretary for Scotland, do, in

pursuance of the powers given to me by the Locomotives on Highways Act, 1896, make the following regulations applicable to Scotland with respect to the use of light locomotives on highways:—

REGULATIONS.

1. The words "He shall not under any circumstances drive the light locomotive at a greater speed than ten miles an hour," occurring in Article IV. of the principal regulations are hereby revoked, and the article shall be read as if in lieu thereof the following words were inserted, namely:—

"He shall not under any circumstances drive the light locomotive at a greater speed than twelve miles an hour."

2. In all copies of the principal regulations which shall be printed after the date hereof Article IV. shall be printed as hereby amended.

3. These regulations may be cited as "The Light Locomotives on Highways (Scotland) Regulations, 1901."

Given under my hand and seal of office at Whitehall this twenty-sixth day of August, one thousand nine hundred and one.

BALFOUR OF BURLEIGH, Secretary
for Scotland.

NO LICENSE.

At Bournemouth. The Bournemouth Motor-Car Company was summoned for working a motor-car on August Bank Holiday without a license. Mr. W. H. Druitt prosecuted on behalf of the Bournemouth Corporation. P.C. Chick, in giving evidence of the serving of the summons, said he served it at the office of Mr. Bell, at the New Era Laundry at Pokesdown. An objection was taken to this course by Mr. Druitt, and the Bench decided to adjourn the case in order that a fresh summons might be issued.

MOTOR-CAR AND COSTERMONGER.

At Stockton County Court, John Richard Davey, hawker, and Sarah Jane Davey (his daughter) sued William Sheriton Edrington, retired engineer, Norton, for £30 10s. damages. According to the evidence for the plaintiffs, they were driving a horse attached to a hawker's cart at a walking pace down Billingham Bank, near Stockton. When defendant was coming up the bank on his motor-car, Mr. Davey signalled and shouted to the defendant to stop, but he took no notice, and did not slacken speed, passing plaintiffs at a pace which was estimated at 12 or 14 miles an hour. Mr. Davey's horse reared, and Miss Davey was thrown out, whilst the horse bolted down the hill, where the cart was overturned. It was contended that as plaintiff signalled the defendant should have stopped. His Honour said his experience was that they never did. For the defence it was contended that plaintiffs were coming down the hill at a trot, and that the motor-car stopped, after which the horse bolted, and the cart was overturned. The car could not go more than ten or eleven miles on the level, and not more than four and a half miles up that particular bank. It was suggested that plaintiff had been guilty of contributory negligence by not getting out and holding the horse. His Honour thought under the circumstances he would have gone into the next field and have left the horse to take care of itself. He gave judgment for £25 10s., which included £7 7s. for the daughter.

A MOVEMENT is on foot to start a Mid-Kent automobile club.

MESSRS. HUTTON, of Dublin, have now opened a depot at Montgomery Street, Belfast. This should prove a great convenience to motorists in Ulster.

Two motorists at Grenoble, France, are reported to be about to make an attempt to ascend to the summit of Mont Blanc in a motor-car.

DR. S. F. COLOHAN, of Dublin, last week drove out her Excellency the Countess Cadogan on his Daimler car. Lord Coventry was also on the vehicle, and a long run was taken from the Viceregal Lodge to the neighbourhood of Bray and back.

SOME experiments have been carried out by Professor Behrend at the Hohenheim Technological Institute on the use of alcohol in motors in place of petroleum. The motors used were of German make and 6 h.p. The first experiments were made with ordinary methylated spirits and later with alcohol containing varying proportions of benzine, a liquid which forms a satisfactory denaturing agent, being cheaper than those usually employed. Using methylated spirit the cost of working proved to be 1.43d. per horse-power per hour, while admixture of benzene to the extent of 68 per cent. reduced this amount to 1.25d. for the same amount of energy. Using petroleum the cost with the same motor amounted to 1.2d. The alcohol employed for trade purposes in Germany is a potato spirit costing about 11d. per gallon.

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COMMENTS.



TO the last moment of his visit to Homburg His Majesty was true to his automobile, journeying in it from Homburg to Frankfort *en route* for Copenhagen. Arrived at Fredensborg, His Majesty was soon a-motoring again. On Monday he took a lengthy spin in the direction of Frederiksborg, accompanied by King George of Greece and the Princes Frederick

and Hans. The King's automobile created a sensation, and before starting one of the young princes, who is an expert photographer, took a picture of the car and its royal occupants. Motoring may in fact now be regarded as the sport of kings and queens *par excellence*, for not a day passes at Fredensborg without King Edward taking a run on his car, usually accompanied by one or other of the crowned heads or princes foregathered at the royal Danish palace. As notices have for some time been appearing in different papers stating that King Edward is using various makes of cars, the Daimler Motor Company, Limited, ask us to mention that the only motor-carriage His Majesty uses is the 12 h.p. Daimler they had the honour of constructing to his special order last year. He has used this car continuously, and has it with him at present on the Continent. We are pleased to add that, though he has driven in it some thousands of miles, it has given every satisfaction and has been the means of making His Majesty a most enthusiastic automobilist. It is also pleasing to know that the car is British built throughout.

"Scotland for Ever."

OUR friends across the border are naturally jubilant at the success of the Scottish vehicles running in the recent trials, and the fact that the Mo-car—an essentially Scotch production—has done so well has filled the hearts of Glaswegians with delight. The trials were essentially reliability trials, and that the motor-cars were reliable we can testify, as we saw as much of them on the road as any one, and never once did we see them other than travelling. The verdict as to the cars on Saturday was received with extraordinary enthusiasm. The "Argyll's" appearance is that which appeals apparently perhaps more forcibly to the Sassenach, but the car ranks equal if not superior to any of the voiturette class imported from abroad. Its record during the trials places it as the best car yet turned out from Scotland. The Albion is a good car, while the vehicle handled by Mr. Stirling, considering its price, is not to be beaten.

Observers and their Ways.

A DRIVER who had a good car was fortunate, but he who had also a good observer was doubly fortunate. The driver was at the mercy of the observer, and was told when to go fast or when to go slow, and when it is considered that many of the observers had never been on a car, and that probably they did not study their ample instructions till they got on the

vehicle, it follows as a matter of course that "marks" were lost owing entirely to the lack of knowledge of the observer. Hence some cars losing marks from no fault of the drivers, and hence also some grumbings about the observers.

Motor-Car Wrecking.

A SERIOUS outrage of this nature is reported from the North. On Saturday night a motor-car belonging to Messrs. Davidson Brothers, of High Grange, Bishop Auckland, which regularly runs between that place and Crook, carrying passengers, was upset at a point in the road half-way between Howden-le-Wear and High Grange, by running into an obstruction which had been laid on the road. The passengers were thrown out of the car, but, happily, none were seriously injured. Examination of the roadway showed that a V-shaped wall had been built across it with stones from a neighbouring pit-heap, and this at a spot where there is a sloping bend in the road. Appearances all point to a premeditated outrage, which might easily have been attended with disastrous results had the motor-car been going at a faster speed. Local opinion is divided as to the perpetrators of the dastardly outrage. In some quarters it is believed that the obstacle was erected by the police, in the hope of capturing a well-known motorist suspected of exceeding the legal limit.

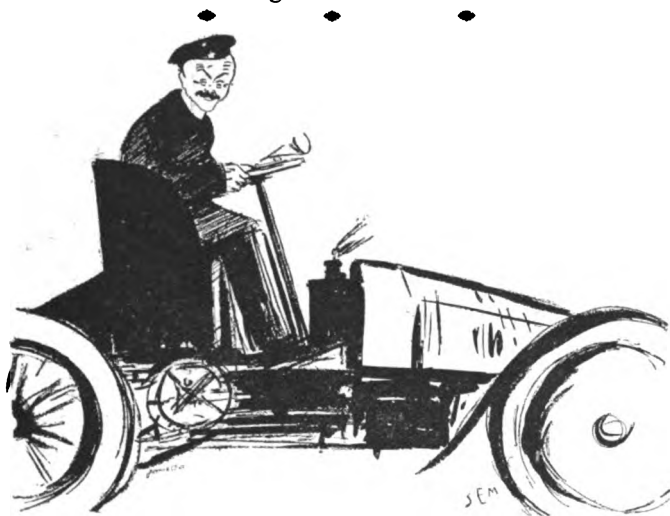
Produce Delivery by Motor-Car.

THE promotion of a company for the conveyance of fruit and farmers' produce generally and merchandise by motor-lorries between Maidstone and the metropolis, as well as other places, is in contemplation. Messrs. John Sibley and Co. have made a number of trials with a Milne's petrol lorry having a normal capacity of 45 cwts. The trial journeys thus far accomplished have given most gratifying and encouraging results. In one case a load of fruit was conveyed from Maidstone to London under six hours, starting at 8 p.m. and arriving at Covent Garden at 2 a.m., and the return journey was accomplished between 4 a.m. and 10 a.m. In another instance a load of merchandise from Maidstone was put on the Midland Railway at St. Pancras on the same day as the receipt of the order. On a third occasion fruit from Sittingbourne was delivered at Covent Garden at 3 a.m., the journey commencing at 7.30 p.m., and in short and repeated journeys with heavy loads the lorry has done far greater work in a given time than any pair of horses could have performed.

The Speed of Motor-Cars.

THE speed of motor-cars was one of the subjects discussed at a meeting of the Doncaster Rural Council last week. Mr. Batty (vice-chairman) said he had seen motor-cars travelling at the rate of from twenty to thirty miles an hour, which was extremely dangerous to traffic and to young children who might be playing in the roads. Mr. Harrison thought that motor-cars ought to be licensed, so that they could be easily identified. Mr. Kellett considered that motorists had no right to rush through a town or village as though it was

"thundering and lightning." He did not think the public ought to suffer because some maniacs had a motor-car. Magistrates at Lincoln and elsewhere had shown they had a "backbone" by the action they had taken when cases of furious driving had come before them, and he thought if other magistrates would inflict the full penalty the danger would soon cease. Mr. Batty moved that the West Riding Joint Committee be asked to enforce the law limiting the speed of motor-cars, and suggesting that they should be registered, and the motion was unanimously adopted. The same subject was also under discussion at a meeting of the Western District Committee of the County Council of Dumbarton last week, when Mr. F. C. Buchanan drew attention to the speed at which motor-cars travelled on Garelochside, alleging some of them whisked along at forty miles an hour. The chairman said he thought a prosecution or two would put down scorching and show that the county authorities were in earnest in the matter. It was agreed to instruct the chief constable to enforce the regulations.



CHARRON.—A CARICATURE SKETCH FROM *Le Rire*.

More Complaints.

AT the conclusion of the business at the Henley County Petty Sessions last week, Mr. Harrison said he wished to draw the attention of the police to the increased number of motor-cars running on the roads, especially from Reading to Henley, and the excessive speed that some of them travelled. Mr. Witherington also spoke, saying he had brought the matter before the Joint Committee at Oxford recently, and the chief constable said he would see what could be done. At the last meeting of the Camberley District Council, Mr. Brown drew attention to the excessive speed of motor-cars passing through the district, and moved that the attention of the police and Surrey County Council be called to the matter. Mr. Tew seconded, and said on one occasion he took the time of a motor-car which passed his place, and it took 4 minutes 45 seconds to get from there to a point over two miles away. Mr. Hollings said that, as a magistrate sitting on the Farnham Bench, he would endeavour to get any furious drivers who were brought before him fined as heavily as he could. The resolution was carried.

An M.P. on Motor-Cars.

CAPTAIN GREVILLE, M.P., though a staunch Conservative, is a powerful partisan of the motor-car. Not only does he ride one himself, but in a recent speech delivered on the occasion of a Conservative garden-party at Bradford, the captain went so far as to recommend the automobile to his constituents as a means of adding to the prosperity of the country. Captain Greville, who stated that his purpose was not to talk politics, alluding to the increasing popularity of motor-cars in this country, said we had been slow to recognise the value of these

self-propelled vehicles, but depend upon it they had come to stay. It was a great industry. One of the greatest problems of the day was the housing of the working classes, and, therefore, anything that made locomotion easier and swifter should be welcomed and encouraged. He saw in it great openings for young men with knowledge of machinery and engineering. A man who could drive and manage a motor-car would, with only a slight knowledge of engineering, be able to earn the same amount of money as skilled artisans whose training had been a matter of years.

Yorkshire Automobile Club.

A SHORT run will be held by the members of the Yorkshire Automobile Club to-day (Saturday) to Boston Spa, the arrangements being as follows:—Leeds members meet at City Square, 2 p.m.; Bradford members meet at Manningham Park, Lister Monument, at 2 p.m.; and Harrogate members at the Stray (Prince of Wales Hotel), also at 2 p.m. At 3.30 p.m. all members meet at Collingham Church and proceed to Boston Spa, where tea will be taken at the Royal Hotel. The arrangements for the return journey will be made en route. As several members have already signified their intention of joining this run the committee are specially anxious that all who possibly can attend will do so. The Committee is still open to receive suggestions from members as to destination and route of any future club runs.

The Tunbridge Wells Motor-Wagon Service.

THE London and Counties Distributing Company's motor-wagon service between London and Tunbridge Wells has been suspended. We understand that the stoppage is only of a temporary nature. The two wagons which have for the last few months been engaged upon the service have been found inadequate to cope with the large quantity of goods consigned to the company for prompt delivery, and many disappointments have resulted. In the course of a week or so it is proposed to resume the service by means of an increased number of vehicles, which it is hoped will be able to fill all the requirements of the body of traders who have not been slow to appreciate the advantages offered by the originators of the scheme.

No Sacrifice of Quality.

A STATEMENT in a contemporary to the effect that makers of motor-cars are sacrificing quality in order to cope with the demand is likely to seriously damage the industry unless promptly dealt with. There is, undoubtedly, a plethora of orders, but manufacturers know that repeat orders and recommendations—upon which so much depends—only come as the result of good workmanship and satisfactory running. At the time of the bicycle boom it was the case that quality was often overlooked in the desire for prompt delivery, but the patrons of the motor-car are fewer than were the converts to cycling, and hence makers cannot afford to play with the future of the industry.

Prying and Prejudice.

It would be impossible within available limits of space to enumerate all the localities where police persecution and officiousness hold sway, and an apology is due to those places which, though deserving, have unavoidably escaped mention in these columns. Not a year has passed since the liberal and progressive attitude of Southsea was a determining factor in its selection as a destination for the anniversary run in commemoration of the Act, a choice which was rewarded by a hearty welcome and invitation to repeat the same, which, alas! there seems now to be little temptation to accept. A visitor, writing to the *Southern Daily Mail* a short time ago, complained bitterly of the annoyance to which the police subject the motoring public, while a well-known resident writes to say that he is unable to take out his car with-

out a leash of mounted police following hot on the scent, and compelling him to go at a walking pace if he wishes to avoid the usual penalties—for in such a chase the race is seldom to the swift. It is, by some fortunate chance, not often that the local luminaries of the bench, who are themselves automobilists, occupy an unaccustomed position in court during motor cases; but it would be of local as well as general benefit if they use their influence to limit the efforts to suppress the coming mode of transit, which our holiday resorts, above all other places, would find it to their best interests to encourage.

The Speed Limit.

MODESTY, with regard to any suggestion for removing or altering the speed limit of twelve miles an hour to which automobiles are subject, has always been characteristic of the motorist. It is a notable advance, therefore, when the *Field*—the organ of the horse-owner and country gentleman—declares the restriction to be unnecessarily severe, and urges its abolition on three grounds. Motorists would probably have refrained from the advocacy of such a change, but the contentions of the *Field* must be recognised by all unprejudiced persons as sane and reasonable. "In the first place," says our contemporary, "it is distinctly unfair on this the newest form of locomotion that though the vehicles are capable of being handled and controlled with the greatest ease and precision, they should be subjected to such a restriction. In the second place, the restriction is a vexatious and unnecessary one, inasmuch as no one can form a correct estimate of the speed of a passing vehicle, therefore the evidence proffered, and on which convictions are often obtained, is absolutely worthless. In the third place, there is no call for the restriction when the interests and safety of other users of the highway are amply safeguarded by the law against driving to the common danger—a law which applies to the automobilist just as much as to any other rider or driver. Such a discrimination to the prejudice of one class of traffic savours of persecution, and it is difficult for an impartial observer to take any other view of this arbitrary curtailment of the liberties of one particular type of vehicle, more especially when the propensities to danger it possesses are obviously less than those manifested by other types."

The Tare Limit of Motor-Wagons.

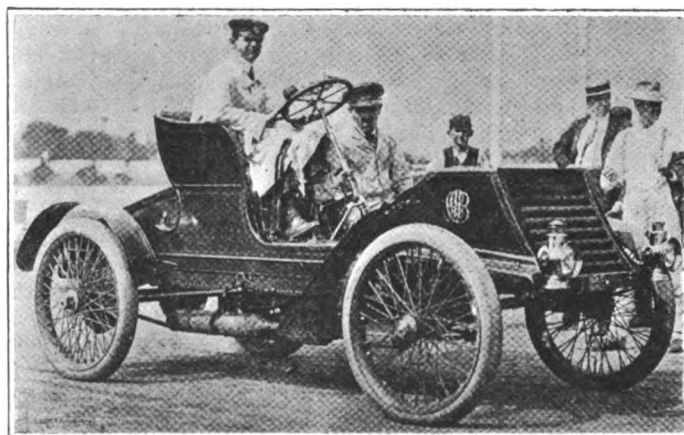
At a meeting of the Nottingham Chamber of Commerce, last week Mr. G.H. Cox moved the following resolution, submitted by the Liverpool Chamber, in reference to the tare limit of motor-wagons:—"That this association is of opinion that in order the better to meet the urgent wants of the commercial, trading, agricultural communities of this country in the matter of additional facilities for the carriage of merchandise and country produce on motor-vehicles, the tare limit now fixed for such vehicles should be raised without delay, in accordance with the representations already made by this association and others, to the President of the Local Government Board." In moving the resolution, Mr. Cox said there might be some disposition to attach but little importance to the subject, but in Liverpool it was a matter of considerable moment to commercial men, because of the necessity of cheapening transport, particularly in regard to short distances, and secondly, because of the development of the trade in motor-wagons, too large a share of which at present went to the United States and France, with a consequent loss to British trade. The tare was at present limited to three tons, and the Government had admitted that in fixing the restriction at that weight they were merely experimenting, but, in spite of all representations, they had refused to increase the tare weight. The result was that the builders were unable to produce a wagon that was strong enough to carry an economical load. The suggestion put forward in the resolution was that the total moving weight should be permitted up to 14 tons, with a maximum weight of 12cwt. per inch of the width of the tires, which should be a sufficient protection for the roads. Mr. B. Plummer seconded the resolution, which was carried without further discussion.

A Public Motor-Car Service in the Tyrol.

A VIENNA firm has recently started a service of motor-cars between Toblach and Cortina, in the Austrian Tyrol, the vehicles used being Daimlers, built at the Austrian Daimler motor works (Bierenz, Fischer and Co.) at Neustadt, Vienna. During the summer months three services a day are run in each direction, the journey occupying two and a quarter hours. Notwithstanding great opposition on the part of the coach and carriage owners in the district, the service has been well patronised not only by tourists but also by the natives, the cars, in spite of the hilly route, making the journey in much less time than the horse-drawn coaches. So great was the animosity of the coach and carriage owners that they inaugurated a boycott on the proprietor of the Hotel Croce Bianca, who, in Cortina, had charge of the sale of tickets for the cars. However, this difficulty has been got over, and the cars are still at work. On another page we reproduce an interesting photo of the arrival of one of them at Cortina.

Motor-Cars v. Tramway-Cars.

In the course of a paper read before the Engineering Section of the British Association at Glasgow, yesterday, Mr. Norman D. Macdonald referred to the competition of trams and motor-cars. The author remarked that in briefly looking at some points under this head, it was necessary to remember that we are in the midst of the revolution which railway men had been warned to be ready for—the competition of electric trams. But very shortly both trains and trams will have a much more serious competitor in the more convenient, swifter, safer (than trams), and handier public service motor car. Indeed he would be bold enough to say that in the city of Glasgow, which with its usual enterprise and energy, has provided itself with a large and splendid system of trams, in a very few years they will be voted as slow, inconvenient, as gross blockaders of the streets, and will be removed in favour of swift automobiles, and some approach to decent street surfaces attempted, as more to be desired in the public interest.



MR. A. C. BOSTWICK ON HIS 40 H.P. WINTON RACING CAR.
[The Automobile Magazine.]

A Fall from Wisdom.

Is the *Morning Leader* suffering from "summer madness?" The concern with which the three halfpenny morning journals of London have regarded the automobile is one of their chief recommendations to many people. And now the *Morning Leader* has strayed from the fold, and expressed the hope that motorists will have to make roads for themselves—just as the railways have done. But, worse than that, our contemporary adds: "We hope the Chancellor of the Exchequer will keep these worthies"—i.e., motorists—"in mind

against his next Budget." Is the writer of that sapient paragraph unaware of the licence fee already paid? Surely it is enough to have to pay that without any special tax being imposed. But it is hardly likely that Sir Michael Hicks Beach will give heed to the suggestion of the *Morning Leader*, for his *Leader* is among the motorists, and many of his supporters incline their favour towards the new locomotion.

Sir H. Thompson's Testimony.

SIR HENRY THOMPSON'S letter to the *Times* of August 27th has been productive of a shoal of correspondence, to which has been added another important letter from Sir Henry himself, in which he deals with the absurd suggestion made by a correspondent that no motor-cars should be made capable of running more than the legal limit of twelve miles an hour. "Had he known anything of the principles of motor construction and driving," says the eminent doctor, "he would have been aware that no car thus limited in power would ever ascend a hill. One cannot have less than sixteen miles an hour in reserve, or the motor driver would, like a cyclist, have to push his machine up the hill. One requires exchange of speed into power, and in order to ascend a steep hill one often climbs at only four miles an hour, if less steep at eight or twelve." But the *minimum* of speed in reserve for all purposes, and there are several, is about twenty; and the rate at which Sir Henry drives on a level, straight, roomy road, where he can see his way well, is a mile in four minutes, producing, with hill climbing, about an average of twelve miles an hour. His car is a 6½ h.p. Daimler *tonneau*, and he drove the other day to Bedford from Hemel Hempstead—about seventy miles there and back—in about 5½ hours, wearing his ordinary spectacles. Sometimes he dons "goggles"—faintly neutral tinted glasses with narrow pale coffee-coloured surroundings.

"No Doubt at All."

So interesting has the correspondence on motor cars become that the *Times* has been well advised to devote a leading article to the subject, opening with the declaration that the motor-car has come to stay. "Of that there can be no reasonable manner of doubt," said the character in a recent comic opera. "We cannot doubt it," gravely writes the *Times*. Summing up the results of the automobile, its social services are rightly recognised and the effect on suburban train traffic, the bringing of Brighton within a day's drive, and the improvement of the delivery of goods and produce are all touched upon. Then follows a mild criticism on the speed question, and the unhappy way in which Parliament dealt with the question in 1896 is referred to. But the point of the article is that which we have always urged, viz., that "the right of all persons using the highway is equal and co-ordinate," and that while drivers of horses must not be too fastidious and too nervous, motorists must show a general consideration for the rights of others. With toleration all round much unpleasantness would never have occurred. We hope the result of Sir Henry Thompson's excellent efforts to defend the automobile will be to convince horse-owners that sweet reasonableness should characterise their action and utterance—as it should certainly be an attribute of the motorist.

"A Daniel come to Judgment."

A PRACTICAL, sensible, Yorkshire magistrate—from whom we shall be pleased to hear—has done an unique thing. Instead of, like so many other magistrates, pouncing upon automobilists with the vigour usually meted out to rogues and vagabonds, he has "with a view to testing for myself the rights and wrong of the matter," bought a motor-bicycle upon which he has travelled about 500 miles in Yorkshire. He passed five or six hundred horses; only two turned round—both young horses that were being broken in—and not more than three or four showed any inclination to shy. He soon discovered that a pace of twelve miles an hour seemed almost intolerably slow, and he—a magistrate be it remembered—actually managed to attain a

speed of twenty miles an hour without murdering a man, woman, for chicken, and without being observed by a policeman. This Yorkshire magistrate now regards it as the duty of horse owners to educate their animals, and declares against the limitation of speed. The rational course to adopt, in his view, would be to punish drivers doing damage or furiously driving, for eight miles an hour is often too fast in a town and thirty miles is not too fast on a deserted highway.

The King of the Road.

"X RAY" contributes to the *Lincoln Leader* one of the most sensible articles on motoring that we have seen for some time in a provincial paper. He rightly differentiates between motoring and motorists. "We have not to consider the mechanism of the motor," he says, "but the character of the motorist. The latter has become, by force of circumstances, the king of the road. Having obtained such a position he should not seek to take advantage of its superiority by ill-mannered conduct and ungentlemanly behaviour."

Aberystwith Wisdom (?)

THE unfair attitude of Dundee magistrates towards enterprising townsmen, recorded in last week's *Journal*, finds a companion picture in the arbitrary conduct of the Aberystwith Council this week. Mr. Hollier has had a licence for the conveyance of the public by motor-car. He has carried many passengers and no complaints have been made. But when he sought to renew his licence the Council decided that he should discontinue running the motor-car after six o'clock in the evening, and that it should only be run for one hour in the afternoon and one in the morning. According to the bye-laws of the town vehicles can ply for hire between seven a.m. and ten p.m.; but now motor-cars are to be restricted to two hours' work in two portions and before six p.m. This is not only arbitrary and unjust, but we doubt its legality. Equity is the proud boast of the British law, and there must be equal treatment for all drivers—whether of motor-cars or horses. We hope Mr. Hollier will be well supported in his plea for fair play.

An Interesting Volume.

MESSRS. HUGUET AND MINART, of Paris, have sent us a copy of the 1901 edition of the "Grand Album Illustré de l'Industrie Automobile" which they have recently issued. The work, which is elaborately got up, is devoted to a review of the latest productions of the leading automobile constructors in France. The left-hand pages are occupied with large-size illustrations of the various vehicles—petrol, steam, and electric—while descriptions of the same are given on the right-hand pages in three languages—French, English, and German. The book opens with a section devoted to some of the principal events in the automobile world in 1900, reproductions being given of photos of some of the most successful *chouffeurs* in last year's races on the Continent, and also of some of the leading members of the French Automobile Club. Another section is devoted to touring, and here again some very interesting pictures are given. Altogether, the work is most attractive; and though its size is rather large, it should form a useful addition to the automobilist's reference library.

THE Crane Cycle and Motor Engineering Works, The Pavement, New Malden, Surrey, are keeping a stock of oil and general motor-car accessories. They are also able to undertake any necessary repairs.

ONE of the latest converts to automobilism is Mr. Horace Mayhew, of Broughton Hall, Broughton, near Chester. He has just had delivery of a new 4½ h.p. genuine De Dion phaeton. The car, which is painted dark red with black mouldings, is a very handsome and exceedingly comfortable vehicle for four riders. Mr. Horace Mayhew, who is a relative of Mr. Mark Mayhew, is Deputy Lieutenant of Cheshire, and no doubt his example will lead to a further increase in the number of automobilists in that county.

The Big Event of 1901.

THE GLASGOW RELIABILITY TRIALS.

(Concluded from page 498.)



THE SECOND DAY.

ON THE LANCHESTER CAR.

On Tuesday my allotted place was upon the Lanchester carriage, but when I reached the storage building about 7.45 a.m. I found that, owing to having arrived in Glasgow only the previous night at a late hour, Mr. Lanchester was not proposing to run. I was disappointed, of course; specially as ever since the Petersham Hill climb, now long ago, experts had been looking forward with high anticipation to the finished product of Mr. Lanchester's genius. It was, however, not a bad thing to have a quiet morning, as these trials are pretty fatiguing, although so pleasurable; and it was arranged for me to have a short drive in the afternoon. We started at 2.30, and pursued the road by which the cars were to return. We got only a few miles beyond the outskirts of the city before we met the stream, headed by the *soi-disant* 16 h.p. Panhard; but the trial, short as it was, demonstrated one of the chief features of the Lanchester construction—that is to say, its suspension on rubber buffers as well as springs. It is little exaggeration to say that one travels over the roughest pavement without feeling it. In the open country for the sake of showing this point we drove repeatedly on to and off a sidewalk, perhaps four inches high. The control of the car, which, of course, is peculiar to itself, makes it very easy and pleasant to handle in traffic. In the car in which I was driven two defects were apparent: the cooling was insufficient and the metal faces of the clutch squeaked; but these are to be remedied at once.

I ventured to say to Mr. Lanchester that I hoped that ere long the carriage would give proof of its ability to stand long journeys and hard pushing as satisfactorily as it stands the conditions of town work. ARUNDELL WHATTON.

THE THIRD DAY.

Owing to having to go to press early, we were only able to briefly refer to the proceedings of the third day (Wednesday) of the trials. The programme for the day was a run to Callander and back, *via* Torrance, Fintry, and Thornhill, a distance of ninety-nine miles and a-half, and a hill-climbing competition. The long twining track which runs from Lennoxtown over the shoulder of Fintry Hill was chosen for the latter test. The start was made, as usual, from Kelvinhaugh Street at eight in the morning, thirty-four cars getting away within a few minutes of each other. The morning was dull and grey, threatening rain. The ascent from Lennoxtown was well begun, but soon the tail lengthened out as the heavy gradient, which rose as steep as one foot in ten at parts, began to tell on the low power vehicles. The test was an extremely stringent one, and several cars which had come through both the previous tests with high marks found themselves wanting on the long and not too carefully metalled road that wound up the bare hillside.

Callander was reached by P1, a 12 h.p. Panhard car entered by the Dunlop Company, at 11.13, and twenty others arrived within half an hour. The run home in the sunshine by Aberfoyle, skirting the borders of the Menteith Moss, was among the most enjoyable of the week. At the very moment of the minimum time car P1 entered the Exhibition grounds, attended by half a dozen others in hot pursuit. By five o'clock twenty-three cars had reached the grounds, and ten more came in before eight. The marks allotted to the different cars for the run and for the hill-climb are shown in the table on another page.

ON THE M.M.C. VOITURETTE.

The casualties of Tuesday further reduced the list of starters for the hill-climbing contest and trip to Callander on

Wednesday, the 11th inst., the total number stopping short at thirty-three. In consequence of so many cars being unable to run from some reason or other, a small crowd of honorary observers and pressmen were left behind, being unable to find seats. As for myself, I was fortunate in being offered a seat in the M.M.C. voiturette, which was not engaged in the trial, but was on some kind of roving expedition that I never understood; anyway, I found it a nice change to be able to stop now and again after having had two days on the milestone-devouring cars, and there was the further advantage that we had the road practically to ourselves, and so escaped the great bugbear to riding in company—dust. The morning was again dull, but as the day wore on the sun got out, and we saw the country through which we passed under every aspect of light and shade.

We did not leave Glasgow until over an hour after the first competing car had left, so saw nothing of the hill trials, though



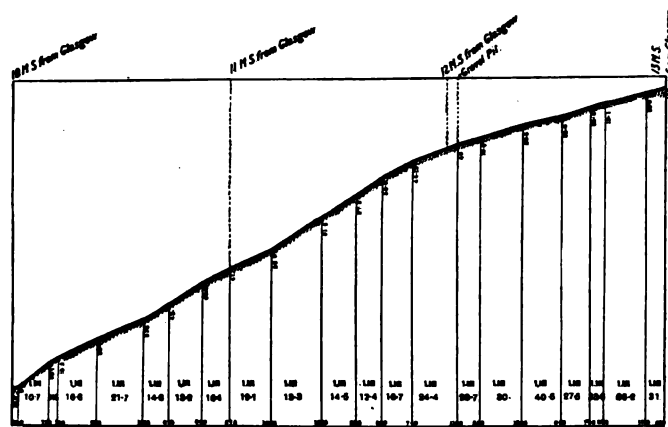
A GROUP OF OFFICIALS.

on arriving there we heard that the New Orleans voiturette, the two Locomobiles, and one of the Wolseley cars had gone particularly well, as had the De Dion voiturette. Just short of the foot of the hill we came across the remaining Star voiturette drawn up under the hedge side, the bevel gear having gone. At the foot of the hill two or three large private cars were drawn up, one a Delahaye, on which was a distinguished party, including Lt.-Col. Holden. Our own little car tackled the hill well, but as we were not officially engaged in the trial we did not push it to the utmost or time it, but we were well up the hill before we had to call on the third speed.

At the top of the hill we found Mr. Secretary Johnson and timekeepers, with three or four knights of the camera. Just before reaching the summit we passed the M.M.C. delivery van, climbing steadily up with its ton of dead weight, and doing remarkably well, as it did each day. From the summit down to Stirling the hill on the other side is equally steep, and on reaching level country we overtook one of the New Orleans cars pulled up for puncture, but as we stopped for water a little further on it re-passed us. All

this time the views, ever changing, had been beautiful, and Stirling Castle stood out against a perfectly clear sky in bold relief. From the outskirts of Stirling to Callander the road is for the greater part dead flat, and we made many fast miles, but no vehicles were overtaken, which showed us that practically all the cars must have been going well.

Talking of reliability, we made a calculation as to what time the cars would meet us on the return journey, this when we were about eight miles from Callander and travelling at top speed. By



PROFILE OF FINTRY HILL.

Total distance, 3 miles, 7 yards; Total rise, 843 feet;
Average gradient, 1 in 19.1.

calculating our own speed and the pace we knew the leading cars were likely to come at, in combination with a punctual start on their part and official time on our watches, we located the point to well within a quarter of a mile at seven miles from Callander, where twenty-two cars passed us in nineteen minutes, and pretty much in the same order as we afterwards found they had arrived at the Exhibition. On reaching Callander the only cars left in the place were Mr. Cordingley's Napier and the New Orleans, both of which got away some little time in front of us. On the run home from Callander to Glasgow, 48½ miles, we encountered but one car—the Decauville voiturette—just before entering Aberfoyle, a puncture having caused the stoppage. Soon after this our own ignition was bad, and a search disclosed the fact that the solder which fixes the platinum tip had broken away. The tip was still there, but, being loose, it naturally worked intermittently. After fitting a new trembler to the contact breaker we had a splendid run back to Glasgow in something less than official time, the first twenty miles being through typical Scotch mountain country, and all in the car voted this the best trip of the week so far.

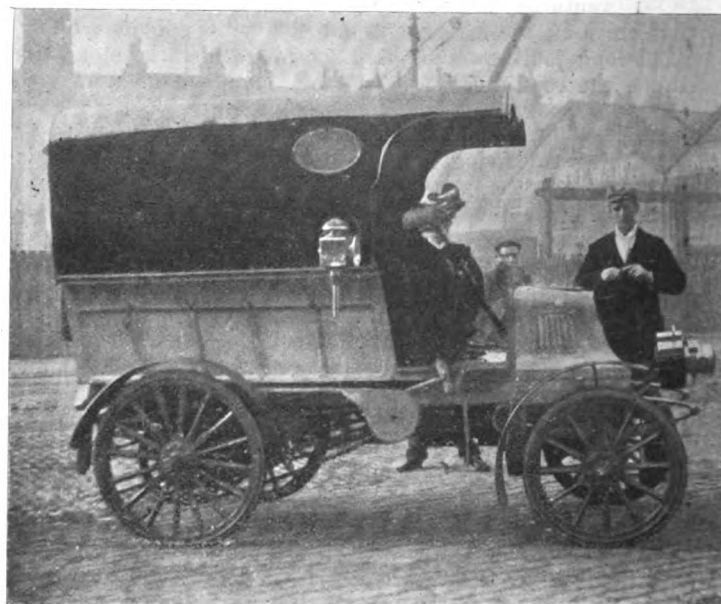
On arriving at the Exhibition grounds it was found that the three Panhards were first back, as on the previous day, and that the greatest number of marks in the hill climb had been awarded to the De Dion voiturette, in section I. (131 marks), and to Mr. Exe's New Orleans (155 marks), in section II. The Panhards, De Dion, M.M.C., and Stirling now stand well.

T. H. H.

ON THE "POWERFUL" ELECTRIC CAR.

To-day (Wednesday) I went with the "Powerful." As we were running under somewhat different regulations from those governing the other vehicles, we left a little before eight; and glided noiselessly along at a steady ten to twelve miles pace. Several cars went ahead before the Control, but we gained by being able to go through without stopping. A few easy stretches, a nasty right angle turn between walls, where I feared afterwards to hear there had been some incident, and we were at the bottom of Fintry Hill. The worst pull is experienced at the start; after that it is merely a long steady grind, at no point steep enough to stop any car of modern build. We stayed a moment or two at the bottom to remove the covers of the motors, so as to let the air get to them and keep them as cool as might be. For a part of the distance Mr. Chambers and I walked,

leaving the observer and the driver in the car. Although, of course, the fastest vehicles went by us almost as if we were standing, yet it was about as much as one could do to keep level with the Powerful at a steady trot. We did a mile or more in this way, and then both we and she wanted a breather. The discharges had necessarily been heavy, and the motors were heating. At the end of a quarter of an hour or so we did another spell in the same way, and then rested men and machine once more. The total time taken was fifty-four minutes, and the average pace while moving about seven miles an hour. Considering that the electromobile has to drag a dead weight of one ton of batteries, this performance must be regarded as quite excellent. So we turned the top and began to run down. Here and there we were able to recuperate a little; but in view of the trying road, it had been arranged to go only to Stirling, and there to re-charge. On reaching the plain, therefore, we plugged steadily forward with the grandly-placed Castle and Wallace Monument always growing more distinct before us; and, entering the city, made straight for the electric light station. The voltage, however, was so good that it was decided to risk the return journey without taking in more energy. But we were destined to disappointment; for the meter-hand went back so rapidly that some fifteen miles before reaching Glasgow it became evident that we could not complete the distance. Fortunately, the district about Kilsyth is full of coal mines, and we were directed to one which possessed an electric plant. Here we remained two hours charging off the dynamo; and then, somewhat hungry, but thinking our troubles over, set out again. The off-side motor had been sparking more or less since Fintry, and it was clear that some damage had been done by the intensity of the current passed through it. This accounted for the accumulators not holding out. Things quickly became so bad that drastic measures were required. The electricians of the party discovered a "short," and tried to remedy it by cutting away the binding wire, and by so altering the connections of the fields that the dynamo was generating instead of driving; but it finally became necessary to uncouple the motor on that side altogether, and rely



THE M.M.C. DELIVERY VAN.

upon the other. It was wonderful how it moved the heavy vehicle along: certainly we made better progress than at any time in the day previously, showing that the faulty motor had been doing only more harm than good. The difficulty was that with every movement of the switch sending more power to the one working motor there was, of course, a strong tendency to swerve away to the right; and the plan was adopted of one of the passengers working the switch-handle so that the driver need never take his hands from the steering bar. I was dropped at the Hotel at

10 p.m., having had an enjoyable and instructive day. While recharging, some of us took the opportunity of descending the mine (Drumbeck, I think was the name of it); the shaft of coking coal is one of the deepest in Stirlingshire, and the plant one of the most modern.

ARUNDELL WHATTON.

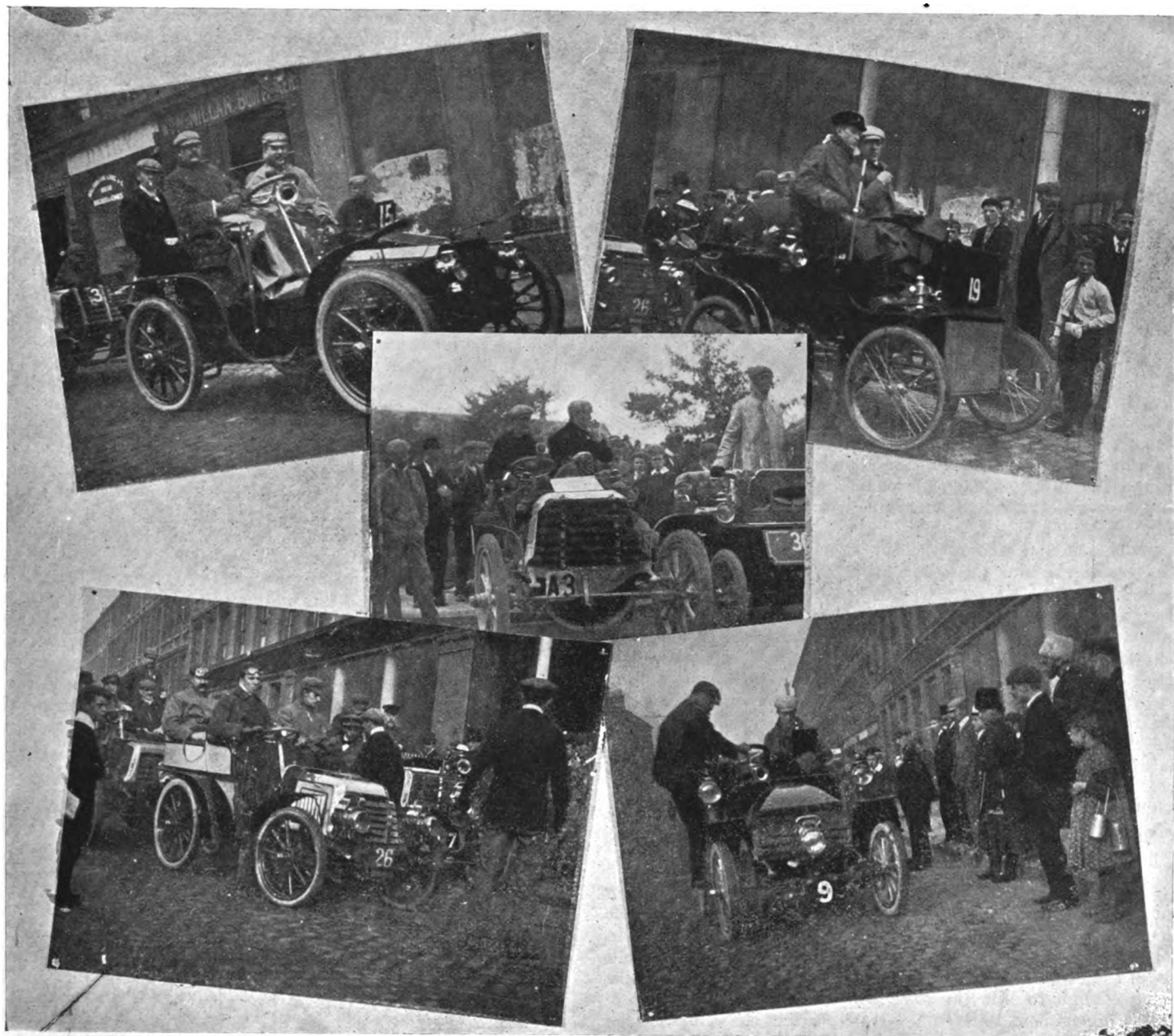
ON THE CLARKSON AND CAPEL CAR.

The new car entered by the Clarkson and Capel Steam Car Syndicate could not be finished in time for the trials, so a Locomobile fitted with Clarkson burner and return water apparatus

return journey. On Tuesday the car ran to Ayr with one stop for water. The damaged axle again gave trouble and ran hot all the way. The return trip was made without a stop, the pace averaging about twelve miles an hour. It may be mentioned that this is the only car in the trials which ran with paraffin oil.

ON THE 6 H.P. BARDON CAR. (No. 17.)

The special feature of this car is the motor, developing 6 h.p. on the brake, this being of the vibrationless type with only one cylinder, in which work two pistons with the charge explod-



THE MILNES "C.P.C." 12 H.P. CAR.

THE HON. C. S. ROLLS' 20 H.P. PANHARD CAR.

THE 7 H.P. LIGHT PANHARD CAR.

THE LOCOMOBILE STEAM CAR.

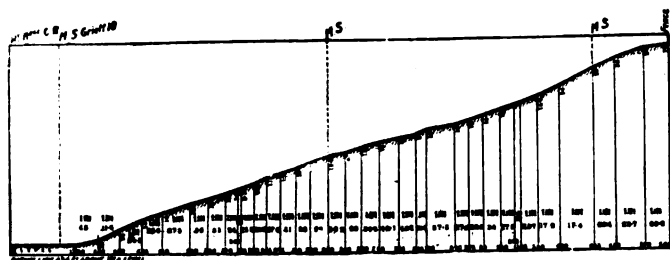
THE 5 H.P. WOLSELEY CAR.

was very kindly placed at their disposal by Dr. Hamilton, of Dartford. Unfortunately it suffered injury in the railway journey to Glasgow, some of the results of which did not at first appear. On Monday the car ran to Edinburgh without a stop for water. Just after leaving Edinburgh a serious leakage of paraffin was observed from a damaged pipe joint, necessitating a return to Edinburgh for repair, and in this way a couple of hours were lost. The driving axle also gave trouble and somewhat impeded the running. Glasgow was reached about 9 p.m. after completing the whole trip, the water tanks were refilled at Lanark on the

ing between them. The car is fitted with an aluminium body and two seats only. After wending our way through the traffic, we arrived at the outward control for Glasgow, where we were detained about ten minutes to allow the leading cars to get off. In stopping at this control, the following car, which was a little close on our heels, failed to pull up in time, and ran into us. Fortunately, no damage was done except the removal of a little paint. Immediately after the start we passed through the village of Bishop Brigg, where the inhabitants had turned out in strong force to welcome the cars. Having successfully negotiated a

canal bridge which was only just wide enough for the cars to pass, we then prepared for the first hill-climb of the trials. The hill in this case was three miles in length, and led up the mountain side after making many awkward turns. Our little car went up at a steady pace of about nine miles an hour—a very fair performance considering the loose condition of the roads. On reaching the summit a good view of the surrounding country was obtained, and a fine run of two miles across the top was slightly marred by a mist, which held the dust made by preceding cars in suspension and made travelling somewhat unpleasant.

A safe descent into Firtry was then made, the road being still loose and with many bad bends; the slope, however, came to



PROFILE OF GLENEAGLES HILL.

Total length, 2 miles, 754 yards; total rise, 422 feet, 8 inches; average gradient, 1 in 30.3.

an end none too soon, as our brakes had started to fire as the bottom was reached and would have necessitated a stop to cool down had we had to use them further. A good, steady, non-stop run was now made to the Callander control, after passing through the pretty village of Doune, where the road led for about two miles through an avenue of trees meeting over our heads.

Both man and car now took in oil and fuel, and on restarting a successful run was made for about fifteen miles, when, after descending a hill with clutch out, our motor failed to restart. After a short inspection the driver located the cause, namely, that one of the battery connections had vibrated off its terminal. This was quickly set right and a fresh start made, but meanwhile three other cars had passed us. Having successfully run a few more miles we were again stopped from the same cause, but this time it was the other wire. The connection being remade, we ran safely into Glasgow without further incident, finally arriving in the Exhibition at 3.30, to find that we were well placed in the line. The motor ran perfectly throughout, and but for the incidents mentioned a most satisfactory and speedy run was made.

R. H. S.

THE FOURTH DAY.

Thursday's programme comprised a run to Stirling (the route covering a distance of ninety-six miles) and a hill climb at Gleneagles. The start was made from the storing hall in Kelvinhaugh Street at the usual hour—8 a.m. The morning was of the brightest description. There was, however, a breeze strong enough to lift the dust which was disturbed by the cars. When about twelve miles from Stirling the wind became palpably stronger and more keen, although the sky was mostly blue and the sun was unveiled. Stirling was reached shortly after one o'clock, and here the cars were housed and the motorists adjourned for luncheon, a restart being made at 2 p.m. Outside of Loaninghead the hill-climbing test began, a stiff 2½ miles, which showed gradients as steep as 1 in 17.4 at parts. The bulk of the cars did better than on the previous day, and one astonishing performance was made by No. 16, the New Orleans vehicle, which did so well at Fintry. The marks allotted it for the feat were 215, an award much ahead of any of the others. The home run proved uneventful save to No. 18, the 10 h.p. Bardon, which broke down at Kirkintilloch so seriously as to prevent it again competing. The first vehicle to arrive at the Exhibition was Mr. Harvey du Cros's Panhard,

which drew up at 3.50. Another Panhard, the 18 h.p. Daimler, the 9 h.p. Napier, and the M. M. Company's big car came in at practically the same time. Within a few minutes ten others had taken up their position, and by seven o'clock the cars were all in with the exception of the Bardon vehicle.

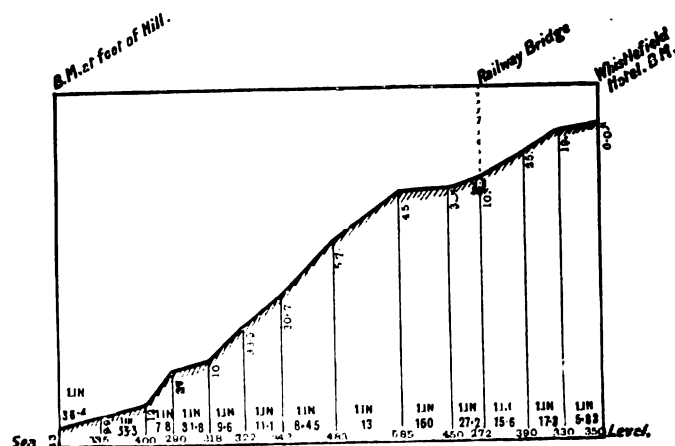
ON MR. CORDINGLEY'S 10 H.P. NAPIER AND THE "C.P.C." CAR.

On Thursday Mr. Cordingley most kindly offered me a seat in his *tonneau*. With agreeable conversation, constant variety of scene and grade, and every comfort in travelling, the morning's drive proved one of the most pleasant of the week. The bulk of the work was done before lunch, and in excellent style. From Stirling I returned in the smaller Milnes car, by the courtesy of Mr. Burford. We had a halt at the outset, owing to the gear wheels which drive the magnets having worked themselves into a wrong mutual relation and so causing premature firing—rather a curious derangement. When this was diagnosed and rectified, the car ran as well as the other which I described last week. The road was that which we had traversed on the "Powerful" the day before.

ARUNDELL WHATTON.

THE FIFTH DAY.

The final day of the trials (Friday) had for programme a run of 115½ miles to Tyndrum and back. The route was probably the most severe of all the trials. It was decided by the judges not to give marks for the Whistlefield hill-climbing test, but the performances of each car might be, if desired, recorded by the official observer. Thirty cars put out from Kelvinhaugh Street in the morning, these including a private Edinburgh vehicle and two other non-competitors. Running easily through the Dumbartonshire towns, the early cars made Garelochhead about eleven, and began the ascent toward Whistlefield. This hill is renowned as one of the worst in Scotland, not only for its steep ascent, which rises for 240 feet at a gradient of 1 in 7.8, but because the sharp bend at the foot makes it impossible to get way on at the beginning. Several cars failed to reach the summit and had to call in manual assistance, and most of them had to shed passengers on the way. Wonderful driving was shown in the run along the undulating zig-zag road by the side of Loch Lomond. Tyndrum was reached about a quarter-past twelve. The home run was made in cloudy weather, but little rain fell until most of the cars were in the Exhibition grounds, the first car to enter being the 18 h.p. Daimler, followed by the 10 h.p. Wolseley and the 9 h.p. Napier. Twenty-three cars had lined up before seven o'clock. On another page is a table showing the marks accorded to the different cars.



PROFILE OF WHISTLEFIELD HILL.

Total length, 1,629 yards; total rise, 297 feet, 9 inches; average gradient, 1 in 16.4.

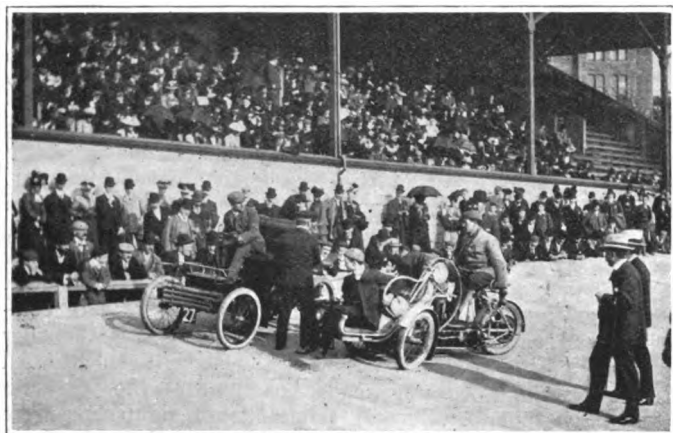
ON THE LANCHESTER CAR.

The organisers did well to put Friday's route on the last day of the trials, for it was both the most beautiful and the

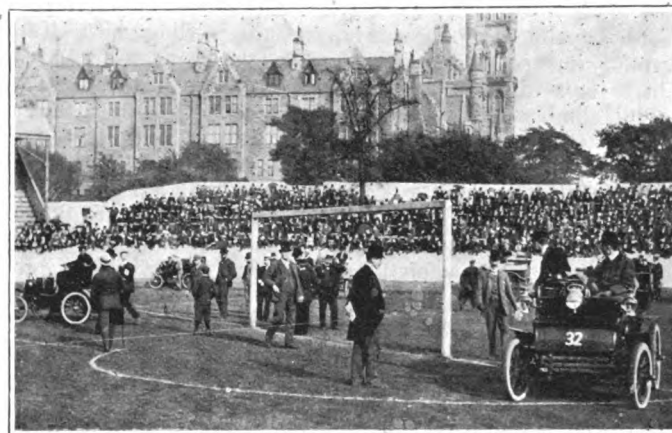
most exciting. Mr. Lanchester took me on board. The carriage we were upon was geared rather low, and consequently not fast on the flat; but it was with delight that we skimmed along over surface bad and good indifferently, up hill and down, almost unvaryingly at a comfortable but by no means contemptible speed. Through Dumbarton and along the Gareloch the road is more and more charming at every turn. Between Gareloch-head and Whistlefield is the great climb, so severe that at the last moment cars were excused by the Committee from having their performances officially chronicled, unless they should signify their wish. We wanted to see the cars ascend, so waited on the steepest section. The Lanchester went up meanwhile unchecked. As one watched, nothing was more noticeable than the difference made by good and bad driving. Almost at the first one car was allowed to stop in the centre of the narrow road, so as to block

ON A 16 H.P. PANHARD CAR.

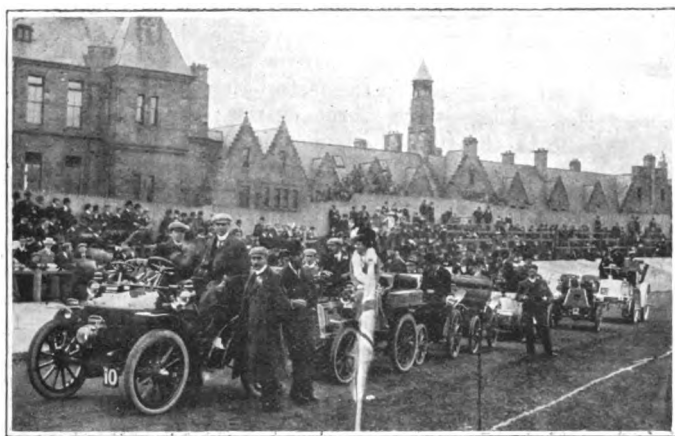
On Thursday I was unable to get a mount on any car through the very imperfect arrangements which had been made for the accommodation of the Press. So it was a double pleasure to know that I had a good mount for to-day (Friday). It has frequently been proved that one man's misfortune is another's gain. I had arranged to take this run with Mr. C. Jarrott on the 7 h.p. light Panhard, the little car which had done so well on the other trips, and as this was to be the run *par excellence* of the week it was extremely aggravating to all concerned to find out at the last moment, when the cars were drawn up on the outward control for starting from Glasgow, that one of the wheels had developed a weakness in the spokes, which was deemed sufficient to make it unsafe for the long and



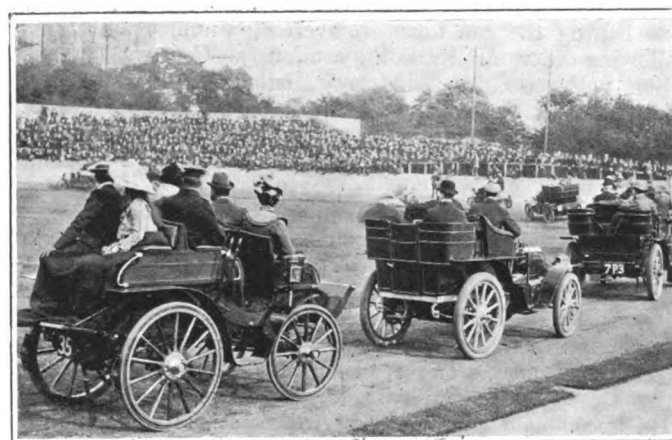
Start of 5-miles Race for Petrol Cars.



Start of Steering Competition.



Lining up for Parade of Vehicles.



Parade of Vehicles.

Photos by)

SATURDAY'S SPORTS ON THE EXHIBITION TRACK.

[T. and R. Annan.

the way for another immediately behind. One of the most powerful vehicles for its weight was stopped at the foot through nothing but want of skill. Several drivers allowed their cars to come entirely to rest while they fumbled for their lowest gear, and then they could not pick-up again. One or two ran back; the car which carried the most efficient sprag, a double one, was one of those which did not need it, but went up best. The Renault had a narrow shave, getting its rear wheels into a shallow ditch between the road and a sheer hillside; had it backed a yard further, there would have been some fearful consequences. The Clarkson did come to grief. At last everyone was up, shoved up or otherwise. Then a lovely coast down to Tarbet, where the Lanchester party had lunch and turned homewards. Getting back in nice time, I saw something further of the Exhibition and the arrival of the remaining cars.

ARUNDELL WHATTON.

trying journey before us. This was only discovered at the precise moment that the leading cars received orders to go, and for a moment it seemed as if I was to be deprived of a run for the second time.

But, fortunately for me, Mr. Jarrott is a man of resource, and a moment later we were on the way back to town for the big 16 h.p. Panhard, which, of course, was not entered as a competing car. On arrival at the Dunlop depôt, where the big car was stored, very little time was occupied in filling up the petrol tanks, lubricators, etc., but by the time we got back to the Control the others had a start of 1 hour 5 minutes, and we knew that by this time the leaders would be well away up the Gareloch. Once clear of the Glasgow suburbs, however, it was evident that we were on a car that could move, and that, all going well, we should not for long lack company. Over the rough Glasgow paving and the vile macadam of the suburbs, the car

moved with perfect smoothness and wonderful freedom from vibration, and even with only the third speed in we were making good time.

Fourteen miles from the start we caught up the delivery van, and soon after that the electric car, and then we had some "small adventure" about a mile through Dumbarton. Here we encountered a herd of cattle completely blocking the road, and it took a fairly long "dead slow" to get through them. On seeing a clear way Mr. Jarrott let the car go on, and at this instant the driver of the cattle seeking "some small advancement in the cause of chivalry," or otherwise, thought fit to strike a blow at Mr. W. H. Kingsbury—who occupied the front seat with Mr. Jarrott—with a stout rope which had previously been utilised for driving the cattle. Quick as lightning the foot-brake was down, and W. H. K. was "busy."

Two miles further the "Argyll" voiturette was passed, with a display of air tubes, then, soon after, Mr. Burns' "Daimler," Mr. Creber's "Albion," going slowly, and the Stirling voiturette (stopped for repairs) were despatched to the rear. At 10.28, or a little over an hour from the start, we were at the foot of the hill climb after a sensational run over the switchback road along the Gareloch. The road here is very narrow, with many sudden curves, and nothing but a low stone wall between it and the water. We were now well up with the main body of the lower powered cars, which were struggling up the tremendous Whistlefield Hill, which has some gradients as steep as 1 in 8. The whole hill side was covered with cars of all shapes and sizes, some going up slowly with all passengers aboard, many others being pushed or assisted, and a few stuck altogether. Our time to the top was somewhere about the even three minutes, and though I did not know at the time I afterwards learnt that four minutes had been considered very good time for the competing vehicles. The descent of the other side was equally steep in places, and competing cars were not allowed to pass each other, but we travelled at a pace at which I should have been distinctly uneasy had the driving been in ordinary hands. During the run down we overtook a number of cars in the following order, all proceeding cautiously—Century tandem, De Dion voiturette, Mr. Siddeley's Daimler, Milnes' 16 h.p. C.P.C. car, 8 h.p. Arrol-Johnston, 6 seated M.M.C. wagonette, M.M.C. voiturette, and the 14 h.p. Gobron-Brillié; then three miles further on the flat, the 6 h.p. Bardon and the Decauville voiturette.

At Tarbet, where the road joins the one skirting Loch Lomond, we were only half an hour behind official time from the leading competing car, and here we commenced the most picturesque part of our journey—lake and mountain vieing with each other in adding beauty to the scene, though unfortunately Ben Lomond and the surrounding heights were veiled in mist. The road on this stage is so narrow that no two vehicles can pass, so when we caught up the No. 19 Locomobile just outside Ardlui at 11.45, and the Wolseley a little farther on, our onward progress was barred. At Crainlarich we once more got away, and from here to Tyndrum the turning point in the journey, the road was one continuous climb for over five miles, but on top speed we simply flew along, though the beating of the engines slowed down to a low point once or twice. The first cars to get through to Tyndrum were the 18 h.p. Daimler, Mr. Du Cros' Panhard, 10 h.p. Wolseley, the Dunlop tired 12 h.p. Panhard, and the No. 16 New Orleans. We arrived about 25 minutes behind the leading car.

During lunch we had a smart shower—the first of the week—and this was welcome, for it made the return journey pleasanter by settling the dust. We started on the run home at official time (1.30), getting away in front of the first competing car, and in the run down to Tarbet, met several of the late comers, the Albion, the Argyll, Mr. Burns' Daimler, the Stirling, the Renault, and the M. M. Co.'s light carriage, the latter being only two miles from Tarbet on the outward journey. This was a magnificent run, the sun having come through and lighting up the ever-changing mountain view, whilst our speed was exhilarating to a degree. We reached

Tarbet, 20½ miles, by 2.23, and there had a pleasant 30 minutes' wait for the first of the competing cars. The first three to arrive, all within a minute or two of official time, were the 18 h.p. Daimler, Mr. Harvey Du Cros' Panhard, and the 10 h.p. Wolseley. The Dunlop-tired Panhard punctured at eight miles from Tarbet, and a new air tube was fitted very smartly in something under five minutes. We next overtook the New Orleans busy with tires, and soon after we stopped to inspect one of our own for suspected puncture, but found all well and made the rest of the run in very fast time over a fine level road along the side of Loch Lomond to Dumbarton, and so to Glasgow. During this period I ceased taking notes of vehicles passed, but we passed all but the first two, the 18 h.p. Daimler and the 7 h.p. Panhard which were first and second respectively to arrive at the Exhibition.

T. H. H.

THE END OF THE TRIALS AND AFTER.

Saturday morning's scene at the Grand Hotel, Glasgow, was just as lively and brisk as on other mornings, but the hour of excitement was somewhat later. The coffee-room was, however, full up by eight o'clock, the judges having their labours to complete, the competitors their cars to attend to, and all something or other to occupy their time. The early part of the day was a dull one, and the prospect of the procession seemed somewhat remote. However, after midday the sun shone, and the afternoon proved gloriously fine. The judges not having completed their task and many cars having left, only twenty-two vehicles took part in the procession through the town and to the racing track in the Exhibition grounds. There were to be all sorts of competitions, and what appealed to the majority most was the offer of a prize for the handsomest and best designed vehicle. All sorts of guesses and bets were made, but none of the wisecracks spotted the winners. Several thousands of sightseers were gathered around the track, and as the cars paraded much cheering was indulged in. The cars were left stationary on the cinder track, while the skill competition on the grass centre and the races on the outer banked asphalted surfaces took place.

For the skill competitions the vehicles had to be driven backwards and forwards through narrow passages, and the winner was he who drove his car in the fastest time without touching the obstacles. There were three entries; the Gobron-Brillié won both heats, the little Renault and the Stirling Parisian phaeton being second and third respectively.

The next event was a race between Mr. Moffatt Ford in a Decauville and Mr. Heard on a Century tandem. The former got away first and was never approached, lapping the Century about half way, when that car gave up. The time was 10 min. 26 1-5 sec. A race between two Locomobile steamers promised to be exciting, and was extremely so, the crowd cheering wildly when the competitors passed each other. At about two miles Ginder was leading and ultimately won, the other steam car stopped, through some mishap. Time, 10 min. 21 3-5 sec. Two or three big cars then ran round the inner track for a few miles, after which the final and most exciting event of the afternoon took place, viz., a race between Mr. Moffatt Ford on his Decauville and Mr. Ginder on a Locomobile. The distance was two and a-half miles. The steamer immediately jumped away and got a twenty yards start, which took Mr. Ford on the petrol car several laps to regain. This he did, and after a severe struggle managed to obtain the lead, which he held until nearing the finish, when Mr. Ginder, who had a reserve of steam, managed to spurt, arriving home the winner by a few feet. The winner was much cheered, and Mr. Ford also received an ovation for his plucky riding. Time, 5 min. 5 2-5 sec.

A short interval, and then a flag was seen flying on the Mo-car with six passengers, denoting it as the winner of the prize for the smartest turn-out, the second highest number of marks also being received for the four-seated Mo-car. The result was unexpected by the other motorists, but being sportsmen they genially joined in the applause. It appears that the system adopted of determining the winner was by handing the occupants of the grand stand a voting paper, and of these 229 were

returned. No. 35, the winner, was the six-seated Mo-Car; finished in natural wood, with brass hubs; two passengers seated forward, two, including the driver, in the centre, and two in the rear, with their backs to the driver. The number of votes received was ninety-three. The second car, made by the same firm, received thirty-six votes. Cars Nos. 20 and 19 received nineteen and seventeen votes respectively. These cars were the Locomobiles, which were profusely decorated with flowers. The other cars which received votes are given below:—

No.	Cars.	No. of Marks.
28	Argyll Voiturette.....	8
30	De Dion Voiturette.....	7
A 4	Mr. Cordingley's 10 h.p. Napier.....	5
10	Wolseley 10 h.p. Car.....	5
37	Stirling 4½ h.p. Parisian Phaeton.....	5
A 7	Mr. Siddeley's 12 h.p. Daimler.....	4
12	Roadway Autocar Company's 4½ h.p. Renault.....	4
4	M.M.C. Van.....	4
7	18 h.p. Daimler.....	4
26	7 h.p. Light Panhard.....	3
27	5 h.p. Decauville.....	3
32	14 h.p. Teras (Gobron-Brillie).....	3
9	Wolseley 5 h.p. Car.....	2
11	Roadway Autocar Company's 6 h.p. Mors.....	2
A 10	Mr. Whytlaw's Mo-Car.....	2
A 6	Mr. Creber's Albion Car.....	1
29	Parr 5 h.p. Car.....	1

On view were some of the handsomest cars in the kingdom, so that those who awarded their favours had plenty of choice in the matter. A return was shortly afterwards made for the storage yards, where some of the cars immediately commenced to disperse and by midnight the "Grand" was nearly empty and all "sleepers" for the South were full.

Some few, however, postponed their departure till the next day and of these were Mr. Pedley, with an 18 h.p. Daimler; Mr. and Mrs. Siddeley, on their 12 h.p. Daimler, and Mr. Cordingley and party on their 10 h.p. Napier. Punctually at nine the cars were all outside, but as it was raining in torrents the start was delayed half an hour. The rain in the meantime having ceased, the two last mentioned parties started and Mr. Pedley followed shortly after. Having only seventy miles to go for lunch it was determined not to hurry—but, *c'est l'homme qui propose et Dieu qui dispose*. After going a mile or two, one of Mr. Siddeley's burners blew out and we went on—subsequently taking a wrong turning. The zone of the recent shower was passed almost before leaving Glasgow, and in place of the rain was a hurricane of the most vicious dust we have ever encountered. We went through the 1,000-miles trial last year, and were also present at the meeting of the Municipal Engineers at Leicester, and at other events where cars have congregated on dusty days—but never were such furious clouds of dust felt before. The wind slowed the car and the dust blinded and stung us. So great was the inconvenience felt that the writer had to tie a veil twice round his face. To talk about cars making a dust we feel would be ridiculous after this experience, for we do not believe all the cars in Christendom could create such a whirlwind.

After passing through Hamilton a change came o'er the scene, spots of rain beginning to lightly fall, creating amusing streaks on our faces. These spots gradually merged into a blinding storm and as the car was "pulling" abominably we were in anything but a happy frame of mind. Crossing the Lothian hills, the rain continued, and on some of the highest points it was like hail, cutting into our faces like knives. The cold was also intense, and wrapped up as we were it was still keenly felt. It took us two hours and forty minutes to do thirty-two miles. Having passed the Lead Hills (local appellation) we gladly welcomed the sight of the inn at Abington for a pull up to examine the cause of our engine pulling badly. Here came out Mr. Baron, of Manchester, who informed us he was in company with Mrs. Baron on a Parisian Daimler, with friends on a De Dion voiturette. This latter was *en panne* from ignition troubles. It had taken the two cars since Thursday to travel less than forty miles. Excepting the De Dion, all the troubles had been with the tires, very bad luck indeed having been experienced.

Regarding the motorists who started with us, we were of

opinion that they must have reached Lockerbie, and, therefore great was our surprise when Mr. and Mrs. Siddeley drove up two or three minutes afterwards. They had gone through Motherwell, two or three miles out of the way, and had suffered from burner troubles. While talking, the little yellow 7 h.p. Panhard dashed by, travelling at a fine pace. Our friend's car also went on, we following, having imagined we found our troubles in the petrol supply pipe. Our progress—it was downhill—seemed merry enough for a few hundred yards and we kept the two cars in sight, having wild hopes of being able to catch up to them. Never were hopes more vain, or ambitions more doomed to disappointment. Crawling commenced again; the ignition tubes were changed and changed and changed continually, at least a dozen times; we were carrying a good supply of ignition tubes, but no better results followed. Directly anything approaching a hill was encountered, the car almost and ultimately did stop on every rise. The rain had recommenced at Abington, and if possible continued worse than ever the entire remainder of the journey. As the Moffatt Hills and Beattock Rise had to be crossed, our misery can be imagined, effecting changes of ignition tubes, in the pouring rain, on some of the highest as well as the lowest hills. The car was standing stationary at one point, our "bonnet" in the road, our tools scattered, the rain driving—if it had come down straight, it would not have been so painful; not a sign of life anywhere—but suddenly was heard the loud sound of a motor horn. Immediately afterwards, scarcely having had time to clear our tools away, Mr. Rolls dashed by, going at a tremendous speed and unrecognisable, except to those who knew the car. The swish and splash from the wheels left a good impression behind. No sooner seen in sight, a wave of the hand, and then lost to view—such was our meeting. Continuing, we had a painful, and what might have been a fatal experience. The car still slackened in speed, and finally it would not move at all. Bonnet off again, ignition tubes once more examined, tested, and found all right; other parts were then looked to, and it was ultimately discovered that the engine was not getting any petrol. The pipes leading to the motor were being taken off, when a horse and trap containing three passengers and coachman driving, were seen approaching. The turn-out was a smart one, and as the horse approached it became very restless, and when right opposite the car, suddenly turned into a loose stone hedge, knocking the stones over, turning over sideways, and, with the trap and coachman, fell into the field beneath, a distance of eight or nine feet. A passenger rolled over and appeared to fall under the horse. Our hearts were in our mouths, and for a moment all were terrified, but quickly relief came when it was seen all four were safe and apparently unhurt. The horse was quickly got on to its feet and found uninjured, the trap, too, having escaped with but little damage. The occurrence was a providential escape, for which we were thankful. All things come to an end, and our journey of seventy miles ultimately did by our reaching the King's Arms at Lockerbie at 4.45. A warm welcome was afforded us, and what was equally comforting was warm clothing and the sight of a bright fire—which with the aid of a good dinner—for we had not tasted food since eight o'clock in the morning—soon put us right—although we arrived in the middle of the drenching rain, soaked through, and with our complexions anything but their natural colour. Our first enquiries were after our friends. We learnt that Mr. and Mrs. Siddeley had arrived just before three, and had left about ten minutes before our arrival. Of Mr. Pedley we heard nothing, so we presumed he had gone on—therefore great was our astonishment when shortly after five Mr. Pedley drove up to the door of the inn. It was still raining, and our friend was indeed wet. There is no superlative in the English language to express the state of moisture he was in. He, like ourselves, had had trouble with his ignition—a magneto arrangement—and had not tasted food since breakfast. He would not get off his car for fear of disturbing the pond—or, rather, lake—in his lap, and so proceeded south, with better luck, it is to be hoped, than he had had. Shortly after the sound of motors was again heard, and this time the arrivals were three Panhards, a 16 h.p., a 12 h.p., and a 7 h.p., the drivers being the two Messrs. Du

The Glasgow Reliability Trials.

TABULAR STATEMENT OF RESULTS.

SECTION II.

Privately owned vehicles entered by Members of the Club. The vehicles to be driven by the owners or by their substitutes or servants, but the owners, substitutes, or servants shall not be, or be about to be engaged in the manufacture or sale of such vehicles.

Official Number.	GENERAL DESCRIPTION.	Route I. Monday, 1st Sept.	Route II. Tuesday, 2nd Sept.	Route III. Wednesday, 3rd Sept.	Route IV. Thursday, 4th Sept.	Route V. Friday, 5th Sept.	MARKS.	MILES PER HOUR.
							Hill-climb. Lemonston. Chambers.	Hill-climb. Lemonston. Chambers.
A 1	23 Mr. J. Holder's 16 h.p. Napier	...	...	...	...	...	...	...
A 2	24 Mr. J. Holder's 16 h.p. Napier	...	...	...	...	...	...	...
A 3	25 Mr. J. Holder's 16 h.p. Napier	...	...	...	...	...	...	...
A 4	26 Mr. J. Holder's 16 h.p. Napier	...	...	...	...	...	...	...
A 5	27 Mr. J. Holder's 16 h.p. Napier	...	...	...	...	...	...	...
A 6	28 Mr. J. Holder's 16 h.p. Napier	...	...	...	...	...	...	...
A 7	29 Mr. J. Holder's 16 h.p. Napier	...	...	...	...	...	...	...
A 8	30 Mr. J. Holder's 16 h.p. Napier	...	...	...	...	...	...	...
A 9	31 Mr. J. Holder's 16 h.p. Napier	...	...	...	...	...	...	...
A 10	32 Mr. J. Holder's 16 h.p. Napier	...	...	...	...	...	...	...
A 11	33 Mr. J. Holder's 16 h.p. Napier	...	...	...	...	...	...	...

* This Vehicle is being run with a view to obtaining an official certificate from the Judges' Committee. (See Rule 55.)

† This Vehicle is not being run with a view to obtaining an official certificate, and the Judges' Committee have no knowledge as to what repairs or renewals (if any) are effected, or changes made in the vehicle between the daily runs, as it remains in the hands of the owner and not in the custody of the Judges' Committee.

SECTION III.

Official Number.	GENERAL DESCRIPTION.	Route I. Monday, 1st Sept.	Route II. Tuesday, 2nd Sept.	Route III. Wednesday, 3rd Sept.	Route IV. Thursday, 4th Sept.	Route V. Friday, 5th Sept.	MARKS.	MILES PER HOUR.
							Hill-climb. Lemonston. Chambers.	Hill-climb. Lemonston. Chambers.
P 1	Class B (Type) A set of 10 Danlop Tyres which are affixed to a 12 h.p. Panhard Car, which is driven by the Danlop Tyre Co. over 21 cert. Entered by the Danlop Tyre Co. (Lancaster).	300	300	300	300	300	...	...
P 2	Class C (Type) A set of 10 Danlop Tyres which are affixed to a 12 h.p. Panhard Car, which is driven by the Danlop Tyre Co. over 21 cert. Entered by the Danlop Tyre Co. (Lancaster).	...	...	...	...	...	...	...
P 3	Class G (Type) A set of 10 Danlop Tyres which are affixed to a 12 h.p. Panhard Car, which is driven by the Danlop Tyre Co. over 21 cert. Entered by the Danlop Tyre Co. (Lancaster).	...	...	...	...	...	...	...
P 4	Class G (Type) A set of 10 Danlop Tyres which are affixed to a 12 h.p. Panhard Car, which is driven by the Danlop Tyre Co. over 21 cert. Entered by the Danlop Tyre Co. (Lancaster).	...	...	...	...	...	...	...
P 5	Class B (Type) A set of 10 Danlop Tyres which are affixed to a 12 h.p. Panhard Car, which is driven by the Danlop Tyre Co. over 21 cert. Entered by the Danlop Tyre Co. (Lancaster).	...	...	...	...	...	...	...

* N.B.—The above provisional figures are subject to subsequent alteration. The system of marking for reliability is that from a maximum of 300 marks per day, one mark is deducted for every minute during which a vehicle is stopped on the road by reason of failure or adjustment.

CLASSIFIED LIST OF VEHICLES.

Number of marks for reliability obtained out of a possible maximum of 300 per day, and marks for Hill-climbing Trials.

Official Number.	NAME.	Route I. Monday, 1st Sept.	Route II. Tuesday, 2nd Sept.	Route III. Wednesday, 3rd Sept.	Route IV. Thursday, 4th Sept.	Route V. Friday, 5th Sept.	MARKS.	MILES PER HOUR.
							Hill-climb. Lemonston. Chambers.	Hill-climb. Lemonston. Chambers.
Class A.	<i>The following Vehicles have been entered under the various Classes—</i>							
1	Class A. (Cars entered by Manufacturers or Agents)							
2	Class A. (Cars entered by Manufacturers or Agents)							
3	Class A. (Cars entered by Manufacturers or Agents)							
4	Class A. (Cars entered by Manufacturers or Agents)							
5	Class A. (Cars entered by Manufacturers or Agents)							
6	Class A. (Cars entered by Manufacturers or Agents)							
7	Class A. (Cars entered by Manufacturers or Agents)							
8	Class A. (Cars entered by Manufacturers or Agents)							
9	Class A. (Cars entered by Manufacturers or Agents)							
10	Class A. (Cars entered by Manufacturers or Agents)							
11	Class A. (Cars entered by Manufacturers or Agents)							
12	Class A. (Cars entered by Manufacturers or Agents)							
13	Class A. (Cars entered by Manufacturers or Agents)							
14	Class A. (Cars entered by Manufacturers or Agents)							
15	Class A. (Cars entered by Manufacturers or Agents)							
16	Class A. (Cars entered by Manufacturers or Agents)							
17	Class A. (Cars entered by Manufacturers or Agents)							
18	Class A. (Cars entered by Manufacturers or Agents)							
19	Class A. (Cars entered by Manufacturers or Agents)							
20	Class A. (Cars entered by Manufacturers or Agents)							
21	Class A. (Cars entered by Manufacturers or Agents)							
22	Class A. (Cars entered by Manufacturers or Agents)							
23	Class A. (Cars entered by Manufacturers or Agents)							
24	Class A. (Cars entered by Manufacturers or Agents)							
25	Class A. (Cars entered by Manufacturers or Agents)							
26	Class A. (Cars entered by Manufacturers or Agents)							
27	Class A. (Cars entered by Manufacturers or Agents)							
28	Class A. (Cars entered by Manufacturers or Agents)							
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100	Class A. (Cars entered by Manufacturers or Agents)							

* Optional. No marks are allotted, but the speed of cars and number of passengers carried are recorded at the request of competitors.

† N.B.—Minimum number of Passengers carried.

* No speed in excess of 12 miles per hour, i.e., the legal limit, are published.

The marks for hill-climbing are calculated by the following formula—
Speed in miles per hour X Number of Passengers carried X 1000.
Price of Car

Cros and Mr. Jarrott, with passengers. They had left Glasgow before ten in the morning, and had troubles with tires and ignition. The "twelve" was using lamps. No sooner had we entered the coach-house than in came Mr. Baron—whom we had met at Abington—on a Daimler towing a DeDion, with ignition all wrong. It was a bad day for electric ignition, and perhaps one possible supposition is that the wet had something to do with it. Examining the Dunlop tires on the Panhard, we were pleased to see what little sign of wear they showed, indeed there was scarcely a mark on them, and they had been ridden from London to Glasgow, round the trials, and on to Lockerbie. The number of punctures, we were informed, had only been three. The Panhard party only stayed for a meal, but the other folks remained all night—as we did—and left at four o'clock next day, having been industriously at work since six in the morning.

On Tuesday we renewed our journey South, intending to make first for Carlisle, 25 miles. Having only less than two gallons of petrol in our tank, it was doubtful whether we should be able to do so. Hearing, however, that Dr. Logan, of Ecclefechan, owned a motor-car, we drew up at his charming place and were extended every courtesy. The doctor owns a Mo-car, and has had it six months; he has ridden twice to London and back on the car, which has not cost him a penny for repairs; and as regards troubles on the road, he has not been stopped ten minutes on it. Reaching Carlisle—the road having been somewhat sticky and heavy in places—we noticed on entering the town, a Delahaye by the side of the road; it was laden with luggage and petrol tins. On the other side of the road, Mr. Friswell, with his German car, was at work filling his tank. In subsequent conversation, he informed us that he had been holiday-making at Oban, and had ridden on Sunday from that place to Edinburgh, a distance of 160 miles. The roads were over mountains and through passes, and in more than one instance the car had to be assisted in its progress by the passengers. We also learnt that Mr. C. Johnson, the previous day, had had a collision with a milk cart, resulting in the breaking up of one of the wheels of his New Orleans.

Our original intention was to proceed to Richmond in Yorkshire to spend the night, but yielding to Mr. Friswell's invitation we arranged to travel together to Kendal and Keswick. The eighteen miles to Penrith, although of a switchback character, were over good roads, but after Penrith in the journey over Shap Fell the roads were found in a very loose condition, and we feared for our tires. Nothing noteworthy took place except that portions of the descent were somewhat greasy. We have omitted to mention that at Carlisle we learnt that Mr. Baron and party, again towing the De Dion, left that town about nine o'clock the previous evening with the determination to go straight through to Manchester. Great, then, was our surprise to see the same party picnicking by the roadside within three miles of Kendal. We wonder if they have yet reached Manchester, and, if so, by what means. Mr. Friswell, who had waited for us several times, suddenly found his car stop dead within half a mile of Kendal. After a lengthy examination it was found that the magneto-electric ignition arrangement was at fault. While Mr. Friswell and friend busied themselves on the car we went on to order luncheon, and while waiting for this meal Mr. and Mrs. Manville, on their Daimler, appeared in sight. They had left Glasgow on Saturday morning, and did, we were informed, a non-stop run to Carlisle, a distance of close upon 100 miles. They had been staying at Keswick, and were proceeding to Blackpool. Our friends being unable to continue, we proceeded about five o'clock on our journey, subsequently stopping the night at an hotel at Windermere. Having within the last few days ridden round Lochs Lomond and Long, the Garloch, etc., the difference between the English and Scotch lakes appeared most marked. The Scotch mountains surrounding the lakes seemed stern, terrific, and grand, frowning down on the smallness of the earth beneath them; while the English lakes appeared gentle and sweet, the hills seemed clothed with verdure as if for the purpose of protection. A great contrast, indeed; but, oh, how beautiful were both!

Wednesday broke gloriously, the sun shone brightly, and it was indeed pleasant to wake up and gaze over Windermere on to

the beautiful hills beyond. We thought the hotel at Tarbet, overlooking Loch Lomond, was pleasantly situated, but the hotel at the Waterhead was also charmingly placed. The ride last week to Tyndrum was also a revelation, but so also was the sixteen miles between Ambleside—cosiest of towns—and Keswick, past Grasmere, Thirlmere, and then finally Derwentwater, so different to the Scotch lochs. Between Ambleside and Keswick Dunmail Raise has to be crossed. It is said that from the top eight lakes can be seen; we, however, saw only one, although the sun was shining brightly. It was, none the less, a bright scene, and the run down—although circuitous and with sharp corners—was much enjoyed. About five miles from Keswick, around a turn, is a loose five-barred gate, with an almost obliterated paper notice stating that the road was stopped owing to the rebuilding of two bridges. There was no notice giving directions, and the only turning was a narrow lane, scarcely wide enough for the car to go through. Along this, winding and turning, as in a maze, for a space of over half an hour, we travelled. One of the ladies suggested that the lanes reminded her of Devonshire, but we had never in that fair county met anything so bad; the hills were shorter and sharper, and the surface was worse. As luck would have it, we met a coach and four coming in the opposite direction, and what to do for a minute neither party seemed to know. The difficulty was, however, solved by our driving into a field. To make matters worse, a little further a posse of men were digging a hole in the middle of the road, and to manœuvre by this required some skill. Coming out of the lane we came on to the Penrith road, with a milestone—"three miles to Keswick"—in front of us. It did not state in which direction, and as we had been twisting about so much we were unable to tell. Naturally there was not a soul about; there never is when one is in doubt. However, we took the right direction and safely landed at the head of Derwentwater, in Harker's Hotel, Portinscale, where we stayed the night.

NOTES ON THE TRIALS.

On the first day of the trials Mr. Rolls was unfortunate enough to break a piston. This he had repaired by the Hozier Engineering Company, of Glasgow, and he was at work on his car till midnight on Saturday, to enable him to return south on Sunday. Mr. Holder was unlucky enough to have two tires burst beyond repair on his Napier, and so he was put out of the contest. In his second car (steam), driven by Mr. R. Bird, he was also unlucky, a tube having burst.

THE two Lanchester cars, which arrived late at Glasgow, and were not competing, both went up Whistlefield hill with full number of passengers on. The luggage van of the Motor Manufacturing Company, which ran so well during the trials, also went up Whistlefield Hill, as did the Daimler car driven by Mr. Critchley; the Milnes, driven by Mr. Hankinson; the Decauville, driven by Mr. Moffat Ford; the New Orleans, with four passengers up, driven by Mr. Johnson, and many others. A number of cars had no chance of getting up owing to the hill being blocked. In backing, to endeavour to get a clear run at the hill after being stopped, Mr. Clarkson, on his steam car, and Mr. Burford, on a Milnes, had a collision, resulting in one of the former's wheels being buckled.

MESSRS. ORMISTON AND GLASS had a van, with a great golden dome on the top, running along the route of the trials last week. The way this van ran about was a marvel, and we should imagine its pace must have been at least eighteen miles an hour.

THE Wolseley Tool and Motor-Car Company, Limited, write pointing out that we omitted to mention last week that their car (No. 10) obtained the full number of marks on the first day's run of the trials. It is hardly necessary to mention that the figures given last week were preliminary and hurriedly obtained. The official statement is given in the table in another part of the present issue.

CORRESPONDENCE.



ELECTRICAL IGNITION MATTERS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—“Rooinek,” although perhaps an electrician, is not sufficiently well versed in coil construction to criticise the system used by De Dion. I venture to state, without trying the experiment, that the wiping contact to “do away with flimsy and costly platinum,” would decrease the volume and length of spark by at least fifty per cent. The two factors for the most efficient working of a coil as far as the contact breaker is concerned are these:—The period of contact must be long enough to thoroughly saturate the iron core with magnetism, and the break should be as quick as possible. Now any metal that has a low fusing point if used for the contact breaker at the points of make and break is locally fused and vaporised by the spark. The length of the spark at the contact breaker and consequently the period of time it takes to break the primary circuit is increased because the vapour of the metal enters into the arc and makes it a better conductor. Platinum, therefore, is used because it has the highest melting point and consequently is the least volatile of any metal used commercially. In my opinion, the De Dion system of electric ignition is far and away the best in use at present.—Yours truly,

E. E. BROADBENT.

THIRD PARTY INSURANCE RISKS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—In your issue of August 10th, in the correspondence columns, you inserted a short letter from me mentioning that I obtained my insurance from Mr. Callard, etc. It has come to my knowledge that it is illegal for lawyers to advertise, and that this might be taken as a kind of advertisement.

I should like it known that Mr. Cuthbert Callard, of 25, Golden Square, Regent Street, had nothing whatever to do with the letter I wrote in answer to “H.G.E.C.,” re third party insurances, in your issue of August 10th, nor did he know I had written it, nor did I even ask his consent. It appears that some malicious persons might take it as an advertisement, though how I do not quite see, and even if it could be called one, I am afraid I was so ignorant as not to know that lawyers might not advertise.—Yours truly,

J. REGINALD EGERTON.

BODIES FOR MOTOR-CARS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—As one who takes a very keen interest in motors, it has often struck me what a very desirable thing it would be if some of our motor and carriage manufacturers would make a point of showing at one of the exhibitions the different stages in connection with the manufacture of the bodies for cars. I have been to nearly all the exhibitions, but have not noticed that any attempt has been made to do this. Now, a large number of people who are now looking at motor-cars with the idea of purchasing are quite ignorant so far as the motor of the vehicle is concerned, but as many of them have their own carriages they consider themselves judges of carriage work. Therefore, when, as now, so many motors are apparently similar, I should think it would be well worth the while of any firm to show the bodies they fit to their vehicles in the different stages of the construction, as whilst I am afraid we must admit that we have hardly overtaken the French in regard to the excellence of their manufacture of motors, yet still as carriage builders we are reckoned better than other countries. No doubt if the attention of the trade were drawn to this matter, it would lead to special efforts being made for the exhibition of motor bodies.—Yours truly,

GEO. E. WILLSON.

THE TWIN TIRE.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Having seen an inquiry in your issue of the 31st August as to the working of the twin tire, I may state for the information of your correspondent that I purchased a pair of

Collier twin tires in the middle of June last, and had them fitted to the back wheels of my Locomobile car, which has been running with these tires for long distances ever since. I have had no trouble with the tires, and in fact I find that on rough roads I can travel at least half as fast again.

All rubber tires skid on greasy asphalt and tram rails and sets, and I do not find that the Collier tire is any different in this respect. When there is a greasy surface the car must be driven carefully, just as in the case of a bicycle. I had the misfortune to pick up a $2\frac{1}{2}$ inch nail, which went into the tire at right angles for two-thirds of the length. The tire itself sustained no damage from this, other than the puncture of the inner tube. This was repaired, and the car has run ever since without anything having been done to the outer tire. Although the tires may seem expensive in the first instance, they will, I think, repay the outlay, as little subsequent trouble need be feared.—Yours faithfully,

ARNOLD E. WILLIAMS.

A SUGGESTED CLUB FOR MOTOR BICYCLISTS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Having read Mr. R. J. Cholmeley's letter, I fail to see that my idea has been anticipated by the formation of his Automobile Sporting Club, for Mr. Cholmeley advocates that motor cyclists should arrange their runs with motor-car owners and ordinary cyclists, while my ideas on this are clearly set out in my previous letter.—Yours faithfully,

T. UNDERWOOD.

THE GLASGOW RELIABILITY TRIALS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—It may perhaps seem ungenerous to criticise the manner in which the Automobile Club has carried out the reliability trials recently concluded in Glasgow, but I cannot help protesting against the serious error in judgment which the Committee made in abandoning the contest up the famous Whistlefield Hill, which should have taken place during the course of the last day's journey; for I take it that the awarding and publishing of marks both for reliability and hill-climbing powers was intended to provide the public with definite facts concerning the efficiency of the various cars, and so enable prospective purchasers to choose the type most suited to their requirements. But by the abandonment of the Whistlefield Hill climbing contest, after publishing the figures for the two easier ascents negotiated on the Wednesday and Thursday, the information afforded to the public has been rendered incomplete and misleading.

A comparison of the actual performances of two cars, which I will call A and B respectively, will clearly illustrate my meaning. Both cars are entered as carrying four passengers, and as a result of Thursday's contest up Gleneagles Hill, A, which travels the $2\frac{1}{2}$ miles at $12\frac{1}{2}$ miles per hour, scores sixty-one marks more than B, which travels up the hill at the rate of ten miles an hour. This gives the idea that A has hill-climbing powers vastly superior to those of B. That such an inference may be drawn is proved by the reports of the trials in the Glasgow papers, one of which, published on the day after the Gleneagles Hill climbing, reads as follows: “... One astonishing performance was made by—(A), which did so excellently at Fintry. This car, it is unofficially stated, maintained a speed of nearly twenty miles an hour on the hill. The marks allotted it for the feat were 221, an award much ahead of any of the others.” The public thus obtain an exaggerated notion that A is vastly superior to B in hill-climbing capacity; a notion which would have been corrected if the original intention of holding a contest up Whistlefield had been adhered to.

As an “unofficial” eyewitness I noticed that when A reached the first sharp rise in the last mentioned hill three passengers jumped out, and instead of being carried up the ascent by the car, actually assisted its progress where the gradient was steepest. B, on the other hand, carried all its four passengers up the hill without hesitation and by the motive power of its engine. If marks had been allotted for these performances A would not have received an award so much ahead of the others, as on the previous day. No doubt, in making the final

award, the performances of the various cars on Whistlefield will be taken into consideration, but in the meantime I cannot help thinking it a mistake, since first impressions are often the deepest and most lasting, that figures dealing with the hill-climbing performances should have been published, under the authority of the Club, which do not afford a true idea of their all-round capacity in this direction.—Yours truly,

R. H. CARLISLE.

THE LISIEUX ACCIDENT.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Your correspondent "Automan," in his paragraph referring to the Lisieux accident, has fallen very wide of the truth; and it would be quite as well if, before rushing into print in the manner he has done, he made some enquiries. The real facts are as follows. The Comte de Villeroi and his son were driving into Lisieux (the car being driven by his son). When nearing the "Octroi" one of the men came out and deliberately placed himself in front of the car, holding up his hands. The son avoided him by steering to the left, and still the stupid fellow repeated it again by rushing in front of the car. This time it was impossible to avoid an accident, and the unfortunate man was killed.

The son immediately pulled up, but the fury of the people was so wild—brandishing sticks, umbrellas, and hurling stones at the car—that the Comte de Villeroi told his son to drive on, thinking it wiser to do so when he saw he could not help the unfortunate man, as you will allow a very wise course, particularly when one knows how little reason rules the French mob when once roused.

As to the inability of the authorities to trace the automobilist, your correspondent is wrong again, for immediately the Comte reached his château (the same night, by the way) he wrote to the Procureur of the Republic at Lisieux and explained the whole case. Add to this, that he has paid over to the man's widow 50,000 francs voluntarily, I don't think anyone can have much to say against him.—Yours truly,

AN OCCASIONAL MOTORIST IN FRANCE.

P.S.—The facts are from the lips of the Comte de Villeroi himself.

AT the conclusion of the Loch Tay Regatta and sports, held at Kenmore last week, a vote of thanks was accorded Mr. Midgeley, of London, whose motor-cars were run during the afternoon for the benefit of the club.

THE Petroleum Institute, of 26, Bevis Marks, London, E.C., which exists for the training of gentlemen in every branch of science relating to petroleum, announces a course of lectures dealing with the various stages through which petroleum passes, and its application, commencing in October next.

WE are pleased to be able to state that Major Craddock, who has been lying at Red House, Doncaster, since the motor-car accident a month ago, was removed to his brother's house at Wemmergill, Middleton-in-Teesdale, on Saturday last. Colonel Craddock superintended the arrangements, and the patient was put on a special train at Adwick-le-Street.

MOTORISTS who assisted at the annual meeting of the Incorporated Association of Municipal and County Engineers recently held at Leicester may be interested in hearing that a "souvenir" of the occasion has now made its appearance. The souvenir takes the form of a neat little book published at the *Guardian* Office, Leicester, which gives a full report of the proceedings, not forgetting the motor-car trips.

MR. DOOLEY, the American humorist, has been dilating on the dangers of "Mr. Hankerbilt's five hundred power autymobile, Purple Assassin." According to this veracious chronicler, "many iv th' people of Newport ar-re talkin' iv havin' a law passed compellin' pedesthreens to ring a bell an' blow a hor-rn on their way to wurruk. Otherwise there won't be a whole tire left in Newport."

THE EASTMEAD-BIGGS VOITURETTE.

WE are this week able to publish a description, with illustrations, of a new voiturette which has recently been put on the market by Messrs. Eastmead and Biggs, of Frome, Somerset, and 32, Green Street, Blackfriars Road, S.E., and which comprises several points of interest. The engine, which is located under an unobtrusive bonnet in the front of the car, is of 78 mm. bore and 20 mm. stroke, and

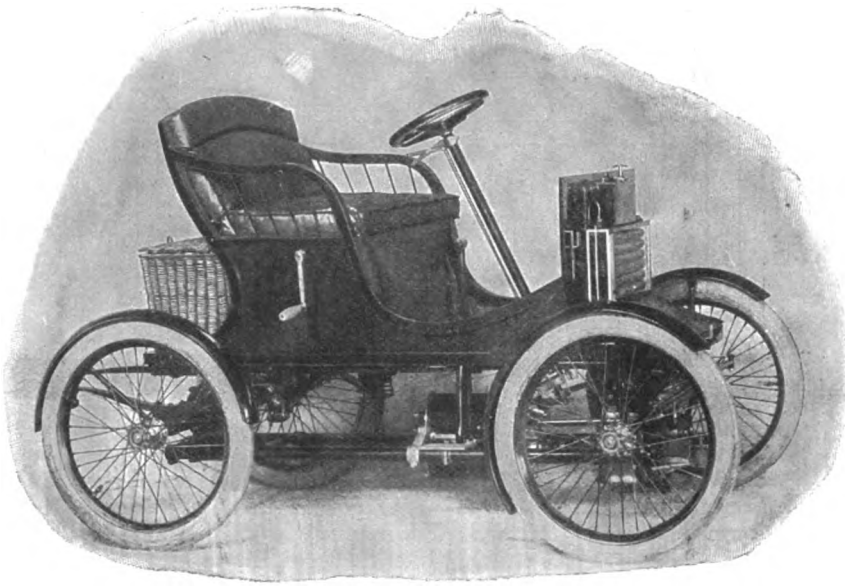


FIG. 1.—THE EASTMEAD-BIGGS VOITURETTE.

develops $3\frac{1}{2}$ to 4 h.p. It is fitted with the Simms-Bosch magneto ignition, with variable timing gear and inlet valve closer. The engine is carried by brackets on the longitudinal tube LL, which connect the front and rear axles, and are shown in Figs. 2, 3, and 4. These longitudinals, which carry all the gearing, are provided with enlarged bosses, turned true in the lathe, so as to secure the absolute alignment of the parts that fit thereon. At the rear end of the longitudinal tubes they are spanned by two stretcher bars KK, in which are formed bearings in which the trunnions TT, or the differential gear box G, can turn. This allows the rear axle to be lifted at either end by inequalities in the road, or obstructions, and as the transmission shaft S is co-axial with the trunnions

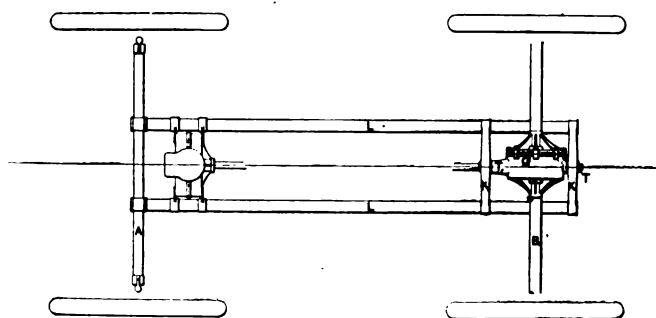


FIG. 2.—PLAN OF FRAME.

- | | |
|---|--|
| A. Front bridge. | G. Differential gear box. |
| B. Rear or live driving axle. | LL. Longitudinal tubes. |
| KK. Stretcher bars connecting two longitudinal LL. and carrying trunnion bearings for gear box G. | TT. Trunnions of gear box G. carrying frame. |

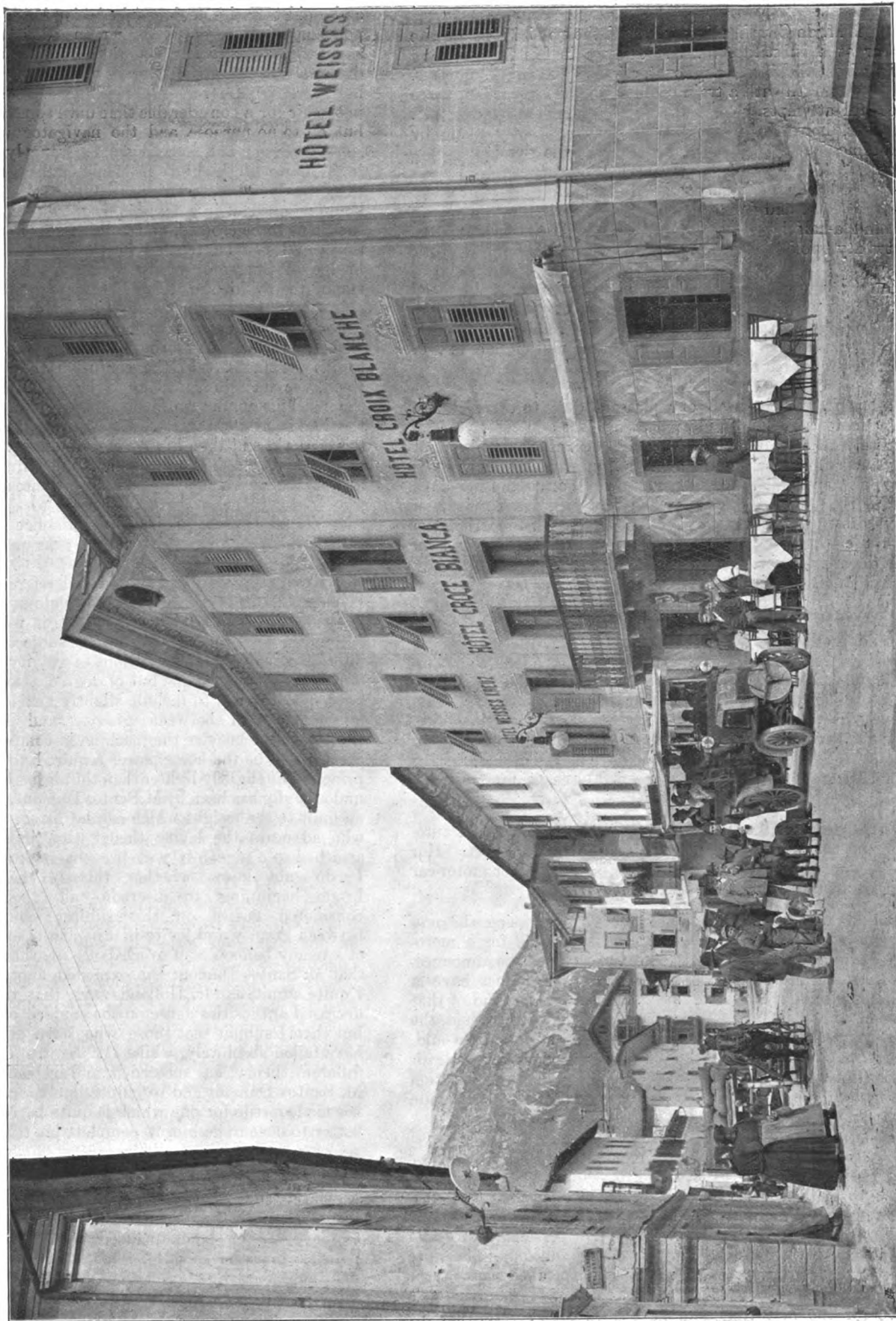
T, the bearings remain in alignment however great may be the angle of twist. This is clearly shown in Fig. 3. The radiator R is carried well above the engine in front of the wind board, and natural circulation is thus sufficient, no pumps being employed.

The change-speed gear and clutch box C are carried on the longitudinal L, as shown in Fig. 4, and in detail in Figs. 5 and 6. Two clutches are employed, the details of which are omitted from the drawing, but they may be considered as two plain cone

A Public Service in the Austrian Tyrol.



(For description see page 507).



THE ARRIVAL OF ONE OF THE CARS AT CO. TINA.

(Aus der Zeitungs-)

Cliche der

CONTINENTAL NOTES.

By "AUTOMAN."

SINCE M. de Crawhez demonstrated the possibilities of the motor-car as a substitute for the caravan in North Africa by travelling from El Biar to Laghouat, a journey of 448 kilomètres, usually undertaken with a train of fifty beasts of burden, three unsuccessful attempts have been made to emulate his example. Success has, however, crowned the attempt recently made by M. and Mme. Jacques Lefebvre, who covered the desert route in three stages. From El Biar to Boghari, 166 kilomètres, in seven and a-quarter hours; Boghari to Djelfa, 153 kilomètres, in eight and a-half hours; and from Djelfa to Laghouat, 129 kilomètres, in six and a-half hours; the total time for the 448 kilomètres being twenty-two hours and a-quarter.

THE St. Petersburg police have issued orders that the speed of motor-cars within the city must not exceed twelve kilomètres (7½ miles) per hour, and must be still further reduced on turning corners. The penalty for infringing this regulation is a fine of 500 roubles—or three months.

It has frequently been our pleasant duty to chronicle the deeds of motorists who, by placing themselves and their vehicles gratuitously at the disposal of others in distress, have brought about results otherwise unattainable, or if attainable only at a loss of much all-important time. Such an event occurred a few days ago in Paris. Count d'Harvey had just left his carriage, a phaeton drawn by a smart pair of cobs, to speak to a friend on foot in the Champs Elysées. Suddenly he heard a noise of rapidly departing hoofs, and looking round saw a stranger coolly driving off in his phaeton. A big motor-car was at a standstill hard by, and the count had a brilliant idea. He ran up to the automobilist, hurriedly stated his case, and added, "Do you think you could catch up my cobs?" The owner of the racing car answered with a smile and a request to the count to get up beside him. The automobile was started at top speed, and in a few seconds the smart pair of cobs and the thief who was driving them were overtaken, and the man was handed over to the police. Meanwhile the motorist had to depart, as other policemen on bicycles were looming in the distance, obviously bent on arresting him for having driven down the Champs Elysées at fifty miles an hour.

THE Queen of the Belgians has lately taken to the automobile, and has become most enthusiastic about the sport. Her Majesty, who is now at Spa, is often to be seen in her motor-car driving about the neighbourhood.

PARISIAN automobilists who are still discussing the *pros* and *cons* of every available site near Paris suitable for a motodrome have been agreeably surprised this week by the announcement that the Municipal Council of Issy-les-Moulines have a scheme for placing the well-known manoeuvring ground of that locality at the disposal of a company willing to construct the desired course. The consent of the military authorities would, of course, have to be obtained, but it is believed that little or no opposition will be met with in that quarter, as the formation of the motodrome would in no way detract from the parade ground on which the garrison of Paris is wont to evolute.

BOTH good and bad fortune seem to dog the footsteps, or should I say the wing path, of M. Santos Dumont. Bad fortune, because through a trifling accident he has damaged his No. 6 again, and postponed his run for the Deutsch prize; good luck, because again he has had a narrow escape of personal injury and came off scot free. On Thursday last week, although not quite completely inflated, the new air-ship, which has taken barely three weeks to complete out of the wreck of No. 5, was tried as a captive for the first time, and gave such good results that the following day the bands were loosened, and it took to the free air literally like a bird. For several hours at Longchamps it sailed over the racecourse, evolving perfectly and travelling both with and against the breeze at a greater speed than No. 5, and with a marvellous precision. To break the monotony M. Santos Dumont shouted to his friends a *rendez-vous* at the Café de la

Cascade. He flew to this well-known restaurant, and landed lightly without any difficulty on the lawn in front of it, and amidst much merriment had his photograph taken with two policemen just in the act of writing down in their note-books a supposed *proces verbal* against him for flying furiously to the public danger, and then he set off home. In passing over some high trees, however, his guide rope caught, and there he remained a prisoner in the air for a considerable time until someone climbed the trees, but all to no purpose, and the navigator was forced to let out some hydrogen and come down. Strangely enough, it was again in the Baron Rothschild's property, and, there amongst the trees, there was the greatest difficulty in extricating the machine, and hours were spent in getting it back to its home. There remained the Seine to be crossed, and as the balloon in its damaged condition could not be trusted in the free air it was taken to the bridge at Suresnes, where with the greatest difficulty it was made to avoid the telephone, telegraph, and trolley wires, chimneys, etc., etc. At last the park of the Aero Club was in sight. M. Santos Dumont, still in the basket, threw out some ballast, and shouted orders to his assistants. In the confusion the orders were misunderstood, the men in front let go the guide ropes, and the bows of the machine sprang up into the air, jerking the other rope from the hands of its holders. The stern flew up 200 feet with a terrific jerk, and then the flying machine plunged headlong into a field and smashed the keel into matchwood. The spectators rushed to the rescue and found M. Santos Dumont picking his way out of the *debris*. Needless to say that the repairs necessitated were put in hand at once by this indomitable young man, who expects to be ready again in a few days.

I WOULD like to say a word with reference to Mr. Sidney H. Hollands' letter on the subject of aerial navigation which appears in the last issue of the *Journal*. I say it with due deference, as I do not pose as an authority on the subject, though it has always interested me. If the conditions of gravity as against levity are a matter not of principle but of degree, that is to say, if levity must be construed to include slightly heavier than the air, where is the division between gravity and levity to be made? Obviously the heavier the machine in comparison to the air the greater will be the horse-power required to lift it, and once the principle of slightly lighter than the air has been established, as it undoubtedly has been by M. Santos Dumont, there is, theoretically, no limit to the weight which can be lifted. It is said by those who advocate the levity theory that if a penny balloon be attached to a pigeon it will prevent it from being able to fly. I do not know whether this is the case or not, and I am beginning to discredit all that I have hitherto considered gospel on this subject; but if the difference between gravity and levity in a pigeon is so slight that the action of a penny balloon will overbalance it, then I say emphatically that M. Santos Dumont has exploded another popular delusion. I quite admit, as Mr. Hollands says, that the greatest living and deceased authorities agree on the subject of the flight of birds, but then I submit that those who have acted on their theories have failed absolutely, whilst M. Santos Dumont, who holds a different theory, has succeeded, and instead of trying to convert M. Santos Dumont and to induce him to leave a field which he has made fertile for one which is quite barren, is it not manifestly better to encourage him to complete his trials in his own way?

THE Doherty Motor and Accessories Company, Day's Lane, Coventry, the other day showed our Midland representative a few of their leading specialties, including a handsome-looking engine-cover or bonnet, fitted with brass door, louvres, and polished brass bevels, a brass-mounted petrol tank for dash-board, and an effective silencer for motor-bicycles, fitted with two internal partitions with specially arranged holes.

THE authorities of the Congo Free State have decided to abandon the Stanley Falls to Redjaf Railway, because it has taken eighteen months to construct 109 kilomètres out of the thousand to be covered. The railway will be replaced by a service of heavy automobiles for passengers and goods from Ibembo or Djabbir to Faradje and Redjaf, thence to the Nile. The service is expected to commence in three months.

HERE AND THERE.



It is reported that the German Emperor has ordered a new motor-car from a firm in Aix-la-Chapelle.

DUBLIN is organising a big Lifeboat Saturday demonstration, in which owners of motor-cars and motor-cyclists are invited to assist.

A SPECIAL petrol motor delivery-van has just been completed by the Peugeot Company, for the use of the postal authorities in Paris.

THE decision of the Italian War Office to adopt motor-cars for military purposes is said to be the direct outcome of the recent tour of the Italian Automobile Club.

DR. C. C. WEEKS, of Lewisham Park, S.E., is one of the latest members of the medical profession to adopt the motor-car. His choice has fallen on a Weston steam car.

It is announced that the Berliner Maschinenbau Actiengesellschaft, of Berlin, have arranged to build all types of Thornycroft steam vehicles in Germany.

AT Dorking Petty Sessions, on Saturday last, Sir F. H. Bathurst was fined £1 for allowing his motor-car to emit steam when passing through the streets of the town.

LADY JEUNE has been again extolling the delights of automobilism in the Press, and delighting her readers with an account of a motor-car tour in the west of England.

MOREELS, the driver of King Leopold's motor-car, has been arrested, and is to be prosecuted for driving the Royal automobile at a furious pace and to the danger of life.

MESSRS. BROWN BROTHERS, Limited, inform us that they are opening a motor-car depot at 22, Great Eastern Street, E.C., where they will keep a stock of cars, accessories, and parts.

A CONSPICUOUS feature of the Italian Army manoeuvres now in progress is an armoured automobile, designed by Colonel R. Sismondi. It has three seats, weighs 25 cwt., and carries a mountain gun.

ONE of the latest biograph pictures at a London music-hall is a scene illustrating the recent Paris-Berlin race. It depicts a level stretch of road, along which the cars can be seen flying along at a terrific pace.

MOTORISTS touring near Inverary are warned to go slowly when near the bridge at Cladich, the approach to which from the Inverary side is a very steep gradient terminating in a sharp turn immediately at the bridge.

THE Mayor of Turin, Signor Tampa, who recently started from Fenestrelle in a 5 h.p. motor-car, ascended the Great Saint Bernard as far as forts Vecclua and Centiphagne, attaining an altitude of 2,849 mètres, thus beating Mr. Maurice Farman's record climb on the same track by 194 mètres.

Mr. W. H. J. WIMSHURST, who has been connected with the motor industry almost from its infancy, has joined the firm of the Brooks Motor Company, Limited, Holbrooks Lane, Coventry. Very shortly this company will have an up-to-date voiturette on the market which we hope to report upon.

"A STRICT observance of the rules of the road, even in little frequented bye-ways, by all who use them, whether drivers of horses, cyclists, or automobilists, would," says the *East Anglian Daily Times*, "conduce to the convenience and safety of everyone, and prevent mutual recriminations between the conflicting interests of the new and the old."

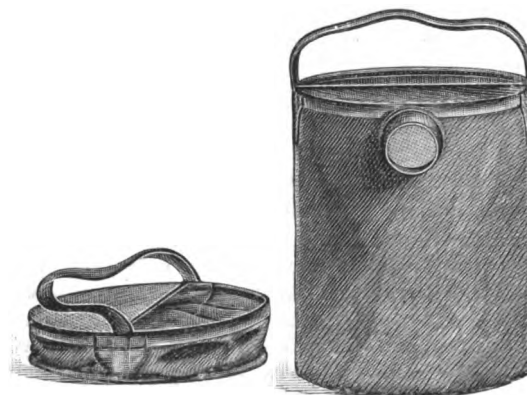
THE Brooks Motor Company, Limited, has been registered with a capital of £2,000, to adopt an agreement with H. Brooks for the sale of certain machinery, plant, stock, and effects at the Motor Works, Holbrooks Lane, Coventry, and to carry on the business of engineers, motor-cycle, and motor-carriage manufacturers, etc. The registered office is at the motor works, Holbrook's Lane, Coventry.

THE Millennium Motor-Car Syndicate and Agency, Limited, has been registered with a capital of £1,500, to adopt an agreement

with F. Bryan and A. H. Bayley, for the acquisition of certain inventions in relation to electric ignition for explosion engines, and to carry on the business of manufacturers of, and dealers in, engines, motor-cars, cycles. The registered office is at 87, Wellesley Road, Gunnersbury, Middlesex.

A NOVEL race from Paris to London took place last week between a Panhard and a Renault, for the purpose of deciding a sporting wager of £300 a side. The contest, says the *Express*, had a strangely unforeseen conclusion. It was almost a neck and neck race all the way to Dieppe, but on arrival there M. Lamberjack learnt, to his amazement, that to take the Panhard back to France there would be Custom House duties amounting to no less than £600. As this sum doubled the amount of the wager, he decided to abandon the race, and to cross without his car. The Renault car, which was driven by Mr. Comist, left Newhaven about seven o'clock in the morning, and was in London just after ten, thus winning the wager.

A NEW collapsible bucket for use on motor-cars has been put on the market by the B. F. Goodrich Co., of Snow Hill, E.C. The bucket is fitted with a screen, so that no foreign matter



can pass with the water into the tank; it folds up very compactly, thus taking up very little room when not in use. The makers caution users against putting petrol in the buckets which are only intended for use with water. The Goodrich Company are also making a combination funnel which stows away, as will be seen, in a very small place. It will be noticed that the funnel is fitted with a handle and a bottom valve.



When the valve is closed the funnel may be used as a bucket, and the filling of a water tank through a small opening is made a very simple matter by merely opening the valve. The appliance is well made, the tap being of vulcanite.

MESSRS. TOWNEND BROS., Limited, of Coventry, are one of the latest cycle firms to turn their attention to the motor-bicycle, and will probably be placing one of the Minerva type on the market shortly.

A NEW $1\frac{1}{2}$ h.p. petrol motor for use on motor-bicycles has just been put on the market by Messrs. Butler Bros., of Dale Works, Derby. The firm are not making motor-bicycles, but are furnishing the engine and all the necessary accessories ready to be fixed to a bicycle.

AN automobile gun-carriage battery, consisting of two guns mounted on automobiles, began a journey from Chicago to Washington on Wednesday last week. Major Davidson, of the North-Western Military Academy, is in charge of it. He expects the journey to prove automobile gun-carriages of practical use in warfare.

THE Albany Manufacturing Company, of Cumberland Park, Willesden, undertake repairs and improvements to steam cars. The company's system of air condensers, feed heaters, water coolers, steering gears, heavy oil burners, oil separators, sight feed lubricators, and many other improvements, are calculated to facilitate the running of cars at a considerable decrease of cost.

A CASE of considerable importance to automobilists was decided at Slough last week, when Mr. Thomas Fuller Toovey was summoned for not displaying a red light from behind his motor-car. He said he had both front and side lights, and although he had driven a motor-car for two-and-a-half years, he was not aware that he had to carry a red light. The Bench fined him £1 7s. 6d., including costs.

AT a meeting of the Sunbury District Council Mr. Hyde inquired if the Council could make rules and regulations to prevent motor-cars from travelling through the village at the excessive rate of speed which they did at present. The Clerk replied that urban councils had no power, but they could make application to the Middlesex County Council, who could deal with the matter. It was unanimously resolved to do this.

MR. F. C. BLAKE has removed his motor-car business from Ravenscourt Works, Dalling Road, Hammersmith, to larger and more convenient premises at Station Avenue, Kew Gardens, adjoining Kew Gardens Station. The new works are fitted up for the manufacture of the Blake specialities—coils, accumulators, plugs, contact breakers, radiators, carburettors, etc. A separate department will be kept to deal promptly with repairs to any type of car.

THE latest "cycling sensation" on a pocket track is at the Oxford music hall, when the popular experts, Lotto, Otto, and Callaghan, give a so called "miraculous" display of riding on a track of about the same dimensions as that at the Pavilion. The pursuit racing is extremely exciting, and the passing on such a small path is, as described, miraculous. This week Lotto has increased the interest in the performance by riding a Werner motor-bicycle.

THE Pocklington Rural Council have unanimously adopted the following resolution and decided to forward a copy of it to the East Riding County Council:—"That in the opinion of this Council it is advisable that regulations should be made for compelling drivers of light locomotives to produce some test of efficiency, and also for compelling the registration of each light locomotive and the carrying thereon of a distinguishing mark or number whereby the same may be identified."

WE hear excellent accounts of the results obtained by the sparking plugs supplied by the Electrical Ignition Company of Highgate Square, Birmingham. One motorist, who formerly used porcelain-fitted plugs, with which he had endless trouble due to the porcelain cracking and getting loose, reports that the E.I.C. plug has given him great satisfaction, having lasted much longer than the previous nine fitted with porcelain, and is still as good as ever.

IT is now established beyond the reach of controversy that intending purchasers of motor conveyances need not resort to France or to any other foreign country. In every essential respect the home made machine is equal to the best produced

abroad. Whether in regard to endurance, speed, hill-climbing, or safety, the British competitors in the Glasgow trials fully held their own against all comers, and the average price is also said to have been somewhat less.—*Globe*.

SOME time ago some of our readers stated that they found considerable difficulty in getting broken sparking plugs repaired efficiently in England. We now learn that the electrical department of the Speedwell Motor Car Company, of Broad Street, Reading, has taken this matter in hand and consequently are now in a position to execute repairs and renewals to all types of sparking plugs. They have sent us a sample of a repaired plug which it is difficult to distinguish from a new one, the repair compares favourably with similar work turned out by any French house.

A MOTOR fire-engine has this week been delivered to the Corporation of Eccles. The engine, which is intended for first aid purposes, carries five men, four ladders, 300 yards of hose, two stand-pipes, and other appliances. The contract requires it to carry this load at a speed of fourteen miles an hour, and to ascend any gradient in the borough. It is worked by electricity and oil combined. The preliminary tests have been severe, and the engine, carrying seven firemen, successfully turned out on Tuesday to false alarms.

A SIX days' test of reliability of motor-vehicles, organised by the Automobile Club of America, commenced on Monday last, when seventy-seven *chauffeurs* started on their cross-country trip from New York to Buffalo, a distance of 500 miles. The distance is to be covered in six days, Hudson being the first day's destination. The first car to reach Hudson was a 30 h.p. French machine, actuated by petrol, belonging to Mr. David Wolfe Bishop. Second to arrive was Mr. B. B. McGregor (petrol) and Mr. Albert C. Bostwick, (petrol) was third.

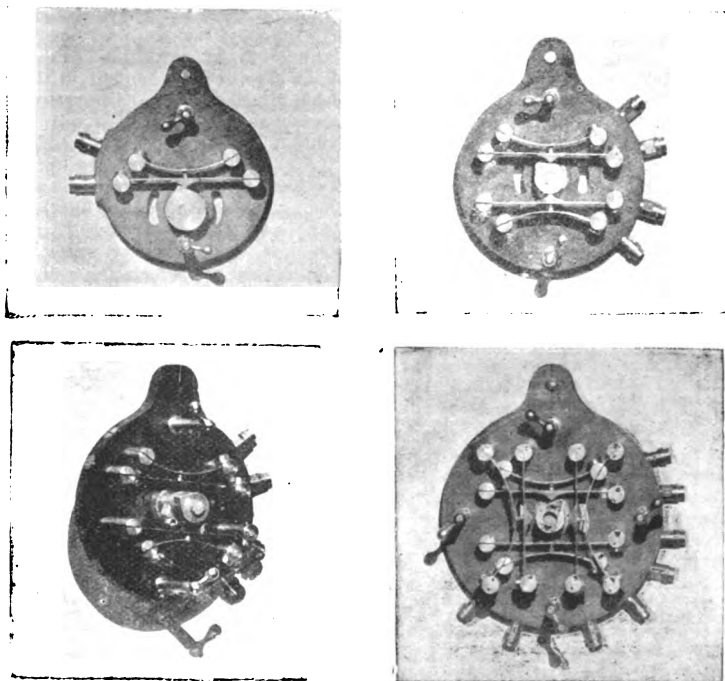
PORT-GLASGOW was last week the scene of a most unfortunate motor-car fatality, of which Mr. William Smith, sheriff's officer, was the victim. A motor-car, which is the property of Mr. Kidston, of Finlaystone, was approaching the town from the east, and, getting beyond the control of the driver in Robert Street, dashed violently into the corner at Blackston, at the same time knocking down Mr. Smith, who, though he did not appear to be much injured at the time, died a few hours later. The unfortunate gentleman, who was well known in Port-Glasgow, was seventy-one years of age. The occupants of the vehicle escaped without injury, but the car was badly damaged.

THE United Alkali Company, Limited, of Hazlehurst Works, Runcorn, recently hired a 2-3 ton steam lorry, from Messrs. T. Coulthard and Co., Ltd., to take a two ton load of "Red Maid" soap from Preston to Glasgow. It took four days only to reach Glasgow, including the ascent of Shap and other steep hills. This is a good performance, especially as water had to be taken every twelve miles. During the week of the Trials, the wagon ran about Glasgow and neighbourhood distributing samples and circulars. It now remains in Glasgow making deliveries of soap for Messrs. J. Gilchrist and Company, 37, Carrick Street.

MESSRS. DE DION-BOUTON AND CO. have now adapted their well-known petrol motor for launch purposes, and are prepared to supply engines of 3 and 4 h.p. complete with gear resting on an aluminium bed suitable for bolting to a launch. As a means of testing these engines De Dion-Bouton, Limited, have just had a boat constructed by a firm of well-known French builders, and also one by Messrs. A. Burgoine and Co., of Kingston-on-Thames. The former boat is now on exhibition in their Regent Street showroom, and the latter is lying at Messrs. Burgoine's boat-house ready for trial by any prospective purchaser. A great advantage of the De Dion motor is the power developed in proportion to the space occupied. Having electric ignition it can be started at once, and there is no danger from fire. The boat is very easily managed by one person, as the steering is effected by a slide at the side of the boat actuated by two handles, one of these being placed on the right hand of the engineer's seat, and the other towards the stern, so that it can be driven and steered by one person.

THE "B" ELECTRICAL CONTACT BREAKER AND IGNITION PLUG.

THE accompanying illustrations (Figs. 1 to 4) show the simple construction and mechanical arrangement of a new contact breaker, which, under the name "B," is being introduced by the Autocar Supplies, Limited, of Great Russell Street, London, W.C. The apparatus is applicable to motors with any number of cylinders, as the working parts are merely duplicated, or added as required. It will be seen that two pairs of metal uprights are fixed on an ebonite base, which



FIGS. 1 to 4.

supports two steel springs. Both springs are held firmly at one end by means of a screw, the other end running free in a groove on the top of the upright. In this way the springs cannot vibrate, but are free to move longitudinally as required. The straight spring has on its lower face a shaped guide piece held in position by a rivet, the head of which on the upper face of the spring is tipped with platinum. The bent spring has a corresponding platinum tipped contact point on its lower face. The cam shown below moves these springs once per revolution, causing a good contact to be made and broken again once per revolution,

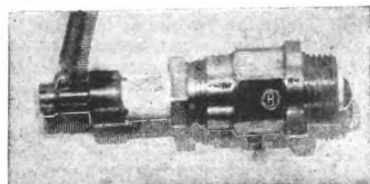


FIG. 5.

at whatever speed desired. The surfaces are always clean as the springs form a rubbing contact when raised or lowered by the cam. The whole is mounted on an ebonite base, and the cover is fixed by a thumb screw. It is claimed for the "B" electrical contact breaker that it has a rubbing surface which ensures cleanliness and good contact, and that no trembler is required in connection with it. The apparatus requires oiling slightly, and therefore is not subject to the disadvantages of similar devices in which great care has to be exercised in keeping them free from oil.

The Autocar Supplies Company are also introducing a new ignition plug. This is illustrated in Fig. 5, and is of the De

Dion type, made and mounted with very great care to ensure good conductivity. The composition used is of a special kind, and is practically indestructible. It is claimed that the composition will not break away except after very long use, and that the connections cannot become detached.

SOME OBSERVATIONS ON THE IRISH AUTOMOBILE TOUR.

BY CHARLES JARROTT.

It is to be regretted that a much larger number did not fulfil the promise made earlier in the season to the Irish Club to take part in the tour. The splendid arrangements made for the comfort and convenience of the tourists were somewhat wasted in view of the fact that provision was made all along the route for at least three or four times the number of those who actually turned up. The hotel people were particularly disappointed and I think to an extent the inhabitants of the larger towns we passed through also expected a much larger number of cars. The reception, however, was none the less hearty on this account and in every place en route the utmost enthusiasm prevailed.

Of the cars in the Tour four were taken over from England for that purpose, and were as follows:—Mr. Harvey du Cros, junior, on a 7 h.p. Panhard; Mr. Roger Fuller, on a 4½ h.p. De Dion; Mr. Buckee, on a M.M.C. car, and myself on another 7 h.p. light Panhard and Levassor car. Our reception, as I have before said, could not have been better and our thanks are due to Mr. R. J. Meeredy and Mr. Eaton, the indefatigable organisers of the Tour, for the provision they made for our comfort and for the success of the trip. I would also like to thank, through the *Journal*, Messrs. Hutton and Sons, of Dublin, who placed their extensive works at our disposal, storing our cars, supplying us with petrol, etc., and also Dr. Colohan for the assistance which he personally rendered. I cannot imagine a tour of a more interesting character throughout. At every village and town the whole of the inhabitants turned out and gave the tourists a splendid welcome. The police kept the road clear and the tour almost developed into a triumphal procession from town to town. In Carlow, for instance, on the first day, the Chief of the Police met the cars outside the town, and escorted them in personally, he occupying a seat on the leading car. Peculiar also was the reception afforded the cars by the peasants in the South and West of Ireland. Never having seen an automobile before, and in innumerable instances never having seen or heard of a railway train, the motor-cars presented to them a spectacle of a character they had never even conceived. Amusement, surprise, consternation, and fright were expressed in the various ways in which the cars were received.

It might possibly here be well to say something in regard to the roads as from a motorist and tourist point of view this is an all-important point. I must say that I had been very unfavourably impressed from the various accounts I had received from Ireland in regard to the character of Irish roads, but, after covering 1,200 miles on the roads in question, my opinion has been entirely changed, and while in places they are distinctly bad, there are, nevertheless, many splendid roads on which a motor-vehicle can travel top speed. At the same time the Tour mapped out was over roads of various descriptions, and I do not think I would advise the owner of a large motor-car to take his vehicle over for touring purposes, as I think the smaller type of vehicle is much more suitable, being handier in tight places and altogether more wily. For instance, I would personally never wish to take a more powerful car than the 7 h.p. Panhard I was driving. This seems to be an ideal car for the roads on which bad stretches were met with, and especially when one desired to do a little mountaineering by way of an experience. For instance, the ascent made by Mr. du Cros, Mr. Fuller, and myself of the Gap of Dunloe would have been quite impossible on cars any larger than those we were on, and had we attempted it with larger cars, only failure could have resulted. On some of the cross-country roads which we explored very bad humps were frequently encountered, and it was not difficult to imagine a large car negotiating one of these with the fly-wheel of the engine resting on the hump itself. These peculiar humps were not long or large but they were exceedingly sharp. Again, in climbing some of the mountain passes and also in descending, I appreciated the importance of having a light car with a powerful brake, as not only could one travel much faster, but also much more safely. I mention these few points in regard to the use of a small car as being important, as I think Ireland should particularly appeal to those motorists who do not drive fast, but who nevertheless enjoy motoring, and who would at the same time enjoy "sporting driving."

Ireland's fame is world-renowned from a scenic point of view, the beauty and grandeur of the Lakes of Killarney, the magnificence of the Kerry Mountains, and the constant change of effect and colour alone making the trip well worth the distance covered. In taking the route of the tour which has just been concluded, it will be seen that we had the opportunity of going through the finest districts in Ireland from this point of view. It might, therefore, possibly be worth while to deal with our runs day by day serially.

The first day was from Dublin to Waterford, and although this run did not present to us fine scenery, nevertheless it gave us very good roads, and a splendid pace was maintained, the English contingent being the first to arrive in Waterford. On the following day the run from Waterford to Cork gave us an opportunity of

inspecting the Duke of Devonshire's lovely Castle at Lismore. Here again the roads were splendid and we were able to travel very fast, being waved on with an encouraging hand by every policeman met with en route. The following day's run from Cork to Killarney gave the English motorist a taste of driving of a description we had not experienced before. One is not likely to soon forget the magnificent view obtained after climbing up and up to Windy Gap in the Kerry Mountains, and the experience of the run down afterwards through a winding path with acutely sharp corners requiring the greatest care in negotiation. Our first view of the Lakes of Killarney and the scramble into Killarney afterwards along a long twisting road was another never-to-be-forgotten experience.

On the following Monday, the day arranged for the run to Waterville from Killarney, Mr. Fuller, Mr. du Cros, and myself were discussing the possibilities of negotiating the famous Gap of Dunloe, about which we had heard so much, and regarding which we had been told, with a nod of the head intended to carry conviction, by every person acquainted with the Gap, that it was ridiculous to attempt to climb up on a motor-car, as only on one occasion had a wheeled vehicle of any description got through. Nothing daunted, however, we decided to make the attempt and, Mr. Fuller starting away half an hour before us, we eventually arrived at the bottom of the Gap to see him some distance up looking a mere speck waving to us by way of encouragement. We at this stage met with our first difficulty, as we found that the roadway was under water for some considerable distance and to proceed would necessitate driving our cars through the water, the depth of which we were totally unacquainted with. However, after making one or two soundings with a board close to the edge I decided to make the attempt, and covering up my sparking plugs to prevent their being drenched by the water thrown up by the fly-wheel, I plunged through, followed by Mr. du Cros, and came out the other side successfully. It is, perhaps, unnecessary for me to write much regarding the actual ascent of the Gap, as so much has already been written about it. At the same time, it must be recorded to the credit of the cars which successfully negotiated it, for I know of no harder piece of work than the climb accomplished that day, and, in fact, had I been over the ground beforehand I would have unhesitatingly declared that it was impossible for a motor-vehicle of any description whatever to have got through. With a steep cliff on one side and a fall of a greater distance than one cared to think about on the other, the possibilities in the event of the car stopping and running backwards were too varied to be contemplated. We caught Mr. Fuller up about two-thirds of the way, and the three cars eventually arrived at the top together, a triumph of the mechanical vehicle which at least the three of us who drove fully appreciated. It is interesting to record, also, that two ladies—Mrs. Edge and Mrs. Fuller—were on the cars during the ascent, and I had as my passenger at the time Mr. E. J. O'Reilly, of Irish renown, whose enjoyment of our success was keen beyond measure.

A glorious run from there through the Black Valley, with a little more mountaineering thrown in, over a road which apparently hardly ever saw a vehicle of any description, coming upon water falls practically unknown and beauty spots never heard of, was to us the most enjoyable run of the tour. We joined our comrades at Parknasilla for lunch, and told the story of our success to the almost incredulous ears of the rest of the party. Henceforth the two Panhards and the De Dion which accomplished the ascent were respected in a manner before unknown. From Waterville on to Killarney, from Killarney to Limerick, and from Limerick on to Kilkenny we proceeded, and on the latter run I had a funny instance of the awe-inspiring effect of a motor-car upon the ignorant mind. Having lost my way, and finding myself about fifty miles from the place where I should be for luncheon, I pulled up under the shelter of a house—for a rain shower was on at the time—and asked the way from three girls who were standing there for shelter. I know not whether it was the black mackintosh or the dust glasses which I had on, but in any event the motor had such an awe-inspiring effect combined with my presence in such an outlandish garb that without waiting any further they promptly took to their heels and bolted.

At Kilkee, I had to leave the Tour, as also had Mr. du Cros and Mr. Fuller, to return to Dublin owing to business. Our run from Kilkee to Tipperary on to Kilkenny, inspecting en route the famous Rock of Cashel with its beautiful ruins, was one of the best we made. From Kilkenny right on through the Wicklow mountains, staying a couple of nights at that beauty spot Glendalough, negotiating on the way the famous hill at Luggala—much to the wonder of the country onlookers—and we were once more in Dublin. Personally, I was gratified beyond measure with—shall I say—everything? Arrangements were perfect, scenery was perfect, everything was perfect, and I left Ireland with the recollections of a tour without question the most enjoyable in which I have ever participated.

Crossing over to Holyhead the three cars then proceeded to Birmingham with a nice little run of about 150 to 160 miles for the day, and the next day from Birmingham to London, and so home. It was exceedingly gratifying throughout the tour to be able to be at every place at the appointed time. The only trouble experienced by any of us en route occurred to me through endeavouring to pass a Kerry cart to which a mule was attached, and which very considerably occupied the whole road, thus forcing me into a stone wall. Even this, however, did not seem to disturb the going capabilities of my car, as after the attentions of the village blacksmith everything was in shape again and I was able to proceed on my way in about half an hour.

THE COOLING OF THE CYLINDERS OF HIGH-SPEED INTERNAL COMBUSTION ENGINES.*

In comparatively large, slow-running, stationary oil or gas engines it is easy enough to have a water-jacket with one or two fairly large tanks of cooling water; but, upon a motor-car, where weight is a prime consideration, the matter of cooling is one which causes great trouble, and the provision for which has involved arrangements of great ingenuity. In quite small motor-vehicles, such as motor-bicycles and tricycles, and even the small voiturettes—that is, with engines up to 3 h.p.—the movement of the vehicle through the air, or the provision of a revolving fan, is taken advantage of for the purpose of cooling the cylinders, the latter being provided with a small number of webs for this purpose. With small engines air-cooling is fairly effective in quite cold weather, but in hot and dry weather—which is, of course, chiefly the time when motor-vehicles are in requisition—even small motors of little more than 1 h.p. rapidly become heated with a corresponding falling off in propelling power, ultimately stopping altogether. No doubt, by careful management in the way of continual regulation in the admission of gas into the carburettor, and great watchfulness in taking advantage of every descent of a hill to cool the cylinder, and, further, by being content with a moderate speed of the engine, an air-cooled cylinder of 2½ to 3 h.p. can be kept cool even upon a fairly hot day. I have, however, recently had some experience with two tricycles, one having a 2½ h.p. engine, air-cooled, and another of the same power, with a water-cooled head, the latter being the most recent type of De Dion motor, in which a small tank of water is carried behind the saddle, and a small radiator, through which the water

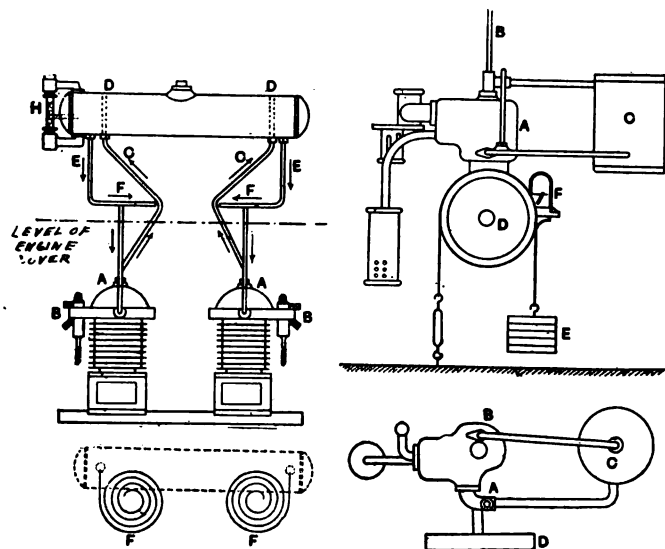


FIG. 1.—ELEVATION AND PLAN. FIG. 2.—ELEVATION AND PLAN.

circulates by gravitation, are employed. I have no hesitation in saying that the power developed in the latter case has been very much greater than in the former, while there is no comparison whatever in the distance which can be covered on a hot day by the two machines.

I have had a similar experience with regard to my two cylinder New Orleans voiturette. This car, in spite of many defects, such as are probably to be found in most motor-cars, is a fast little vehicle, and the air-cooled cylinders, which have a fan revolving between them, can in quite cold weather, or even with an abnormal amount of care in hot weather, be made to run very well. In hot weather, however, I have experienced so much annoyance with the heating of the cylinders upon a long run, that I first of all adopted the plan of allowing water to drop upon the air-cooled cylinder head from a reservoir when I found the cylinder was getting hot, but afterwards decided to replace the air-cooled heads with water-cooled heads. Since doing this I have never had any trouble whatever with the heating of the cylinders, or experienced any diminution in power from this cause. On one of the hottest days of the year the car went about a hundred miles, and returned a few days later without my experiencing any trouble, at any rate, from this cause. The details of the arrangement adopted are illustrated diagrammatically in Fig. 1. The hollow water-cooled heads AA, together with the valve chambers BB, which are in one solid piece, replace the ordinary ribbed head and valve chamber. The hot water rises directly from the centre of the top of the cylinder head by the pipe C, discharging at the top of the copper cylinder DD, while the circulation is maintained by the descending water passing out at the bottom of the copper reservoir by the pipes EE through a copper coil which is shown in plan at F. The circulation through one cylinder is entirely separate from that through the other, and complete in itself, both having, of course, a common reservoir in the copper cylinder DD, the level of water in which is shown by means of a water-gauge H.

* Abstract of paper read before the Mechanical Engineers Section of Glasgow Engineers Congress, by Professor Hele-Shaw.

It is interesting to notice that when the engine starts a warm layer can be felt by putting the hand on the top of the copper cylinder while all the rest of the system remains quite cold, and how, as the engine continues to work, the zone of heat travels downwards, showing that the hot water rises immediately, and remains on the top, and indicating the perfect nature of the circulation. In view of all the trouble I have seen and experienced myself with cars in which pumps are used, as they generally are, it seems a pity that circulation by means of gravity cannot always be employed. Both with the tricycle mentioned and with the voiturette the water on a hot day during a long run is for considerable periods at a time on the boil, without the power in any way appearing to appreciably diminish; whereas, on the other hand, I have been on larger cars where, owing to the defective working of the pump, the water was not circulating properly, and a considerable amount of steam formed. In the latter cases the power fell off in a very serious manner, although the engine never actually stopped, as I have seen it do with air-cooled motors. It is clear, on a little consideration, that the rate at which water is boiling off, and not the actual fact that water is in contact with the cylinder walls, must be largely a measure of internal heat of the cylinder. On the other hand, amongst those who are accustomed to drive motor-cars, there is generally a feeling that the engines work best at a certain temperature somewhere between that at which the water boils off and the cold state in which the engine actually starts. I have not been able to find that there exist any actual data upon this subject, and it seems to be a sufficiently important matter to be worth making some experiments upon. I, therefore, with the assistance of Mr. Gill, B.Sc., engineering student of the University College of Liverpool, experimented upon the 6 h.p. engine represented in Fig. 2. This engine, which has magneto electric ignition, was fitted with two thermometers, A measuring the water at the entrance, and B that at exit. C is a tank which was used when the water was allowed to remain at boiling point, but otherwise the two pipes were connected with the mains, and the water at exit kept at the temperature required by allowing a sufficiently rapid flow of water through the cylinder jacket. D is the flywheel upon which a dynamometer brake acts, so that the power can be accurately tested. A series of five trials were made, four with the water at different temperatures, and the fifth with glycerine circulating in the cylinder jacket and tank instead of water in order to obtain a higher boiling point and a higher temperature of the cooling liquid.

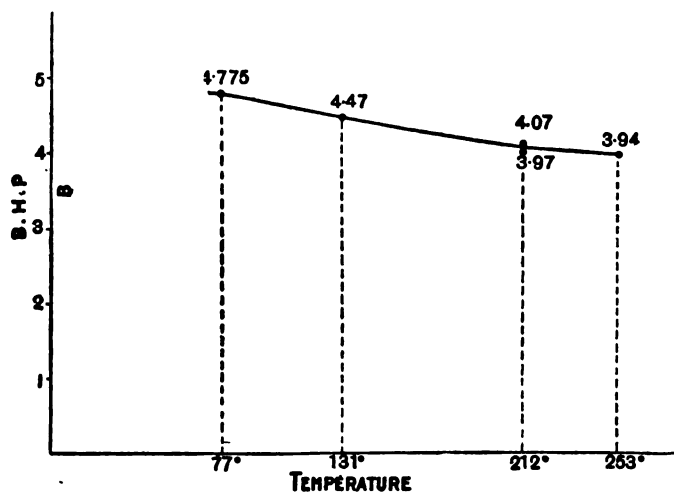


FIG. 3.—DIAGRAM SHOWING RELATION BETWEEN BRAKE HORSE POWER AND TEMPERATURE.

The general result of these trials is given in the following table and diagrams. (Fig. 3), in which the ordinates represent brake horse-power (which it will be seen under the best circumstances never exceeded about 4½), whereas the abscissæ represent the temperature of the water at exit. I have kept the two series of boiling off experiments separate from the other three, but the plotted results indicate the same general result:

SUMMARY OF TESTS.

Trial No.	Temp. of entry.	Temp. of exit.	B.H.P.	Revs.
1.	66.2 deg. F.	77.0 deg. F.	4.775	1086.3
2.	64.4 "	131.0 "	4.47	1084.0
3.	64.4 "	212.0 "	3.97	903.0
4.	212.0 "	212.0 "	4.07	925.6
5.	253.4 "	253.4 "	3.937	906.0

In experiments 1, 2, and 3 the water was running through. In experiment 3 only a small quantity was allowed to flow, it being completely evaporated. In experiment 5 glycerine was used.

The general nature of these experiments is immediately obvious, and indicates a falling off in brake horse-power as the temperature rises, the brake horse-power between the two extremes of temperature having fallen from 4.775 to 3.93, a diminution of about 17 per cent.

Each series of experiments represents, roughly speaking, about ten

observations, and were conducted as carefully as possible; but, at the same time, the difficulties of maintaining uniformly the temperature and speed of the engine were sufficiently great to make it undesirable to attempt to produce any mathematical statement from these results, and further and more elaborate experiments will be required of temperature taken in conjunction with the actual quantity of water used before any definite conclusion can be arrived at on this subject.

I have not attempted to discuss the actual cause or causes of the falling off in power as the temperature of the cylinder rises. Whether this is due to lubrication difficulties or thinning of the cylinder lubricant to a point which allows the piston rings to leak, or whether due to heating of incoming charge and consequent weakening of the mixture would afford matter for an interesting discussion. The advances in the construction of these high-speed internal combustion engines, and the rapidly-increasing power which is being evolved from them, warrants their careful study. Thus, in the recent Paris-Berlin race there were several engines upon light motor-vehicles capable of developing more than 50 h.p. with, in one case at least, a weight of not more than 10 lbs. per horse power. When it is remembered that this is not merely the equivalent of the steam engine, but of the engine and boiler, it will no doubt be admitted that any of the points, such as the cooling of the cylinders, which is an essential feature of the problem, is worthy of the attention of this congress.

FURIOUS DRIVING CASES.

At Colchester Police Court, James Paull was summoned for driving a four-wheeled motor-cycle at a greater speed than was reasonable, having regard to the traffic. Inspector Ward, in company with Police-Sergeant Alexander, saw the defendant driving the motor-cycle up St. Botolph's, towards Queen Street, at a rate of ten to eleven miles an hour. There was a lot of traffic about, and while going at that speed the defendant passed within three feet of a young man in charge of a market stall. There was no doubt that had the motor not been very skilfully handled he would have run into somebody. In the inspector's opinion the speed was excessive. The defendant denied going more than eight miles an hour. The defendant's father gave similar evidence. The chairman said the Bench had very carefully considered the case, and had decided to dismiss it without any comment.

At King's Heath, Charles Thompson was summoned for driving a motor-cycle at a rate greater than was reasonable on August 21st. Defendant offered to present his motor-tricycle to the King's Heath Bench or to the police if they found it was capable of travelling at a rate of thirty miles an hour, as was suggested by Police-constable Waters. The challenge was not accepted, and the Bench fined defendant 20s. and costs.

At Pocklington Police Court, H. Spender Clay was fined £5 and costs for driving a motor-car at twenty-four miles an hour on the high road between York and London.

At Yarmouth Police Court, Bertie Miller, motor-car driver, was summoned for furious driving on the Marine Parade. P.C. Legood said he saw defendant driving his car, laden with passengers, along the drive, on August 29th, and saw him collide with a lad on a bicycle, in consequence of his (defendant) driving on the wrong side of the road. Witness shouted to defendant, and he merely turned his head, and continued his journey. He considered defendant was driving at the rate of eight or nine miles an hour. Mr. Clowes, who appeared for defendant, submitted that the case was brought in consequence of the boy running into defendant's machine. Defendant was compelled to go round the lamp-post, on his wrong side, as the road was completely blocked, and he was unable to go the other way. Defendant was only driving at the rate of four or five miles an hour. The case was dismissed, upon the payment of costs by the defendant.

At the Pocklington Police-court, Lord Ingestre was fined £5 and costs for driving a motor-car at the rate of thirty-five miles an hour between York and Pocklington.

At the Huntingdon Police-court, Claude White, of Blairmore House, Bedford, was fined £5 and costs for furiously driving a motor-car on the Great North Road on August 20th. A constable said that defendant's car was travelling at the rate of twenty-eight miles an hour, and that, after being stopped, he drove off at the same pace.

At Eastbourne Police-court, Dick Farman, of Long Acre, London, was summoned for furiously driving a motor-car on the sea front. A constable said the motor-car in question went by "like a flash," and he should think it was going at the rate of thirty or forty miles an hour. Someone on the car had a camera and was taking cinematograph pictures. The defendant denied that he was travelling at a greater speed than ten or twelve miles an hour. Had he been he could not have successfully taken the pictures. The Bench imposed a fine of £5 and costs.

At St. Neot's Petty Sessions, C. C. Lovitt, of Holloway Road, London, was charged with driving a motor-car on the public highway at Buckden, on the 18th August, at a greater speed than twelve miles an hour. P.C. Purser and Arthur Plum gave evidence that the car was travelling at a speed of quite thirty miles an hour. Defendant did not appear but wrote to the magistrates' clerk. Fined £7 and 12s. costs.

At the Farnham Petty Sessions on Thursday, the 5th inst., an application was made for the adjournment of two summonses against Count Seilern, for driving his motor-car at excessive speed on August 3rd and 4th. Mr. Samuel Fleming, instructed by Messrs. Firth and Company, London, said two witnesses for the defendant were unable to be present that day. He read telegrams from Paris and Brussels, to the effect that the witnesses, Mr. Goldsmith and Count De Pret, would not reach London until the following day. Under these circumstances, the magistrates well knew that it was customary for an adjournment to be sanctioned, and he asked that the cases be adjourned for a week. The application was granted on the defendant's solicitor undertaking to pay the costs for that day. The chairman said the bench, in adjourning the cases for a fortnight, did not wish to establish a precedent. The adjournment was made for the production of the defendant's witnesses, and for the purpose of eliciting the truth.

At Altrincham, Edgar John Chambers, of Swinton, was summoned for furiously riding a motor-car at Altrincham on August 18th. Defendant pleaded not guilty, and was represented by Mr. R. B. Batty, solicitor, of Manchester. Constable Proctor and a man named George Heywood, of Woodhouses, Ashton-on-Mersey, spoke to seeing defendant riding at a speed of about eighteen miles an hour. Proctor said the road was full of traffic at the time, but defendant took the road, and the traffic had to divide right and left to let him through. Defendant was accompanied by his wife and children. Mr. Batty submitted that as the machine had a broken piston ring it was impossible for defendant to have ridden at any excessive speed. The Bench said they believed defendant had ridden at an excessive speed, and imposed a fine of £2.

At Ashford, Mr. Holden, of Eastwell Park, was fined £5 and costs for driving a motor-car near Ashford at a rate of twenty-five miles an hour; and his engineer, Albert Holmes, was similarly fined for driving at a speed estimated by a constable at forty-five miles an hour.

At Norman Cross (Hants.), Ernest Jennings, motor-car driver, of Fourfield, York, was fined £5 and costs for driving a motor-car at the alleged speed of twenty miles an hour on the Great North Road.

At Doncaster Borough Court, Mestrad Amedee, motor engineer to Captain F. J. Laycock, of Wiseton Hall, was summoned for furiously driving a motor-car through the town. Mr. Tovey, for the defendant, said at the time the summons was served he was under orders for his master to go to Paris, and he had gone, but he was returning. On behalf of Mr. Laycock he applied for a remand for a week, which was granted.

At Carlisle Bernard Brille, a French subject, was charged with furiously driving a motor-car at Kingstown, between Longtown and Carlisle. One witness, who said he kept a pony and trap and also a bicycle, stated that the car travelled through the village at fully thirty miles an hour; and another witness, who was a railway fireman, put down the pace at twenty to twenty-five miles an hour. Mr. Guthrie, the owner of the motor-car in question, and late member of Parliament for South Northamptonshire, said the car could not travel thirty miles an hour; and if anyone could make it do so he would give them the machine. He offered to take the magistrates for a trip in it, and had brought it to the court. The driver said he could not have gone much above ten miles an hour, as it took him an hour to get from Glingerback to Carlisle, which was ten and a-half miles. Mr. Guthrie said he did not value the opinion of the witnesses for the prosecution "one twopenny brass farthing." (Laughter.) It was complained that a chicken had been killed, and Mr. Guthrie said chickens had no right on the roads—they paid no rates. The Bench imposed a penalty of £5 and costs.

THE PLEASURES (?) OF MOTOR-CAR DRIVING.

A MOTORIST, writing to one of the dailies, considers that in the following he has not overdrawn the picture of the pleasures (?) of driving a motor-car in the suburbs of London:—

You go out of your stables at the rate of one mile an hour, on Sundays five yards an hour, as there are a few hundreds of cyclists coming down the Crystal Palace Hill at a speed varying between four and forty miles an hour. The police take no notice of them, the force being detailed for worrying motor-cars. You then proceed along the road to Bromley—fairly empty on Sundays—and on other days have to contend against the butcher's cart (always on the wrong side of the road), driving between twelve and twenty miles an hour; and the carts coming back from Covent Garden, with the drivers either asleep or reading the newspapers. At last you manage to get on the Sevenoaks Road, and you fancy that, as it is about twenty yards wide, you are fairly secure. Not so, however. Two fellows who, by their dress, must come from the aristocratic quarter of Whitechapel, shout out one to the other: "Look 'ere, Bill! Let's race this 'ere motor," and you find one bicycle on your left and another one on your right. If you are young and inexperienced, you try to put on a little extra speed, thinking that you will shake off the intruders. They keep up with you on the flat, say about a mile and a half, up to Farnborough Church, after which they take hold of your motor-car behind and allow themselves to be dragged up the hill, with some cheery remark like this: "I say, Bill! Ain't this fine?" You have no wish to be had up by the police for racing, so you stop the car and pretend to have some repair to do. The two gentlemen from Whitechapel stop, too, and inform you in a kindly spirit: "We'll wait for you, guv'nor." You then proceed to light a cigar and see the fun out, and, generally, after waiting about twenty

minutes, the two fellows get away. At Pole Hill, if you happen to look backwards, you will find between two and seven cyclists hanging on to your car. They do not drop off till they come to the Pole Arms public-house, and, as they have no further need of your services down the hill, they generally get in front of you, turn round and grin, always keeping within a couple of yards ahead, so as to make sure to have an accident if it be possible.

WITHOUT A LIGHT.

At Folkestone Police Court, Herbert Salter was summoned for driving a motor-car without a light in Foord Road. P.C. Smith said about 10.15 p.m. on the 9th ult. he was in Foord Road, near the baths, when he saw the defendant driving a motor-car without a light. He stopped him, and the defendant said that it had just gone out. Fined 10s. and 9s. costs, or seven days.

At Mortlake, Walter Pullen, of Uxbridge Road, Shepherd's Bush, was summoned for driving a motor-car at Barnes, on the 25th August, without having a lamp in the proper place. Station-sergeant Shepherd gave evidence as to the offence, which was committed after ten o'clock at night. The defendant, who said that he had had an accident with the lamp in question, was fined 40s., and 7s. 6d. costs.

AN UNATTENDED MOTOR-CAR.

At the Surrey County Petty Sessions Frank Sheppard was summoned for having left a motor-car, unattended on the highway on 18th August last. P.C. Lucas saw defendant drive a motor-wagonette containing some eight persons along the London Road. It drew up at the Green Man, and all of the occupants alighted, leaving the car unattended for eleven minutes. The magistrates dismissed the defendant with a caution.

NO LICENCE.

At Kingston, Elias Jessurum, of The Holme, Walton, was summoned for keeping two four-wheel carriages without licences. Defendant, who did not appear, was represented by Mr. T. Young, solicitor. Alfred Henderson, an officer of the Inland Revenue, stated that on April 13th he saw the defendant use a motor-car, and on the following day he was driving another car, for neither of which he had a licence. Defendant had since been written to, but no licence had been taken out. On April 14th the defendant was driving a car to hold four or five persons. Cross-examined: Witness had had some correspondence about the cars with the defendant, who stated he was manager of the Monarch Motor Company, and that he did not keep the cars in the legal acceptance of the term. Defendant had admitted to witness that he sometimes took his wife and other friends with him in the car. Mr. Young contended that his client, as manager of the Monarch Motor Company, required no licence to show the cars to would-be purchasers, who, on buying the cars, would take out the licences. On the date in question defendant was out with a car showing it to a probable purchaser. The Chairman remarked that defendant should have been present to have stated that on oath. Eventually the Chairman said that the simplest matter would be for the Bench to convict, and give the defendant an opportunity of appealing. A fine of 40s., including costs, was imposed.

M. JULES DUBOIS, who will be remembered in connection with the 1,000-mile Trial in this country, has, in conjunction with M. P. Onfroy, just started in business at 71, Avenue de la Grand Armée, Paris, as the Société des Automobiles et Moteurs "Herald." Their speciality is a light car, to which they have given the name "Herald."

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COMMENTS.



THAT charming district which lies about Oxted, Caterham, and Godstone has been the scene of operations in which a combined force of police and magistrates scored a decided victory over a batch of five motorists, capturing £17 2s. The police tactics were of the usual effective order, measured track, concealed officers, and speed, as far as four of the victims were concerned, estimated at an average of twenty miles an hour. The legal proceedings which followed were only marked by one incident of note. One of the motorists charged with excessive speed did not put in an appearance, and in his absence was called upon to contribute £1 more to the pool than his three companions in misfortune, who were present or represented. Absence of body, however desirable in a railway accident, is not be commended when fines are being distributed to motorists. For blowing off steam, or petrol—the police constable was not quite sure which—a fifth victim contributed £2 and costs to the pool.

A Bold Invasion.

VERY different are the conditions of metropolitan traffic from those prevailing in a provincial town, but this has not deterred Mr. F. J. Bell from endeavouring to repeat in London the success he has achieved in Bournemouth with his M.M.C. public service cars. On Wednesday he set the ball a-rolling with two vehicles, each capable of carrying eight passengers, and hopes in due time to increase the stud to ten. The cars will ply between Piccadilly Circus and Putney Post Office, and the fares are fixed as follows:—Putney Post Office to South Kensington Station, 2d.; South Kensington Station to Piccadilly Circus, 2d.; Putney and Piccadilly Circus, 4d. The cars have a canopy top and glass windows. They are painted in red, black and yellow, and carry a board inscribed "Putney, South Kensington, and Piccadilly Circus." The motor is of 10 h.p., with two cylinders, and the usual four speeds and a reverse are fitted. It is expected that the cars will do the journey in about half the time taken by the ordinary 'bus, and as there are no penny fares there will be fewer stoppages, as most of the passengers will travel at least halfway, and many go right through. No conductors' wages have to be paid; the passengers put their fares into a locked receptacle, as is done on some of the halfpenny suburban 'buses. In one respect, perhaps, the new service has a better chance of success even than in the provinces, the very fact of the traffic being so great in London tending to enhance the superiority of a horseless vehicle, which, apart from its inherent speed capacities, can dodge about so easily among the lengthier vehicles. The route is practically level throughout, and should not impose any undue test on the cars.

The Speed of Motor-Cars.

At Cirencester Rural District Council, on Monday, Mr. R. H. Harrison called attention to the great danger to the public and the residents of his parish by reason of motor-cars scorching down the Gloucester and Cheltenham roads at thirty or forty miles an hour; and he moved that the attention of the County Council and the police be specifically called to the matter. The motion was carried unanimously. At the monthly

meeting of the Grantham Rural District Council a letter was received from the Clerk to the Kesteven County Council with reference to the regulation of the speed of motor-cars. Sir Hugh Cholmeley said they did not object to twelve or fourteen miles an hour; what they objected to was forty. It was decided to petition the Local Government Board to amend their regulations so as to include the registration and numbering of motor-cars.

No Amalgamation.

ATTEMPTS are still being made to reduce the authority of the Automobile Club and the other recognised organisations of the motor trades by the amalgamation of the cycle and motor trades in a joint association. These efforts have previously failed, and from the report of the meeting called by the Cycle Manufacturers Trade Protection Association (which appears in another column) the latest endeavour is doomed to a similar fate. Representatives of the motor industry were invited to attend, but very little interest was taken in the gathering, and there was only a scanty attendance. Attention was drawn to the existence of the Automobile Mutual Protection Association and a resolution was adopted declining the suggested amalgamation. Mr. S. F. Edge's naive remark that he did not know of the existence of the Automobile Mutual Protection Association created some amusement; and it was very evident that the motor traders present were anxious to maintain that loyal unanimity amongst themselves which is essential to the self-government of the industry.

Mutual Loyalty.

THE agreement of the motor trades to exhibit only at the Automobile Club's Show is probably one reason for the proposition made by the Cycle Manufacturers Trade Protection Association, which has thus been rejected by those intimately concerned. Those associated in any way with the industry who are giving sympathetic publicity to this attempt to undermine previous decisions are scarcely acting in a spirit conducive to the loyal unanimity of the trade already expressed in public meeting. This spirit should have been recognised and acted upon by our friends at Coventry, whose persistent efforts to secure the actual amalgamation of the trades have, so far, been met with reverses. The truth is that those interested in the motor industry know their own business best and are the proper people to settle their policy. That having been shown in loyal adherence to a decision to acknowledge the Automobile Club's Show as their only exhibition, minor attempts to create dissension will have little sympathy from those concerned with the future prosperous developments of the industry.

The Number of the Beast.

THERE is no doubt that an advance in the direction of more liberal and rational legislation would be welcomed by the automobilist, reluctant as he may be to suggest that such is advisable. But the offer to place him on an equality with other traffic as regards speed regulations might be purchased too dear, and before any motorist—or councillor for the matter of that—makes up his mind on the numbering question, it would be advisable for him to pay a visit to a country where such regulations are in force, and see what it looks like. The effect of a conspicuous enamelled plate, of early Georgian architecture, aggravated tenfold by a numbered tin lamp at the rear, on an

otherwise smart-looking car, must be seen to be appreciated, and amply excuses the mistaking of such by a tourist for a public vehicle, as occurred to our knowledge recently at a Belgian watering place; while the many objections to it besides the merely æsthetic deserve even more serious consideration. The exaction of a certificate of capability, though in some ways repugnant to our ideas of "freedom," would be less objectionable, while if it could be applied impartially to the other users of the road, the latter would be quite remarkably cleared for up-to-date traffic; but, alas! such a suggestion is but a counsel of perfection.

A Racing Track.

MR. JOHN BLACKMORE, of West Buckland, Wellington, Somerset, revives the suggestion already made in these columns for a special racing track for motorists. He gives definiteness to the idea by instancing the road between Wellington and Taunton as suitable for the purpose. The track, he says, might run a little distance above the turnpike road, just as the railway runs a little below it; then anyone walking or riding on the road would possibly have the pleasure of watching races between a train and a motor-car. Or, if it would be better, the track might be close, or nearly so, to the railway below the road.

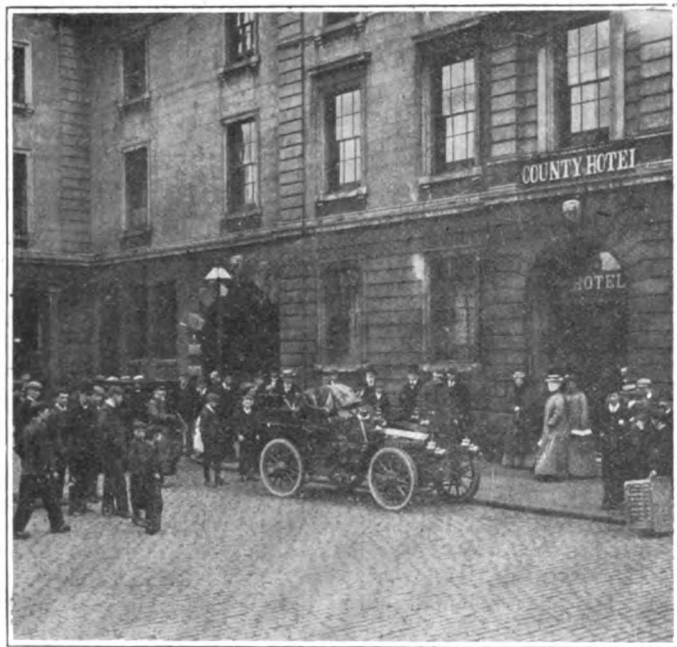


Photo by

A MOTORING PARTY AT CARLISLE.

[Mr. T. B. Percy.]

Alas! from Sheffield.

SIR HOWARD VINCENT, M.P., knows a good deal about politics and police, but his views on motor-cars are not nearly so accurate and sympathetic as are those of his colleague in the representation of Sheffield, the Rt. Hon. Stuart Wortley, K.C. Mr. Wortley's speech at one of the dinners of the Automobile Club is still gratefully remembered by automobilists; Sir Howard Vincent's letter to the *Times* has been received with something approaching disdain. Entirely ignoring the fact that motor-cars have to pay a licence, Sir Howard proposes a tax of £5 on motor-cars, and in support of his suggestion makes two misstatements, firstly, that a good machine cannot be bought for less than £500, and secondly that "so rapid is his (the automobilist's) progress that he spends little or nothing on the way." A glance at the show-rooms of motor-car agents and dealers will contradict the £500 fiction, and any hotel proprietor

can testify to the value of the motor-car as regards increasing the number of his guests. The motor-car will revive something of the prosperity associated with good-class inns in the old coaching days, and Sir Howard Vincent must allay his irritation with regard to the motor-car. His brother, Sir Edgar, is an automobilist, and we would suggest they should have a fraternal chat over the subject before he next rushes into print.

A Tax on Cutlery.

REVERTING back to Sir Howard Vincent, the Rt. Hon. Sir J. H. A. Macdonald, president of the Scottish Automobile Club, has a pretty thrust at the anti-automobile knight. His taxation proposal, says the Lord Justice Clerk of Scotland, is much the same thing as if someone were to ask the Chancellor of the Exchequer to put a heavy impost upon Sheffield cutlery because there were a few cases of stabbing in the newspapers. The idea is equally logical.

Carriage Builders and Motor-Cars.

IN the course of his presidential address to the British Institute of Carriage Builders at Bristol, on Tuesday, Mr. Alexander Naughty remarked that, judging by the number they saw about, and by the number of orders in the manufacturers' hands, motor-cars were, undoubtedly, going to play an important part in the vehicular traffic of this and other countries. When visiting a carriage builder's factory a few weeks ago, it was an eye-opener to him to see the number of bodies being built to place on electrical motors. He considered that the business should be in the hands of the carriage builder, and that the best results would be attained by the carriage builder and the engineer working together. Carriage builders who had more than one son would show their far-sightedness by inducing one of them to learn engineering. It was only adding one more to the many branches of their calling. In the discussion which followed Mr. G. Hooper said that carriage builders must adapt themselves to the changed circumstances. He had, however, no fear that the carriage trade would be crushed out by motors and cycles. Mr. J. Roberts advocated carriage builders getting motor-cars and learning all about them. Mr. W. Hooper expressed similar views. They should also try and obtain a share of the work of motor-cars, and later on endeavour to secure the whole. Mr. Angus said they should act with caution, because, while probably a good deal of money was to be made out of motor-cars, a great deal of money was to be lost before perfection was reached. Mr. James Young was of opinion that carriage builders should form a syndicate which should choose a particular motor to recommend to their members. Mr. Alexander Henderson said they might make carriages, but the present generation of carriage builders could not make motors.

Yorkshire Automobile Club.

A MOST successful run was held by the members of the Yorkshire Automobile Club on Saturday afternoon last to Boston Spa. The Bradford, Leeds, and Harrogate contingents (which paraded separately) met at the Church, Collingham, and then proceeded to the Royal Hotel, Boston Spa, where tea was served. The return journey was commenced about 7 p.m. The following members and friends were present: Mr. T. E. King (vice-president) and son (Century tandem), Mr. Bishop (Royal Enfield tricycle), Mr. and Mrs. Barnes (De Dion voiturette), Messrs. Ladmere (Daimler), Messrs. Faires and Jones (De Dion voiturette), Mr. Berry (tricycle), Mr. P. McGuire (M.M.C. tricycle), Mr. Hey (hon. treasurer) (Eadie tricycle), Messrs. Geo. Firth and H. Pickles (Royal Enfield quad), Messrs. Palmer and A. W. Dougell (hon. secretary) (Mors car), Mr. and Mrs. Burrows and Mr. Noble (Star car), Mr. and Mrs. Johnson (car), Mr. Winn (tricycle), Mr. B. Walker (De Dion tricycle), Mr. Heaton (tricycle), Mr. and Mrs. Carpenter (quad). The next run will be to the Crescent Hotel, Ilkley, at 3.30 p.m. on September 28th.

The Motor-Car to the Rescue.

THE motor-car has again proved its usefulness. On Tuesday night, the 10th inst., an explosion took place at Llanbradach Collieries, resulting in the death of many men. The engineer of the colliery, who resides in Aberdare, was informed that there was something wrong at the colliery and that he was urgently wanted. By train he could not get to Llanbradach until about 11.45 p.m. Mr. W. Parker Thomas, of the Aberdare Valley Motor Company, Ltd., heard of the accident at 8.20 p.m. and at once offered to drive the engineer by motor-car. The offer was accepted and by 8.35 p.m. a car was at the engineer's house ready for the 16 miles journey over the mountains. The journey was commenced at 8.40 and Llanbradach was reached at 9.45, thus gaining two hours over the train. The engineer and Mr. Thomas remained at the colliery all night and returned to Aberdare in a pouring rain next morning in time for breakfast. We may add that the car employed was a 6 h.p. Daimler, which has been in daily use for the last two years.

A Patriotic Industry.

THE prominence given to the story of the motor-car in France, which has just appeared in the *Pall Mall Magazine*, from the pen of Mr. Robert Crawford, has evidently proved of considerable interest to English journalists—judging from the quotations that have appeared in various newspapers. Mr. Crawford declares that the 1902 motor-carriage will be lighter and cheaper than the present one, and that the efforts of builders in the future will be directed towards improving the gearing and organs of transmission. With regard to the future of automobilism, the author rightly points out that it will mainly depend on the professional classes rather than upon the men who can spend hundreds of pounds upon a racing car. Prices, he says—and the point is one worth discussion in our correspondence columns—tend to shake down to £40 for every horse-power. In France about one million sterling is invested in automobile works, which employ ten thousand men. Probably, according to Mr. Crawford, 60 per cent. of invested capital gives no dividend; 35 per cent. gives a return of 4 or 5 per cent., and the remainder yields dividends ranging from 8 to 800 per cent.

Colonel Crompton on the Motor-Car.

COLONEL R. E. CROMPTON, in his presidential address to the Mechanical Section of the British Association, said that a most important problem in locomotion was that caused by the congestion of street traffic in our towns and by the undoubted difficulties which existed in carrying workers to and from their homes in the country to their places of employment in towns. After many years of objecting to the use of the overhead trolley system, town authorities seemed now to have determined that the only way of relieving street traffic was by an enormous development of electrical tramways. It seemed opportune to point out that a great deal of mischief might accrue from this indiscriminate use of tramways. Vehicles on the plain road surface could overtake a stopping or a slower vehicle going in the same direction without interfering with other vehicles, but street tramways must stop to set down and take up passengers, and this limited the speed average and the number of vehicles. It appeared certain that, although the provision of electrical tramways was undoubtedly an economical means of carrying passengers, these tramways could not be laid in existing thoroughfares without considerably reducing the total road carrying capacity at times of heavy pressure of traffic, and it appeared likely that either for the daily transport of the workers to and from their homes to places of employment, or for taking great crowds out into the country for pleasure purposes, a motor-car service carried out on well-made roads would compete favourably with, and in many ways might be preferable to, tramway service.

Points for Improvements.

CONTINUING, Colonel Crompton remarked that to be universally successful motor-cars must be made so as to reduce to a minimum the liability to break down; repairs must be limited to the replacement of worn or damaged parts by other parts, which must be supplied by the manufacturers so as to be readily put in by unskilled users. The organised manufacture of machines with thoroughly interchangeable parts could only be developed after the type of machine had settled down, and this up to the present could not be said of the motor-car or motor-wagon. At first sight steam, with the complications of boiler, engine, and condenser, did not appear likely to compete favourably with the simpler spirit motor, but for heavier vehicles, where steady, heavy pulling power was of importance, up to the present no internal combustion motor had competed with it. A great deal required to be done in the improvement of the pneumatic tires, which at present became excessively hot, and therefore damaged, by high-speed runs. At high speeds the mechanical work done on the material of which the outer covers of pneumatic tires were composed was excessively high. It could probably be reduced by increasing the diameter of the wheels, but only at the cost of increased weight and, to some extent, of stability, for the side strains on the wheels of motor-cars when swinging round curves of sharp radius were very great. Another direction in which mechanical invention was required for the wheels of motor-cars and wagons was a shoeing or protection of hard material of easily renewable character which could be firmly and safely attached to the outside of the tire covers.



THE DECORATED "LOCOMOBILE" AT GLASGOW.

A South Australian Motor-Car.

AN Adelaide journalist, who has had an opportunity of judging, writes enthusiastically of motoring in South Australia. At present there are but four cars in Adelaide—Dr. Gault's New Orleans, Mr. F. C. Ayers's Deschamps, Mr. R. Davis's De Dion, with local built body, and Mr. Lewis's car, which is entirely a local product, having been designed and built at the Lewis Cycle Works. Recently the journalist to whom we are indebted for the above interesting particulars accompanied Mr. Lewis on some trial runs. The colonial-made car, which was illustrated in a recent issue, successfully negotiated the old road

to Norton's Summit, which at one point (Belair Hill) is steeper than any other road in the district, and has been ridden by very few cyclists. Dr. Gault's car, which was imported from England, has often been taken up the Belair Hill, which is just three miles long, its best time, it is said, being 21 minutes. Mr. Lewis's car accomplished the journey in 17 minutes, at the rate of 10.59 miles per hour. On the flat the machine, which is of about 5 h.p., is capable of a speed of nearly twenty miles per hour. The return to Adelaide, by a different but hilly route, was also successfully accomplished.

Belt Transmission Experiments.

A SERIES of experiments on belt transmission is at present being conducted at the Worcester Polytechnic Institute at Worcester, U.S.A., by Professors Allen and Furlow. The Alden hydraulic absorption dynamometer is being used in the experiments for measuring power. All the various forms of pulleys used in practice are being experimented with—ordinary steel or cast-iron pulleys, wooden pulleys, wooden pulleys with leather coverings, rubber covered pulleys, steel pulleys with air-holes, and steel pulleys with cork inserts. The last are claimed to be the most efficient of any, transmitting 60 per cent. more power than any other pulley of the same size. The most advantageous belt tensions with the various pulleys are also being investigated.

High Prices and Slow Sales.

IN these days of "small profits and quick returns" motor-car makers must not go far outside the ordinary methods of trade. They must be satisfied with reasonable profits—sufficient, of course, to cover their heavy expenses and the rather uncertain character of the business, but still not beyond reason. In some Continental towns progress has been delayed by agents fixing prices out of proportion to the risks and chances of business. Here the public is not wholly without a notion that excessive charges have been made; the sooner that is dispelled the better for the more rapid advance of the industry.

Exchange Wanted.

A GENTLEMAN in the north of London, who has long been accustomed to drive his pair of horses, has become converted to the advantages of motoring; hence the following advertisement:—"First-class single brougham, rubber tired; also American park phaeton, hooded, rubber tired, new; and nearly new American light artistic van, rubber tired; good horse and harness that fits all three for sale, or exchange for good petrol motor-car, with tonneau or phaeton body." Unfortunately for the advertiser, no motorist is likely to entertain the suggestion, for automobiles are not readily dispensed with by users who have learned to appreciate their many points—quite as numerous as the good points of a horse.

An Automobile Blue Book.

FROM papers to books is an easy stage, and in America the automobile has not only its weekly organs, but it is now to have its annual publications. The Automobile Blue Book is announced, and it will evidently cater for those who are thinking of touring in the United States. Among the contents are descriptions of seventy routes adapted for automobile travelling, and extending in a radius of fifty miles from New York, Boston, Philadelphia, and Washington. There is also to be a list of 500 stations provided with repair and supply facilities. All this is interesting as showing how completely the Americans are going in for the motor-car, and also the great effect that such development will have on the highways of the country. Hitherto the great roads of the States have not been particularly inviting to those who care to travel long distances; the era of improvement has evidently set in.

Eating Oats off Cars.

To accustom horses to motor-cars many suggestions have been made; that carried out by Mr. H. Stratton Bates at Langtons, Alresford, has been very successful. He has invited those of his neighbours possessing timid horses to send the animals to his stable yard. Having started the engine of the motor-car and placed a sieve of oats on the car the horse quickly overcomes his fears, and invariably quickly makes up his mind to eat off the vibrating car. This method is certainly a trial to the horse, and the animal that can manage it successfully should be well behaved and orderly in bearing when meeting automobiles on the road.

Fruit Growers and the Automobile.

THE fruit growers of Kent are not the only people interested in the produce of orchards to whom the automobile is likely to become an indispensable help. In southern California the orange growers have suffered much loss because of the inability of the Southern Pacific Railway to furnish transportation for their oranges, which have rotted while waiting for the railway wagons. It has been decided to get over the difficulty by establishing a service of motor-cars to carry oranges from the groves to the port of Los Angeles, for shipment to Seattle on their way eastward via the Great Northern Railway system. This "jointing up" of rail and steamer facilities by means of the motor-car is likely to be an important development in the future—not only in the United States but also in the old country.

Looking after the Roads.

THAT the management of our public highways will become a question of "practical politics" in the near future none who have watched the progress of the automobile movement can doubt. While they are admirable in many places they are execrable in others, and nothing like uniformity in the condition of surface prevails. In some Continental countries the roads are looked after by the military force corresponding to our Royal Engineers. There is something in the suggestion that we should find employment for some of the Army in the same way. Anyhow the point will be worth considering when the matter has come more prominently to the front.

Helping the Horse.

The occasion of the great annual Horse Show in Dublin has led a leading Irish journal to make some melancholy reflections on "the friend of man." As motor-cars advance in favour the value of the horse for transit and transport purposes will decrease—for which the horse should be thankful. It is pointed out that the "companionship of the horse" is absent in motoring. This, however, is but an incident, and those who are so anxious to have an equine companion can hitch the animal on behind, or have him trotting alongside level with the steering wheel. Such little things must not be used as flies on the wheel of automobile progress.

Education Wanted in Scotland.

How greatly certain Scottish districts are in need of a proper course of automobile education is revealed in the reception at Ayr of the vehicles which took part in the recent trials. According to a veracious local chronicler the natives of the town were not favourably impressed, and "the haggard appearance of the travellers when they arrived shook our faith in motor-cars as much as the drivers themselves had been shaken." We can only say that the men of Ayr had little faith and that their ignorance of the automobile was the most conspicuous display made by them recently. The 1,000 mile tour did inestimable value for the industry in England, and the results of the Glasgow trials are penetrating the minds north of the Tweed. But the work is not yet finished.

ACROSS THE AUSTRIAN ALPS ON A MOTOR-CAR.

ONE of the most pleasant travelling experiences of my life, states Herr Lukacsy Lajos, in the *Allgemeine Automobil Zeitung*, was an automobile excursion across the Alps which I made last summer in the company of Count Stephen Gyulai. Cyclists and automobilists mostly shun the Austrian Alps. Cyclists, because they know what efforts would be required of them in mounting the steep inclines of the mountain ranges; automobilists, because they prefer to travel at a rapid rate, at the same time saving wear and tear on motors and machinery. Count Gyulai's ambition was not dampened by such considerations. On the contrary, his fondest wish was to traverse the Alps where the mountain roads are known to be most steep and arduous.

We started from Vienna in a 12 h.p. German Daimler with three persons on board—Count Gyulai, myself and a *mécanicien*. At an average speed rate of thirty kilomètres per hour we reached Linz, where we spent the first night. Our next stations were Salzburg, Innsbruck, and Landeck. Notwithstanding the hilly roads in this region of salt mountains our average speed continued to be thirty kilomètres. After we had passed Prutz, in the Tyrol, we came in sight of the glaciers, and soon were driving at a comfortable gait over the famous Finstermunz road, the numerous tunnels and wall buttresses of which make this route one of the grandest monuments to road construction. It was a steady incline, but presently, at Reschen, we reached the highest point of this wonderful road, and beheld the magnificent view over the great range of the Ortler mountain. Now we could go at a more rapid pace, and flew on to Prad through the Valley of the Etsch. Toward evening, at a greatly retarded speed, we climbed up to glacier altitude and finally put up for the night at the Hotel Trafoi. In three hours and forty minutes we had covered 102 kilomètres, whereas the stage coach, drawn by five horses in four relays, takes ten hours.

The next day was to bring hard work for our brave motor. We began our ascent of the Stilfser Pass. This famous pass is traversed by the highest macadam road in Europe, and had never before been attempted by an automobile. It was no easy matter to overcome one after another of the many serpentine windings by means of which this high pass is reached. It appeared doubtful once or twice whether the twelve horse power of our motor would hold out until the end.

It is a curious thing when mechanical horse powers succumb to fatigue. There seems to be that same "tired feeling" as in real horses. In such cases the teamster urges his horse with a whip, and we, too, realised that some sort of spur would be

needed. Our method of urging on the motor had the advantage of being quite painless. Count Gyulai would stop the carriage and would let the motor run free at the highest number of revolutions. It worked like a charm. After a few minutes of such treatment our carriage would run up the steep grades as if it never had been tired.

Laymen may not understand how this is possible. The explanation is simple. Of course, much more strain comes on the motor while climbing grades than on the level, so that it soon becomes overheated. The hotter the motor becomes the slower become its revolutions. This likewise retards the revolutions of the pump. The hot water does not flow off and the cold water for cooling the cylinders is slow in coming. It is

at this point that an extra stimulant is needed. By letting the motor run free at top speed the pumping is similarly accelerated. The cold water floods the hot cylinders and cools them off quickly. Thus the motor is once more reduced to a normal temperature and works with fresh vigour.

By such tactics we succeeded in overcoming the long winding gradient of fourteen kilomètres, with a total ascent of 2,000 metres, in one hour and four minutes. At the top we met the carriage of the Heir Apparent of Austria. The Prince was astonished to meet an automobile at so high an altitude, and was still more surprised at the good time we had made. His light travelling carriage, drawn by five horses, had taken five hours to cover the same stretch. Needless to state, we left the Prince's carriage far behind on the way down. Nineteen long kilomètres we coasted down a most beautiful road, giving glimpses into the valleys of Italy.

Our success in crossing the Stilfser Pass made us more enterprising, and we resolved to make a try at the more formidable Pass of Rolle, and thence over Monte Croce to Primolano Borgo. So far we had made our journey without mishap. Shortly

before reaching Borgo, however, we had one piece of bad luck after another. First, the pneumatic tire of the right front wheel gave out, then its mate on the left side. This was the more provoking, since we had carried reserve tires all the way, and had only just left them at Bozen to save weight. Without pneumatic tires on our front wheels, we jolted along our way to Borgo. A beautiful moonlight coast from Borgo down to Bozen, after our reserve tires had reached us, offset all our previous misfortunes.

To add to our enjoyment Count Gyulai's sister joined us at Bozen, and thenceforth we made our journey with a full complement of four passengers. We crossed over to Italy by way of the steep pass of Fugazze. The Custom House officers at the frontier stared at our carriage in open-eyed wonder. It was the first automobile that had ever attempted this steep pass. Having passed the frontier, we coasted down into Italy



BETWEEN AUER AND CAVALESE.

at such a rate that we left a trail of dust behind us as far as the eye could reach—like the tail of a comet. Over the smooth even roads of the valley of the Po we ran towards Venice. At last we reached Mestre, the last stopping place on the Venetian mainland. There we left our car in a well-appointed automobile stable, standing side by side with a Peugeot, a Benz and several motor-cycles.

On our way back from Venice to Vienna we resolved to try issues with the railway. With this end in view we selected a straight stretch from Venice to Toblach through the valley of Ampezzo. It took us five hours and fifty-five minutes to cover the 184 kilometres of this stretch. The railway train, which has to follow a circuitous route, took eleven hours and twenty-seven minutes. During the whole journey of 2,271 kilometres (1,420 miles), we used 360 kilogrammes of petrol, replenishing our stock at all the large towns.

[With the present issue we publish a double-page supplement, on which are given several illustrations connected with the account of the interesting trip over the Alps.]

CONTINENTAL NOTES.

BY "AUTOMAN."

THERE scarcely remains a King or a royal personage now who has not ceded to the charms and delights of motoring. The aged Emperor Francis of Austria, in going to meet his daughter the other day, was met at the station by her, accompanied by her husband, in an automobile. The Emperor did not need to be asked twice to join them, but before accepting the invitation he said, with a laugh, "I hope you won't upset me." Needless to say this hope was realised. The King of Portugal has bought a motor of French manufacture, and may be seen almost daily exploring the country round Lisbon, accompanied by his brother, Don Alphonso. Don Carlos, the pretender to the Spanish throne, has also now become a fervent automobilist. King Leopold the Second, as is well known, has already many cars, but it is now rumoured that he is contemplating the purchase of a 40 h.p. Paris-Berlin type, so that speed would seem to have attracted him. It is said that his daughter, the Princess Clementine, who always accompanies him on his motor-car journeys, is also fond of a good spin.

THE visit of the Tsar and Tsarina to France would, of course, not be complete without a motor-car, and a 20 h.p. six-seated car will be placed at their disposal during their stay at Compiègne. As this car is one which took part in the Paris-Berlin race, and as it is going to be driven by M. Joseph Journu, it looks very much as if it were the car belonging to Baron Von Zuylen. At any rate the description answers exactly, and it was M. Journu who drove the Baron Von Zuylen from Paris to Berlin in the tourist section.

FOURNIER writes a letter from New York, addressed to the *Auto-Velo*, in which he states that immediately on his arrival in New York, and before he could get to his room in the hotel, he was pounced upon by journalists and photographers, and finally induced to sign an engagement with the Madison Square Garden Theatre, where he is to exhibit himself every night. As he has not taken his car yet, the only thing he could do was to mount a motor-bicycle, on which he had a most enthusiastic reception.

THE new French regulations with regard to the running of automobiles in France have now been made public. The principal points are the following:—Automobiles weighing more than 350 kilogrammes, when empty, must have a reverse motion; the certificate of each carriage shall say what speed it is capable of attaining on the level, and if it can attain a speed of more than thirty kilometres in the hour; it must carry two numbers, one in front and the other behind the carriage. A delay of two months is given to the proprietors of cars to have their certificates completed in accordance with the new regulations. With regard

to racing, it is decreed that no racing shall take place in any Department without the consent of the Prefect, the chief of the road engineers, and all the Communes which are passed through. No race shall take place over a course consisting of more than one Department without the consent of the Minister of the Interior, in addition to the consent of all the Departmental authorities. As before, a speed in excess of 30 kilometres may be maintained in the open country, but in no case will more than 20 kilometres be allowed in the "agglomerations." Readers of the *Journal* will notice that these new regulations do not preclude racing, so that we may see road racing coming to the fore again in France. If it does, however, it will be under proper official regulation, which we may be sure will be strictly carried out by the police, and military if necessary.

ON the whole, the new regulations appear to be sensible. It is manifestly absurd that high-powered machines, capable of doing high speeds, should not, as has been suggested by some very ignorant persons, be allowed at all, for the very good reason that, although on such a machine one is not obliged to exceed the legal limit on a flat road, on the other hand, the high power is required in order to be able to maintain the legal limit uphill. If numbering has to be, it is much fairer that a distinction should be made between machines capable of doing high speeds and those incapable. In the recent police court proceedings that have taken place in England, such a distinction would certainly have prevented many cases where a gross injustice has been done to some unfortunate automobilist on a slow car, who has been made to pay for the faults of his more speedy companions.

M. SANTOS-DUMONT has repaired his No. 6 and is quite ready for his run for the Deutsch prize, which he may have gained before these lines are published. There has been an unfortunate dispute between himself and the Committee of the Aero Club, which culminated in a letter addressed by him to that body. Fortunately, everything has been smoothed over, and the Committee has decided that the time occupied in rounding the Eiffel Tower shall be calculated from the moment the guide rope is released at the Aero Club until, after the return journey, the guide rope shall be seized again in the same position. It will not be necessary for the flying machine to come to earth within the time. Everybody will applaud the wisdom of the decision.

M. ROSE has decided to relinquish his attempt for the Deutsch prize for this season. The shareholders of his company have decided to find the money necessary to reconstruct the cigar-shaped envelopes which contain hydrogen, and to remedy some other faults rendered evident by the trials that have been made. The fans which should raise the machine from the ground only turn at 200, instead of 300 revolutions per minute, and the equilibrium of the whole machine has been rendered unstable by the removal of weight from the lower passenger carrying cage. M. Rose is going to pass the winter in making the necessary changes, and hopes by next spring time to be ready for more successful trials.

A CORRESPONDENT in last Saturday's *Journal* calls me to task for my paragraph referring to the Lisieux accident, and tells the story as from the Count de Villeroi. As a matter of fact, in my "Continental Notes" last week I included a paragraph announcing the fact that the author of the accident had been traced, and had voluntarily given 50,000 francs to the widow of the unfortunate employee of the Octroi. This paragraph was, I learn, omitted for want of space. If my account of the accident was erroneous—of which I am not yet convinced—my error was shared by the whole of the French Press, both technical and otherwise. Certain it is that the name of the author of the accident was quite unknown in France for more than a week after it occurred, and, as this does not tally with the account given by "An Occasional Motorist in France," I prefer to suspend my judgment until the facts have been elicited before the Court of Justice, which has the matter in hand.

CORRESPONDENCE.

NOISY EXHAUST.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Perhaps some of your readers could advise me if it is possible to lessen the noise of the exhaust in a 6½ h.p. Aster engine fitted to a Gladiator voiturette. I have tried filling the silencer, which is about 20 in. long by 5 in diameter, with iron shavings, but with, I think, very little effect. This noisiness seems to be the only defect in this make of engine, as otherwise I have had no trouble whatever.—Yours faithfully,

A. WILSON.

ELECTRIC IGNITION MATTERS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Absence from town has prevented my seeing, hitherto, the letter printed in your issue of August 31st, signed "Rooinek." Whilst thanking your correspondent for drawing my attention to what he assumes to be an error in my book, I would point out that he has evidently misunderstood my meaning. When I said that the route of the wires "is along the frame," I did not intend to imply that the current passes through the frame, but merely that the wires are conveyed alongside or inside the tubes of the frame. But since the wires are insulated wires, the primary current is not earthed at all.—Yours faithfully,

A. J. WILSON.

A LONG RUN ON AN M.M.C. CAR.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Having just completed a run from London to Leeds and back, 400 miles, in 24 hours 20 minutes, on a Motor Manufacturing Company's car, I thought you might like a few particulars. Leaving London with a strong head wind blowing in our teeth, we did the up journey in 14 hours, having absolutely no trouble with the engine; it behaved splendidly, never once missing fire or lagging, and took all the hills in grand style. Until we reached Hitchin the roads were very busy, what with the ordinary traffic and the extra traffic for Barnet fair; after that, very clear with a good surface. On reaching Retford we called on Mr. Clark, cycle and motor engineer, for petrol, which was found to be very good and fresh; he evidently gets through a large quantity. He showed us a car that he has just made, and which runs very well. We also saw two of Captain Laycock's cars, which seemed to be running beautifully. Until reaching Doncaster the roads were all that could be desired; after there very loose and bumpy. Reaching Pontefract we found that the main street was up, which added another mile to our journey, as we had to make a long circuit.

The Leeds streets are in a very bad state, which, I think, explains the absence of cars there. There is one thing that attracts strangers, that is horse cars, steam cars, and electric cars on the same lines, but I understand that they will do away with the horse and steam cars as soon as possible. Before leaving Leeds we called on Mr. S. Leuchters, Aire Street, for lubricating oil. He reports steady progress and sales fairly good.

On the down journey, which took 10 hours 20 minutes, we called at Clarke's, close to the racecourse at Doncaster, and found that they stock all requisites for motorists. They also have a good show of cars; one, a 5½ h.p. M.M.C. char-à-banc, to hold nine, built in 1898, is still doing good work. From Retford we had a splendid run through Newark to Grantham over that dreaded Great Gonerby Hill, of which our car made light work, negotiating it in five minutes, and beating some cyclists who rode the whole way up by 11½ minutes. After having something to eat here we started for Hitchin, and then on to town, over the vile pavement of Holloway and Islington. Our journey was finished without a hitch of any kind and no punctures, which speaks well for the condition of the roads generally.—Yours truly,

H. E. WILKINSON.

THE SPRAG DIFFICULTY.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—In your issue of June 29th last, a correspondent mentions a simple device used on the 3 h.p. Gladiator car to prevent the vehicle running back should anything fail when ascending a hill. Would he kindly state where the device can be obtained, and whether it is suitable for any other car?—Yours truly,

M. O.

NOMENCLATURE.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—When in Glasgow the other week I spoke to many who were engaged in the trials about the word *garage* and other French terms. With scarcely an exception they expressed their detestation of the word. "Car-house" expresses the idea admirably, being English and not in use for any other vehicle. It is generally acceptable, as I have ascertained.—Yours truly,

J. H. A. MACDONALD.

THE LISIEUX ACCIDENT.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—The letter from "An Occasional Motorist in France" is utterly out of place. The laws of the country are perfectly well known, and it is the duty of everybody to stop at the "Octrois." There is no excuse for the Villeroi family in any way; they should have stopped their motor at once when signalled to do so by the "Octroi" men. The fact of their not doing so at once places them in the wrong. The man, Lucas, killed in such a shocking manner, was doing his duty, and no money, as your correspondent seems to think, will replace the husband and father. "An Occasional Motorist in France" must himself be a reckless and heartless driver to call the dead man "a stupid fellow." The immediate punishment of such drivers at the hands of an infuriated mob will have the full sympathy of every fair-minded man, and I hold that all motorists should obey the law, and, in defying it, they only reap the reward they deserve.

I sincerely hope that the rich Villeroi family will be made to pay the full penalty for breaking the law, and be made to understand that they cannot drive rough shod over inoffensive persons and the custodians of the law. What is stated in your correspondent's P.S. as Count Villeroi facts is open to question.—Yours truly,

A. LITTLE.

AERIAL NAVIGATION.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—"Automan's" remarks of last week, on the subject of my previous letter, call for a response, which I shall give but briefly. My letter pointedly defined the necessary conditions of a practicable aerial vessel to be comparable with that of the birds "which are roughly 600 times heavier than air." From this, it may be seen at once where "the division between levity and gravity is made," and it is a very wide division. As "Automan" asserts that "the heavier the machine is, in comparison to the air, the greater will be the horse-power required to lift it," he must excuse my telling him that he is wrong in his premises, inasmuch as the weight or gravity of the machine is a source of power in itself, and indeed in soaring and sailing birds is the main source of power, as I have also remarked previously, and could easily demonstrate. Touching the penny balloon and pigeon simile, which "Automan" ascribes to the levity advocates, —has hitherto been quoted by the aviationists, or gravity advocates, in illustration of whose arguments (in condemnation of balloons)—it is quite apposite.

Having earned the right to speak authoritatively on this subject, I assert emphatically, and will maintain that there are no "delusions" in the theory of the aviationists to be "exploded" either by M. Santos-Dumont or anyone else. "Automan" cannot have informed himself of the practical results achieved by the aviationists, or he would never have ventured on an assertion so easily controverted, as when

he remarks, "they have failed absolutely," and have but "a barren field." Let "Automan" ascertain what has been done in steam flight by Professor Langley and Lawrence Hargrave—to say nothing of Hiram T. Maxim—and in soaring flight by Lilienthal, Chanute, Pilcher, Herring, and Le Bris. It is to be regretted that "Automan" should so write without having duly posted himself on the subject, as it is such random assertions that injure the legitimate cause, and mislead the uninitiated general public.—Yours faithfully,

SIDNEY H. HOLLANDS.

THE GLASGOW RELIABILITY TRIALS.

To THE EDITOR OF *The Motor-Car Journal*.

SIR,—I was very pleased to notice a letter written by Mr. Carlisle in your last issue in regard to the Automobile Club's Trials in Glasgow, and the withdrawal of the Whistlefield Hill climb from the competitions. It seems to me a great sign of weakness that a trial on a hill on an ordinary main road in Scotland should have to be withdrawn, and I think some explanation is due to the public for this withdrawal. It is not much use having trials if a hill can be found which the ordinary car sold to the public will not climb.

I have always been under the impression that the Automobile Club was an independent body, but it seems in this case as if they withdrew the hill from the competition so that the weakness of some cars should not be shown up.—Yours faithfully,

A. NOBLE.

To THE EDITOR OF *The Motor-Car Journal*.

SIR,—I read with much surprise in your last issue that a correspondent suggests that some portion of the Automobile Club Trials was abandoned. No doubt many others are in the same position as myself, waiting for the result of these trials before deciding on a motor-car for next year; and it seems to me that some explanation should be given to the charge brought against the Automobile Club in your last issue.—Yours truly,

DENHAM JONES.

THE AUTOMOBILE MUTUAL PROTECTION ASSOCIATION.

To THE EDITOR OF *The Motor-Car Journal*.

SIR,—The Executive Committee of my Association wish to give prominence by means of your valuable paper to the attempt which is being made by the Cycle Manufacturers' Association to upset the very wise decision which was arrived at after two meetings called publicly by the Automobile Club, and which the trade were invited to attend. At these meetings the trade decided unanimously that there should be only one motor-car show annually, and that this should be held for the next two years at the Agricultural Hall, in the spring of the year.

In the *Cyclist* of September 18th there appears a proposal of the Cycle Manufacturers' Association for the amalgamation of the cycle and motor trades with a view to stultifying the effect of the decision above referred to. The so-called favourable opinions of the "trade" cited include those of tailors and others, who are not in any way entitled to speak either for motor manufacturers or agents, and there is practically a total absence of favourable opinions in the list published from motor manufacturers and agents.

The Automobile Mutual Protection Association, Limited, which has been in existence for some considerable time, and which includes amongst its members a large majority of the well-known firms of motor manufacturers and agents and several prominent users of motor-vehicles, has taken in hand the protection of its members in matters relating to patent rights, royalties, etc., and has already been of great service to the movement in freeing it from vexatious litigation. The Executive Committee of the Association strongly urge the trade to keep quite clear from any amalgamation with the cycle industry which can only be advantageous to the latter, at the expense of the former.—Yours faithfully,

GEO. R. HELMORE, Secretary.

THE ROOTS AND VENABLES CAR.

To THE EDITOR OF *The Motor-Car Journal*.

SIR,—Not seeing any reply as to a difficulty in starting a Roots and Venable motor, I venture to suggest that the collar mentioned is the cause. If overheating of the tube was what made it fire too soon I should have tried a different tube, or less pressure on the lamp. I have used a Vosper launch engine (Roots' patent, I believe) for four years in a small auxiliary yawl, and never give more than three turns of the fly-wheel to start it after the tube is bright and the pipes hot. Should the engine not start once in a way the tube is left to heat longer, and three quick turns afterwards given. I not infrequently run five to twelve hours continuously. I carry two spare "Aetna" lamps, nipple key, spare burners and nipples. The pumps have never given trouble; all parts are interchangeable in the three lamps, and spare parts can be procured ready made for a few pence. After long use the burners should be cleaned by someone who has the apparatus for heating them and blowing out the carbon. Of what metal is the tube which fired too soon? I have not found any which got too hot, but probably the marine cylinder is kept cooler.—Yours truly,

PETER OLIV.

WITH regard to the paragraph in our last issue taken from the *Express*, anent a race between a Panhard and Renault car from Paris to London, in which the suggestion was made that the race had practically to be abandoned because the cost of the duty to bring the Panhard back into France would amount to £600, Mr. S. F. Edge writes, stating that there is not the slightest truth in the statement that it requires £600 to take a Panhard into France. To start with, it is only necessary with a French made vehicle to have it sealed at the Customs, and it can then always go backwards and forwards as often as the customer likes without any payment whatsoever. Even supposing this formula is not complied with, it is only necessary to pay not more than £30 duty on taking it into France.

As the result of a police raid, about thirty motorists were summoned at the Reigate County Bench on Saturday last for furious riding, and in most cases fines were imposed.

THE Hon. C. S. Rolls was to make a long distance balloon ascent on Thursday, accompanied by Mr. Frank Butler, Miss Vera Butler, and Mr. Percival Spencer, but at the last moment the trip was postponed.

THE Wolverhampton Art and Industrial Exhibition appears likely to be a great success, as many leading firms are making applications for space for a large display. Special arrangements are also being made for the amusement of visitors.

MESSRS. WEBSTER AND BENNETT, of the Atlas Works, Coventry, are issuing a very complete and well-illustrated catalogue of the machinery and tools turned out at their works. Amongst these motor-driven machine tools figure prominently. A list of some of the recent users of the firm's tools contains so many well-known names that it should carry conviction.

MR. F. L. ANDERSON, of 1, Furnival Street, E.C., informs us that, in anticipation of any difficulties in obtaining the necessary gearing, he is now prepared to quote for an efficient and easily fitted front wheel drive for Dr. Winter's speed indicator. A delivery of the instruments is due within the next fourteen days, so that the greater part of the unexecuted orders will be promptly dealt with.

DURING the course of the week, Mr. Weigel, of the British Automobile Commercial Syndicate, Ltd., has been to Newhaven, to bring two 24 h.p. Panhard cars to London; one of which has been sold to Mr. Garland, an American gentleman, and the other to Mr. Eric Chaplin, the nephew of the Duke of Sutherland. The company also inform us that during the week they have, in addition, received the following Panhard cars:—Four 5 h.p., three 7 h.p., one 12 h.p. and one 8 h.p.

FLOTSAM AND JETSAM.

—BY "FLANEUR."

"PUT not your trust in horses" may well have been the cry of the beautiful Duchess of Sutherland, who has been thrown and trampled upon by an equine quadruped just after she had quitted a motor-car, which had carried her from Laird to Tongue. The Duchess is very fond of exploring the wilds of Sutherlandshire and Caithness, and before the Duke acquired his motor-car her Grace used to take long rides alone on a very high-framed bicycle, for she is a magnificently proportioned woman of over six feet in height. Her nerve and daring are superb. In the course of my wanderings I once found myself at the extreme northern fringe of Scotland, and was shown over Dunrobin Castle by reason of a special order which the Duchess was kind enough to send me herself. While rambling along the coast I came across break-neck hills down which, I was assured by eye-witnesses, the Duchess was wont to "coast," although even the average male rider would elect to walk down gradients of such severity. It was apparently this same desire for exploration that has led, but by other means, to a lamentable disaster. Her Grace had been driven in a motor-car to Tongue, and was crossing to Loch Choire on horseback over a mountain road. The horse struck some marshy ground, became restive, and threw the Duchess, not content with which the animal trampled on her leg. Now a horse may do this sort of thing at any time; but what if the position had been reversed? Supposing that the Duchess had left the horse and mounted a motor-car, and some quite exceptional mishap had occurred. Is it difficult to imagine the head-shakings and "I told you so" ejaculations that would have been forthcoming from anti-automobilists on every side?

"HIP and thigh" did the Lord Justice Clerk smite Sir Howard Vincent in the *Times* controversy on "Motor-cars and horses." The member for Sheffield has rarely shown to less advantage than in his letter, in which he clamoured for a £5 tax on all automobiles, and bewailed his own position when driving a wagonette full of ladies with a horse which would not pass a car. He ended by invoking the aid of Mr. Walter Long, "who is a horse-owner and a sportsman, and horse-owners look to him." The Lord Justice Clerk's reply was simply crushing. He backed with his weighty authority and extended experience the statement that not one horse in 200 took any notice of motor-cars. "If Sir Howard," he added, "had a horse that could not be trained to bear railway traffic he would sell that horse or take his chance. He must do the same with a horse that could not be trained to motor-cars." As for the £5 tax, no tax, he urged, would make it safe for a man to drive a wagonette full of ladies with such a horse in it. The appeal to Mr. Long he answered by scouting Sir Howard's implied suggestion that the President of the Local Government Board would act with partiality because he kept horses. "If horse-owners look to him to do injustice because they keep restive horses I am certain that they will look in vain"—which is as neat a phrasing as could possibly have been desired. Finally the Rt. Hon. Sir J. H. A. Macdonald grassed his adversary most beautifully with this parting shot:—"Sir Howard's proposal to load one mode of locomotion with excessive taxation because there are some offenders is much the same thing as if someone were to ask the Chancellor of the Exchequer to put a heavy impost upon Sheffield cutlery because there were a few cases of stabbing in the newspapers." And what would Sheffield say?

It was by a somewhat curious coincidence that at the very time an illustration was being published in this journal of the new motor-car service at Cortina (*vide* page 521 of last week's issue), I myself happened to be at that very spot. And a lovely spot it is, right in the centre of the wondrous Dolomite region. I have never seen, in the whole of Switzerland or Austria, a place that has grown to the size of Cortina, with numerous shops and hotels, and yet retained so much of its picturesqueness and primitive simplicity. The new motor-car service has caused a

terrible flutter in the dove-cotes, but there is little fear of the innovation not meeting with the success that it deserves. The road over which the cars travel is magnificently graded, and has a surface that would make most English surveyors green with envy. There is fine scope, by the way, for automobile touring in the Tyrol. The roads are in many cases super-excellent, and the scenery superb, while there is nothing in the way of gradients that a good car could not surmount with ease. Mountainous districts abroad, it must be borne in mind, do not present the difficulties that "hilly" routes so frequently do at home. England is full of places where no science has been brought to bear upon road construction, and, instead of skilful windings, the primitive straight line is again and again employed, and gradients of one in eight are the result. Now on the Alpine routes, where roads have been mathematically planned, one never sees aught steeper than one in twelve, and often the ascent is no worse than one in twenty. Moreover, there are no sudden corners; all are scientifically made, and although they may double back like the curve of a horse-shoe, you can see exactly what you have to negotiate three hundred yards away, and can adapt your speed accordingly.

LET anyone who wants a grand trip, amid glorious surroundings, drive from Innsbruck over the Brenner Pass to Franzenfeste, thence to Toblach, and over the fine Ampezzo Road, through Cortina to Belluno. From Belluno there is a grand road to Feltre and Trient, and more of splendid going over the Tonale Pass to Edolo, and thence over the South Aprica Pass, with a surface like a billiard-table, to Tirano. Here the famed Stelvio Pass can be ascended, and the journey continued northwards through Trafoi—one of the most beautiful places in the world—to Mals and Landeck. This round not only embraces some of the finest scenery in the Alps, but is all outside the boundary of Switzerland, and not "taboo" to automobilists. Motor-cars, I may add, though suffered to "circulate" in Swiss towns, and along ordinary road routes, are rigorously excluded from the Passes, and I venture to predict that it will be a long time ere the embargo is removed. If the horse is sacrosanct in England, it is doubly so in the Alps. But I will also predict, with equal confidence, that the day will come when the Government mails will be carried over the Passes by self-propelled vehicles, and the lumbering diligence, with its five-horsed teams, will be relegated to limbo.

A GOOD many people, by the way, have been driving motor-cars of late up Alpine Passes, and each in turn is claiming to have ascended higher than anybody else. As a matter of fact the record in this line was broken several months ago, and once broken it must stand good for all time. You cannot make a new Pass every day, and no one can eclipse the performance of the man who first ascended the highest road of all, for the simple reason that there is no higher route to follow. All you can do is to beat his time, if recorded. Now, the highest carriage road in Europe, or, indeed, in the world, is the Stelvio Pass, which is half in Austria and half in Italy, though closely adjoining Swiss territory. It rises to a height of 9,055 feet, is magnificently engineered, and has a perfect surface throughout. The first person known to have driven over it on a motor-car was an Austrian noble, Count Stephan Gyulai, who crossed it on a 12 h.p. Cannstatt Daimler. [A description of this journey, with several photographic illustrations, appears in the current issue.—Ed. *M.C.J.*] Consequently, the various gentlemen who have been climbing up to heights of six, seven, or eight thousand feet, as the case may be, on other Passes may have done meritorious performances, but made the highest ascent they certainly have not—a fact which I may commend to the attention of the *New York Herald* (Paris edition), a paragraph in which, while I was abroad, greatly amused me by the claims it set forth on behalf of some *chauffeurs* who had driven up the Great St. Bernard.

MR. HOLDEN, of Eastwell Park, informs us that Albert Holmes, who was fined last week for furious driving, is his coachman, and not his engineer, as stated in our last issue.

THE GENERAL AUTOMOBILE AGENCY, D. Farman, Man., Garage open day and night, all cars in stock, 100-104, Long Acre, W.C.

THE "CHARETTE" PETROL CAR.

AS mentioned in a recent issue, the International Motor-Car Company, Limited, of High Street, Marylebone, have lately considerably improved the "Charette," which they introduced about a year ago. We are now able to give illustrations and a brief description of the vehicle in its

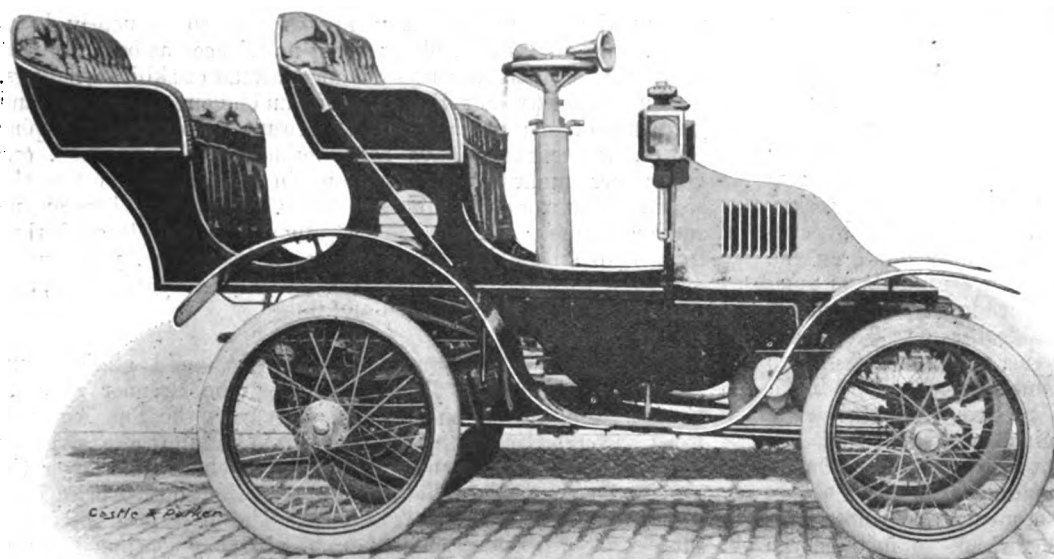


FIG. 1.—GENERAL VIEW OF THE "CHARETTE" PHAETON.

latest form. Hitherto two sizes have been made, one fitted with a $3\frac{1}{2}$ h.p. engine, and the other with one developing 6 h.p. From Mr. Seyd we learn that the company have decided to confine their attention to the latter class.

The motor is of the vertical single cylinder type on the De Dion system. It is located in the fore part of the frame under a bonnet which can be readily detached. The motor itself contains a number of commendable features, the chief among which being that in addition to the cylinder, both valves, which are on top of the motor, are entirely water-jacketed. The engine does not run at a high speed, a rate of 800 to 1,000 revolutions being sufficient to develop its full power. The water circulation is maintained by a pump driven by a band off the engine shaft, and a radiator is fitted in front of the vehicle. The engine is started with the usual handle, which is fitted at the side of the car. The exhaust is carried to the back of the car, and is very quiet. The ignition is, of course, electrical, and it is of a simple kind, which enables the makers to claim that it will rarely give trouble. Coming now to the transmission gear, three speeds and a reverse motion are available, and any speed from two to thirty miles can be attained on good roads, the entire regulation of which is actuated by levers on the steering column. The power is transmitted from the pulleys on the motor shaft by one of two wide belts to a countershaft in the rear, which is geared to the live axle by

means of toothed wheels, which run in an oil bath. In the standard car a powerful band brake on the rear axle, operated by pedal, is fitted; a hand brake actuating band brakes connected with the hubs of the rear wheels can be fitted at a slight extra cost if desired. The axles, framework, and steering connections are very strongly made, the connection between the steering standard and the rod being by rack and pinion. The road wheels are of the cycle type shod with pneumatic tires of a special kind, with which the makers give a guarantee, a point which will be appreciated by those who have experience of the incessant repairing of pneumatics. The body can be removed in a few minutes, thus giving access to the whole of the transmission and gearing beneath the floor, whilst the back seat can be detached separately and the space used for luggage if desired. The standard form of a "Charette" is a spider with accommodation for three or four persons; the under-carriage carrying the motor and the whole of the transmission gear, any type of body can be fitted, and the International Company inform us that they can undertake to meet customers' wishes in this

respect by fitting a phaeton, tonneau, or even a small omnibus body at a cost of not more than ten guineas over the price of the standard car. They are also open to supply complete under-

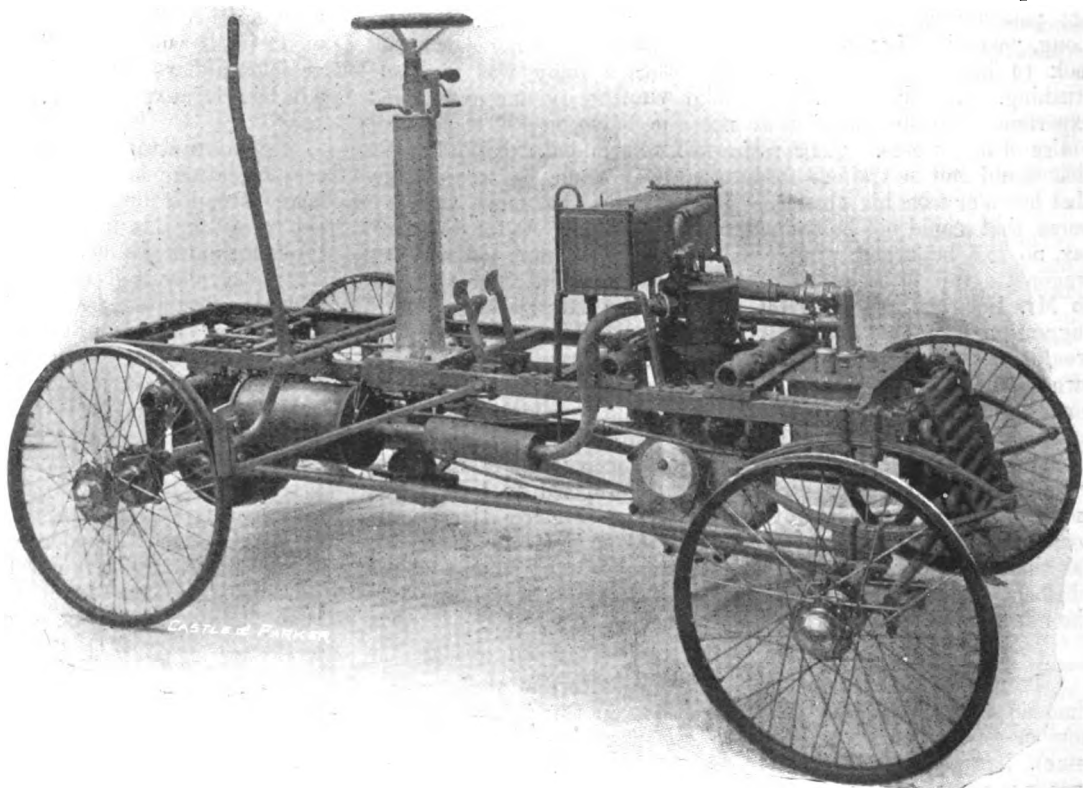


FIG. 2.—FRAME OF "CHARETTE" CAR.

carriages to coach builders, to which the latter may fix bodies of their own construction. An interesting feature of these cars is that every one is run by road from Coventry to London (ninety-seven miles) with a non-stop run before it is passed and handed over

to the carriage-building department. Mr. Seyd also informs us that his company now offer to send a "Charette" to any part of England or Wales free of charge for any intending purchaser to test at his door over his own roads. This is one of the boldest offers we have yet heard of in the motor industry, and shows that the International Company have great faith in their vehicle.

On another page we give an illustration showing the interior of the International Motor Works at Coventry. They cover nearly an acre of ground, all under one roof, and here every branch of the motor industry is carried on. Wherever possible automatic machinery is employed, thus making as many parts as possible on the interchangeable system.

HERE AND THERE.

THE Roads and Bridges Committee of the Glamorgan County Council have withheld a grant to the Merthyr District Council on account of the bad state in which the roads in charge of that local body are maintained.

MOTOR-CARS will be used in the Imperial German manoeuvres in the Dantzic district. Ten have already arrived. They are of various patterns, from the lightest passenger carriage to the heaviest freight wagon. One of the vehicles is intended for the use of the Kaiser.

A YOUNG Birmingham engineer, named Parsons, aged 24, shot himself dead recently with a six-chambered revolver. The reason assigned by his father was that the young fellow had been lately devoting all his spare cash, time, and energy to constructing a motor-car, and he had been greatly distressed because he could not make the machine go properly.

A DASHBOARD voltmeter is one of the latest useful novelties to be put on the market by the United Motor Industries, Limited. The voltmeter is mounted on a small board and can be screwed to any suitable part of the dashboard of a motor-car. It is arranged to be permanently connected up to the accumulators, so that by means of a push switch on the board the motorist can at any time instantly ascertain the voltage of his batteries. The voltmeter registers up to five volts in tenths.

ACCUMULATOR INDUSTRIES, LIMITED, has been registered with a capital of £40,000, and the directors are inviting application for 2,000 7 per cent. cumulative preference shares of £5 each. The object of the company, which has established works at Woking, is to manufacture and supply "Leitner" accumulators for light railways, tramways, omnibuses, launches, motor-cars, etc. The present subscription list is open till Friday, the 27th inst., and the registered office of the company is at Maybury, Woking, Surrey.

At a meeting of the Team Labour Committee of the Southampton Town Council last week the Town Clerk read a letter that he had addressed to the firms competing at the recent Liverpool motor-wagon trials, and the replies received in answer thereto. It was resolved that the Town Clerk be directed to write to the local authorities using motor-vehicles inquiring as to their suitability for municipal work, and whether they had found the vehicles a means of saving time and labour, and also a success financially.

AT Blackpool, recently, H. F. Lowe was charged with stealing a bicycle from the lobby of the Station Hotel, the property of Mr. J. H. Robinson. On Thursday, August 22, Mr. Robinson left the machine in the lobby, and soon afterwards the prisoner was seen to take it away. Prisoner, who said he was publishing the *Automobile Journal*, pleaded guilty, and Mr. Callis said it was nothing more than a drunken freak. Prisoner's wife, who spoke with a strong American accent, said the first issue of the journal was published in London, and the second issue would shortly be published in Preston. The Mayor said they had given the prisoner every chance of calling witnesses, but he had not done so, and the least they could do was to send him to prison for 14 days.

A NEW company will shortly be registered, with a capital of £100,000, to exploit electric and petrol (German) motor-vehicles.

FIVE motorists have to appear at Spittlegate Petty Sessions, Lincolnshire, to-day (Saturday) to answer summonses for furious driving, ourselves amongst the number.

MESSRS. JAMES RICKARDS AND Co., of the Motor Works, Brentford, Middlesex, are turning out in large quantities a small petrol motor for use on motor-bicycles.

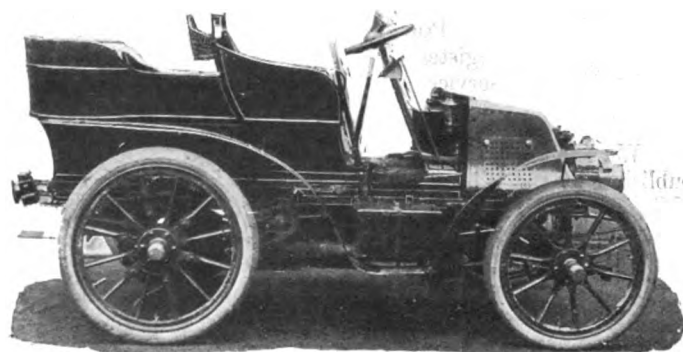
MISS BALFOUR is rapidly becoming an expert automobilist, as she is driving her brother's (the Rt. Hon. A. J. Balfour) De Dion voiturette herself in the neighbourhood of Prestonkirk, where they are staying in Scotland.

THE General Automobile Company, Limited, has been registered with a capital of £100, to acquire the goodwill, assets, and contracts obtained by W. C. Bersey on behalf of the company, and to carry on the business of dealers in motor-vehicles, etc.

THE motor-car has again made its appearance on the stage, and will shortly be seen running nightly across the boards of Drury Lane, in the sensational spectacular drama, "The Great Millionaire," now in course of preparation.

MR. F. SADLER has recently devised and patented a motor road cleaner, which, it is claimed, is capable of doing the work of ten men; also of clearing away snow. It is worked by electricity, and the cost is estimated at 1½d. per unit.

THE accompanying illustration shows the 9 h.p. Napier car, 1902 model, which ran in the Glasgow trials. The car is fitted with a single lever for the control of all speeds, backward and



forward, and also a new type of governor, doing away with a very large number of moving parts, and reducing the governor to a plunger, which cuts the mixture outlet on or off.

CANNOT some Bristol motorist take the Lord Mayor of the town for a trip and convert him. In the course of his welcome to the members of the Institute of British Carriage Builders on Tuesday, he remarked that he viewed with alarm the popularity of motor-cars, and said he hoped it would be his good fortune to have passed away before motor-cars became generally used.

THERE can be no doubt that the fashionable mode of exercise—call it recreation, or sport, or craze, or what you will—is automobilism. Already it has added several new words to the English language, and has given rise to a new and flourishing branch of English industry. To what lengths its beneficent influence will extend it would be difficult to say, but its universal adoption, especially by those who live in the outer radius of town, is only a matter of time and price.—*The Court Circular*.

THE General Electric Company (1900) Ltd., of Queen Victoria Street, E.C., in issuing their sixth edition of this year's illustrated catalogue, have not overlooked the requirements of motorists. Several pages are devoted to the many accessories of an electrical order without which no car is complete. Besides the usual sparking plugs, coils, dry cells, batteries and accumulators, there are many other interesting little novelties such as the "Search Light" lamp, which can be lighted from the ignition battery and is useful for inspecting gear, etc., after dark.

THE GENERAL AUTOMOBILE AGENCY, D. Farman, Man., Garage open day and night, all cars in stock, 100-104, Long Acre, W.C.

WE hear that a motor-car tour through France will shortly be undertaken by Lady Maud Warrender, who will be accompanied by Miss Marie Hay.

AN appreciative notice of the career of Mr. John Stirling, managing director of Stirling's Motor-Carriages, Limited, appears in a recent issue of the *Glasgow Bailie*.

BEFORE the engineering section of the British Association, Mr. C. B. Garrard, of Birmingham, read an interesting paper on "Some Recent Developments in Chain-Driving," a large part of which was devoted to the Renold silent chain.

THE Motor Haulage Company, Limited, has been registered with a capital of £15,000, to carry on the business of engineers, makers of motors, motor lorries and cycles. The registered office is at Donington House, Norfolk Street, W.C.

THE Wellington Rural District Council has decided to support the Long Ashton Rural District Council's resolution in favour of restricting the pace of motor-cars and licensing and numbering the same.

No response has been received by the Reading Automobile Club to the suggestion with regard to lady-associates. Evidently lady motorists are motorists "in their own right," and do not care for the nominal association with the other sex.

MOTORISTS should be particularly careful when driving in Buckinghamshire. Some of the roads about High Wycombe are very narrow, and have several curves in comparatively short lengths.

THAT the recent automobile jaunt into Scotland has done good is attested by the *Glasgow Evening News*, which says: "Those dusty, set-faced beings (the motorists), masked and begoggled, are the advance agents of a time beyond ours."

PORTSMOUTH AND GOSPORT MOTORS, LIMITED, has been registered, with a capital of £5,000, to establish and maintain services of motor-omnibuses, cars, and to carry on the business of electrical and general engineers, etc.

WE have received a copy of the *Auto-Era*, a new monthly published by the Winton Motor-Carriage Company of Cleveland, U.S.A. While naturally the Winton car claims chief attention, there are a number of interesting items in the new journal.

AS will be remembered, the petrol consumption trial of the Reading Automobile Club was unavoidably postponed. The Committee have now decided to hold it on the 22nd inst. The event is open to all automobilists, whether members of the Club or not.

GEARINGS, LIMITED, has been registered, with a capital of £3,000, to adopt an agreement with F. W. Dunlop, and to carry on the business of engineers and manufacturers of cycles, motors, etc. The first directors are P. Stanley, T. L. Drimmie, and F. W. Dunlop.

FOLKESTONE seems inclined to welcome the vehicles of the Folkestone Motor Company, and local residents are remarking upon the large number of private motor-vehicles that are running in the district—some of them owned by people living in Folkestone or Hythe.

THE Electric Ignition Company of Highgate Square, Birmingham, inform us that they are now prepared to supply a new single-pole sparking plug with flange to suit the Benz engine, also a flange screwed to take the De Dion type plug, and so suit the Benz.

ALLEGATIONS against the Worcestershire police in waiting behind hedgerows to summon cyclists riding on the footpath at a place where the road was "up" are to be investigated by the Standing Joint Committee of the county. Similar way-laying with regard to motorists elsewhere should also be considered by local authorities.

MR. P. DRUMMOND, of Stirling, met with rather a serious accident while riding his motor-cycle last week. Near Carret Farm the machine overturned and Mr. Drummond was thrown to the ground, sustaining injuries to his head, whilst one of his shoulder blades was also hurt. He was picked up in an insen-

sible condition, and removed home. We are glad to say he is now recovering satisfactorily.

IT is only a few weeks ago that Mr. McKinley, the deceased President of the United States, took his first ride in an automobile at his home in Canton, Ohio. He rode out with Mr. Z. Davis, one of his neighbours, who drives a Winton car. At the conclusion of the ride, the President expressed himself as highly pleased with the vehicle and the skilful manner in which Mr. Davis handled it.

A MOTOR-CAR built by the Searchmont Motor Company, of Philadelphia, Pa., was recently delivered to a purchaser in Baltimore, having travelled the 180 miles over the Blue Ridge mountains under its own power. This route has, it is stated, never been successfully covered before by an automobile. A very pleasant feature of the trip was the ice chest, which was built on the car, and furnished ice water and other cool drinkables along the route.

FROM Messrs. Burberry's, of Haymarket, London, we have received a sample of "Gabardine," a material particularly adapted to the requirements of motorists. Its thick woolly back offers warmth without weight, whilst the closely woven surface is impervious to dust, wind or rain. It is an excellent material for suits, but its most important use is for the "Slip-on" coat and overalls which fit easily over an ordinary overcoat or other garments.

GREAT complaints are made respecting the speed of motor-cars in many parts of Cheshire, and some of the local authorities are now taking up the matter. The Bucklow Rural Council has received complaints, and has decided to call the attention of the County Council to the great and increasing danger, and to ask that body to compel all motor-car drivers to carry numbers or exhibit other means of identification. The police are also taking more determined action.

UNDER the chairmanship of Colonel G. Montagu Hicks, a smoking concert was held on Monday last at the club house of the Automobile and Sports Club, Croydon. Secretary R. J. Cholmeley, B.A., had sought most of the musical talent at the Savoy Theatre, and the result was worth the enterprise. The programme was pleasantly broken by a champagne supper, given by the Club. We found the premises very comfortable and well suited for the purpose of the Club, and we understand that an extensive garage for the motoring members will shortly be added.

"THE DARRACQ AND ITS MANAGEMENT" is the title of a little handbook which has been written by Mr. Archibald Ford, of the Motor-Car Depot of Liverpool, to enable purchasers to get the best they can out of their cars of this type. The book is concisely written, but, notwithstanding this, it contains a large amount of most useful information. A number of drawings are given, so that the construction of the machine can be easily followed, although we might add that the value of these would have been increased had the reference lettering been in English instead of French. The work concludes with a series of very plain instructions to enable the novice, who finds his car is not going so well as usual, to locate the cause of the sluggishness.

A NEW differential locking nut has lately been introduced by Mr. C. W. Wall, of 19, Pinfold Road, Streatham, S.W. The nut is internally screw-threaded to fit the bolt in the usual manner, but is also provided with an extension or sleeve, which is externally screw-threaded with a thread of different pitch, from the internal thread. Upon the sleeve is screwed a collar. The arrangement constitutes a differential screw nut, as when the collar is brought up against the body to be held by the bolt, by continuing to screw the nut a differential action takes place whereby the nut is securely locked. Owing to the power obtained by the differential threads, the use of a spanner or other tool can, it is claimed, in many cases be dispensed with, as the nut can be locked sufficiently firmly by hand. In such cases the nut can be made with wings, milled edges, or any devices which will give a firm grip. In using the nut, the collar has to be slightly unscrewed in order to leave sufficient play for the action of the differential threads.

GLASGOW RELIABILITY TRIALS.

We have received a number of communications on the subject of the Glasgow trials from various firms in the trade, a summary of which is given below.

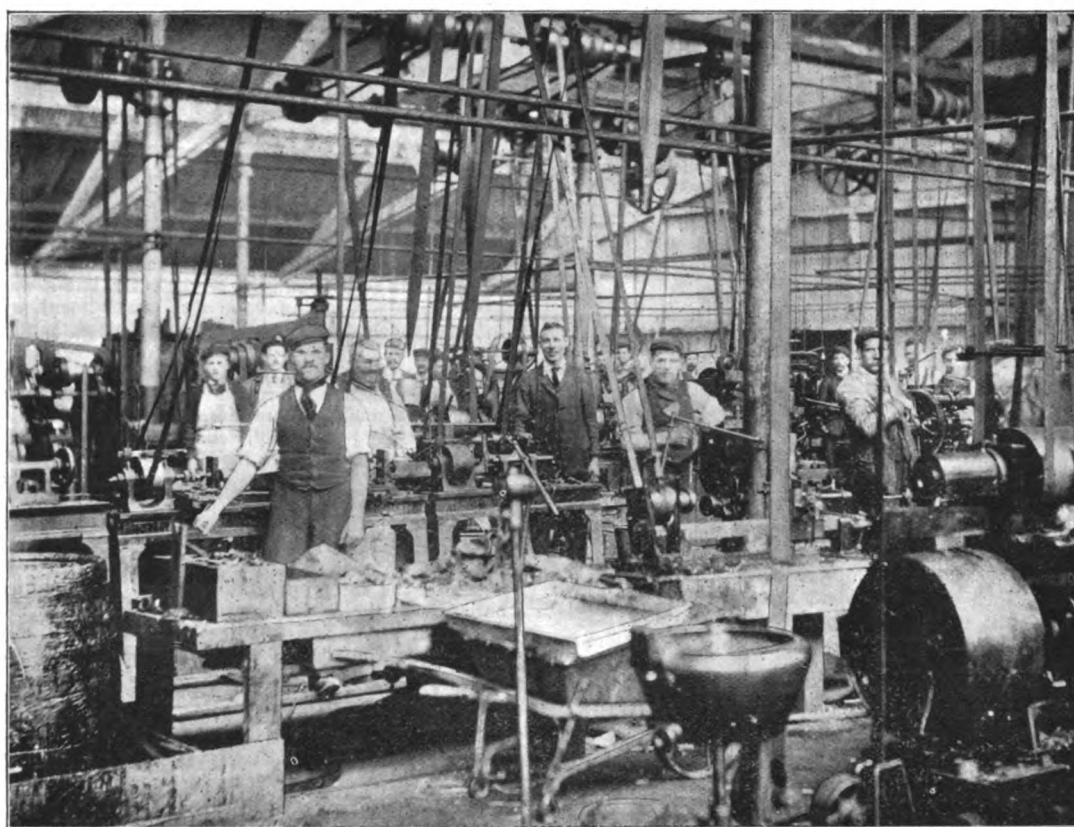
The Wolseley Tool and Motor-car Company, Limited, ask us to state that their 10 h.p. car (No. 10) carried four passengers during the recent trials, and not two as mentioned in the tabular statement of results issued by the Automobile Club.

The Locomobile Company of America write:—We shall be glad if you will kindly publish the fact that, as our marks in the Glasgow Trials may appear low on the list, it is not owing to the fact that we had any stoppages for repairs, etc., but simply that the rules demanded that one mark be deducted for every minute stopped, no matter what the reason. Therefore, we may mention that our car succeeded in doing the test of 500 miles without any stop for repairs or adjustment to engine, etc., the only stops being for fuel and water.

The success of the M.M.C. van in the trials is likely to result in bringing motor vehicles more into commercial use. The Motor Manufacturing Company, Limited, have already a good many vans running about, Messrs. Gardiners, the great clothiers, being among the latest recruits.

stand that we feel annoyed about this, as in comparing the marks given to cars for hill-climbing the public would infer that the "Argyll" was only a fourth rate car, whereas in climbing Whistlefield with four passengers it easily led every petrol car in the competition for hill-climbing.

Mr. S. F. EDGE writes:—Referring to the recent Reliability Trials, my company entered and ran a 9 h.p. Napier, which, as you are aware, received the maximum possible number of marks each day for reliability, never having once stopped except under instructions from the observers. We have, however, one very serious complaint to make against the management of these trials, and that is the withdrawal of the steepest hill climb from the competitions. Our great claim is that our standard motor-carriages will go up every hill to be met with on ordinary roads, and we sent a carriage to the trials which would do this. To suddenly withdraw the steepest hill from the competition, without advising the manufacturers interested, seems to us to require some explanation; otherwise, it is likely to be inferred that the withdrawal of this climb from the competition was promoted by too kind a regard for some vehicles which were not capable of climbing it, and, judging by the appearance of the results, it does seem that a large number of the vehicles entered for the competition were not suitable—at any rate, for running in Scotland—as they failed to climb Whistlefield Hill without their passengers dismounting, and actually



VIEW IN THE INTERNATIONAL MOTOR WORKS.

The 4½ h.p. De Dion-Bouton voiturette did exceedingly well in the trials, as in the five days' run, for which a total of 1,500 marks were awarded; it only lost two marks, which represents two minutes' stoppage. In the hill-climbing competitions it did equally well. Seeing that the car was an ordinary one taken from stock, its performance is very creditable.

The Hozier Engineering Company, Limited, write:—We would take this opportunity of pointing out that when the rules of the Committee were received, these were carefully studied by us, and we could not see any clause wherein it was stated that any advantage whatever would be gained through having a speedy car. We therefore took pains to have our car so geared that it would climb the most difficult hill in all the routes, namely, Whistlefield. You can readily understand it was a great disappointment to us when this competition was withdrawn at the last minute without any satisfactory reason being given. We maintain that all the cars in the competition which failed to climb Whistlefield with their full complement of passengers failed to comply with the very spirit of the whole competition, and demonstrated that there was an error in the gearing of the cars for the work which they were intended to do. All competitors were in possession of the full knowledge that Whistlefield was to be one of the hill climbs, and the contour book gives the grade of the hill. You will readily under-

pushing the cars up. It seems to us a little unfair that we should not have some advantage from sending a car to the trials which was able to go successfully through every trial set forth in the original itinerary.

MR. GEORGE ACE, of Tenby, is just now on his holidays, and intends riding a motor-cycle, made by himself, over the Land's End-John o' Groat's route. He proposes to make a fast journey, but is not ambitious enough to go for a record.

THE Southampton Town Council have had one of their public service motor-cars in use for a short time. The vehicle has, however, been taken off the road until the second and third cars are delivered. The service will probably be restarted next week.

MR. J. T. SCARBOROUGH, of Birmingham, showed us something novel and apparently good in the way of a carburettor specially adapted for motor-bicycles the other day. It consists of a simple device controlling the supply of petrol by means of the inlet valve.

"LOYALTY TO THE TRADE."

SOME few days ago a contemporary issued a circular to the motor trade, calling attention to the fact that the Cycle Manufacturers' Trade Protection Association had decided to invite the motor trade to amalgamate with them, and asked them to write in reply and express their opinions on the subject. These opinions appeared in the *Cyclist* Trade Supplement on the 18th inst., together with a copy of the following letter addressed by the Association to the members of the motor trade:—

13th September, 1901.

Dear Sir,—A meeting of the motor trade has been arranged for five p.m. on Wednesday next, the 18th inst., in the Arbitration Room of the Inns of Court Hotel, Holborn, London, when I trust that you will attend and express your views upon the course you deem it best to take in its interests. The committee of the Automobile Club have also been invited.

My part in the matter is this: On the 20th August I was unanimously elected president of the Cycle Manufacturers' Association, and the forward policy which I have always advocated was endorsed.

For the purpose of carrying out the latter I have during the last few days seen a number of motor-car manufacturers and their representatives, who are not also cycle manufacturers, and found them disposed to join our association if its scope was widened by admitting them to its benefits, and giving them adequate representation on its committee. To this I have every confidence the members of my association will agree at their next meeting on the 25th inst., and that the title of the association will be altered to, say, "Cycle and Motor Trades' Association."

A deputation from my association, which met the committee of the Automobile Club lately, were informed by the latter that the "boycotting" resolution, apparently specially directed against the February show at the Crystal Palace, but which also applied to the "National Cycle and Motor Show," was voted upon by members of the trade only, and therefore the trade alone must rescind or alter that resolution if they wish to do so.

I note that Sir Edward Jenkinson, who was chairman of the meeting which passed the boycotting resolution, represents the Daimler Company, which did such good business at our last show that, with other motor companies, it contracted with us for the same or a larger space at our next show. Also, that no member of our association—a number of whom are also motor manufacturers and members of the Automobile Club—was present at that meeting.

Our show is held by the trade for the trade, and its funds are used entirely in the latter's interests. Many very important matters, some affecting patent rights, royalties, etc., have been amicably and satisfactorily settled by my association without publicity or expense, and during the last eighteen months alone an important action (of which I enclose report) brought against one of its members, but affecting the whole cycle trade, has been successfully defended in the Law Courts and the Court of Appeal at an expenditure of nearly £1,000 of the association's funds, while two very similar actions brought against other parties resulted in both of them being condemned in heavy damages and costs.

Our show, like the French show, is held at the right time of year, when motor makers, as well as cycle makers, desire orders to keep their works going during the winter, and prepare for delivery in the spring and summer. At our last show we were assured by the motor makers exhibiting there that the business done was good, and members of our association, who are also motor-carriage makers, inform us that they received from seven to eleven times as many orders for motor-carriages at our show as at that held in May last at the Agricultural Hall, and all these members, with others, will exhibit at our next show.

My association fully recognises the good and costly work done by the Automobile Club, which has so much benefited the motor-carriage industry, and we are most desirous of acting in harmony with and supporting the Club.

Should the motor trade decide to join our association and exhibit with us at the Crystal Palace from November 22nd to 30th next, my association will subscribe £100 to the Automobile Club.

Also, I have every reason to believe that if this amalgamation takes place, the February show will not be held, and it will be for the trade to decide what show or shows shall be held after May next, and whether the above, or a larger amount, shall be handed yearly by us to the Automobile Club to assist in paying part of the expenses it incurs in organising motor-car trials, etc., which so largely benefit the motor trade.—Yours truly,

FRANK BOWDEN,

President Cycle Manufacturers' Association.

Mr. Frank Bowden, President of the Cycle Manufacturers' Trade Association (who, by the way, is no relation to Mr. Bowden of the Bowden brake) took the chair at the meeting on Wednesday, and was supported by several members of the Committee of the Cycle Association. Amongst those interested in the motor trade present were Mr. Lisle, of the Star Company, Mr. S. F. Edge, Mr. J. J. Mann, of Marshall and Co., Mr. C. Friswell, Mr. J. S. Critchley, director of the Daimler Company, Mr. F. F. Wellington, Mr. Astell, of the New Orleans Co., Mr. Cappellan, of the Sports Motor-car Company, Mr. G. H. Smith, of the United Motor Industries, and Mr. Shippey. The chairman, in his opening remarks, gave a short history of the Cycle Manufacturers' Trade Association, telling how his Association had successfully fought law suits for the trade, and how in numerous cases where litigation threatened they had made arrangements for compromise and licences where they considered the patents good and new.

In this category the Chairman alluded to the patents of the Dunlop Tire Company and the Bowden brake amongst others. The Chairman, in addressing a warm invitation to the motor trade to amalgamate with the Association, stated that the Association was financially strong, having some thousands of pounds to their credit, and offered the motor trade an equal representation on the Board and the Committee. The advantages offered by this amalgamation would include the standardisation of parts, the adoption of the metric system and the holding of the show at the Crystal Palace, which in the opinion of the Chairman is most suited to its purpose. Alluding to the Agricultural Hall, the Chairman said it was suitable for cattle but not for ladies who wished to visit the motor-car show, whilst on the other hand the Crystal Palace was a pleasant place to visit. Mr. J. J. Mann, of Marshall and Company, remarked that the motor trade was already pledged to show only at the Agricultural Hall for the next two years, and that they had already a Protection Association, so that the overtures of the Cycle Manufacturers' Association, came too late. Mr. Mann also doubted whether it was to the interest either of the motor trade or the cycle trade for their Associations to amalgamate, owing to the great dissimilarity in almost every respect of the two trades. Mr. Charles Friswell expressed his opinion against the amalgamation, and did not see what advantages the Cycle Manufacturers' Association had to offer to the motor trade. Mr. Shippey spoke at some length in the same strain. Mr. S. F. Edge advocated joining the Association and holding a show in the profits of which the whole trade would participate instead of taking part in a proprietary one.

The proposal for which the meeting had been convened was made by the Chairman, and after some considerable delay in search of a seconder was seconded by Mr. John Marston. After a somewhat hot discussion Mr. Mann, representing Marshall and Co., proposed the following amendment: "That the Cycle Association continue as it is to represent the cycle industries, and that the Automobile Mutual Protection Association represent the motor industry, and that both associations combine their efforts to promote such interests as are common to the two." Mr. J. S. Critchley, representing the Daimler Company, seconded the amendment, and expressed himself entirely in accordance with Mr. Mann's views. Upon the amendment being put some difference of opinion took place with regard to the counting of the votes, but it was understood that six hands were held up in favour of the amendment, whilst the Chairman had to ask two or three times for the reluctant hands to go up against the amendment. Finally five gentlemen voted against it, four of whom were members of the Committee of the Cycle Manufacturers' Association.

The Chairman expressed his disappointment and implied that the motor trade was not as united, regarding the one show, as some of the members there present believed. He stated that Sir Edward Jenkinson, who had led the one show meeting at the Automobile Club, had himself, as Chairman of the Daimler Company, booked space at another show as far back as April 13th. Mr. Critchley, a director of the Daimler Company, denied the statement. Mr. Peach corroborated the Chairman's statement. Mr. Critchley replied that there was evidently some misunderstanding. A change of directors had taken place about that time, and it was not the intention of the present board to exhibit at any but the one show at the Agricultural Hall. The chairman retorted that such a resolution would lead to litigation and was highly detrimental to the interests of the shareholders. The discussion became personal, and the meeting gradually broke up.

RESISTANCE OF ROAD VEHICLES TO TRACTION.

At the meeting of the Mechanical Science Section of the British Association on Friday last week, Professor Hele-Shaw, F.R.S., read the report of the Committee on resistance of road vehicles to traction. He stated that at the first meeting of the Committee it was decided that an experimental car and dynamometer were necessary for performing the experiments on road traction, that members of the Committee should be invited to state their views in writing concerning the mode in which the experiments should be carried out, and that ultimately, with a view of obtaining results on different types of roads, trials should be conducted at three centres where facilities could be obtained, namely, Aldershot, Cupar-Fife, and Liverpool. At the same meeting, Mr. J. Brown, Belfast, offered to alter the Viagraph, which was a self-recording instrument of his own invention, in order to make it specially suitable for carrying out the experiments, and to place it at the disposal of the Committee. At a subsequent meeting it was decided that, in order to undertake in a thorough and complete way experimental researches, it would be necessary to raise a sum of about £1,000. The Committee felt that in view of the great development of mechanical traction upon roads, the scope of the report should not merely be limited to experiments on tractive resistance, but should deal with the effects of vehicles upon road surfaces of various kinds, and should involve experiments not only with different kinds of tires, but with varying loads and speeds, and with different types of vehicles. An investigation would be gone into concerning the relative effect upon the roads of various forms of mechanical traction and the best types of road for this purpose. They might therefore look with confidence to substantial pecuniary support from makers and users of traction engines and manufacturers of motor-vehicles, and from various county councils and local boards.

Meanwhile, an offer having been received from Sir David Salomons to lend to the Committee, and alter as they pleased for an indefinite period, a motor-car, it was determined to accept the offer and proceed at once with a series of preliminary experiments, which would pave the way for future and more complete investigations. During the past few months work had been steadily proceeding upon the motor-car, the cost of the new engines for which was being defrayed by Sir David Salomons. Although great delays had been experienced with the engines, it was hoped that very shortly a preliminary series of experiments might be commenced. These it was proposed to make, in the first place, with single wheels with different kinds of tires, the track for this purpose being artificial, consisting of different kinds of materials laid in a trough or trench about 18 inches or 2 feet in width, so that the dynamo-meter itself could be tested when the car was running upon a piece of level surface. In this way the autographic records obtained for materials, such as sand, wet and dry, loose stones, artificial projections of cross-pieces of wood of different sizes and differently pitched, could be thoroughly understood, so as to enable the actual road trials to be made without unnecessary delays. The new Viagraph of Mr. Brown had been received, and was awaiting these trials. It had been altered by the important addition of a device for attaching different curved surfaces, representing segments of wheels of different diameters. The rise and fall was autographically recorded, and from experiments made it was clear that the actual contour of the road or surface being experimented upon could be clearly indicated at the same time that the actual resistance was being recorded by the dynamo-meter. The report was unanimously adopted.

FURIOUS DRIVING CASES.

At the Settle Police Court, Thomas Eastham, of Clitheroe, was summoned for driving a motor-car at a speed greater than twelve miles an hour. From the evidence of the prosecution, it appeared that two police officers were stationed near Hellifield, at a distance of a mile apart, on the day in question, for the purpose of timing motor-cars, and that the defendant's machine covered the distance in three minutes, or at the rate of twenty miles an hour. The magistrates inflicted a penalty of £5 and costs.

At Rugby Police Court, Lindley Scott, of Foxborough Hall, Woodbridge, Suffolk, was fined £5 and 10s. 6d. costs for furiously driving a motor-car on the London Road at Stretton-on-Dunsmere. The police evidence was to the effect that defendant was driving at thirty miles an hour.

At Colchester Police Court, George Oliver, was summoned for driving a motor-car at a greater speed than twelve miles an hour on the Harwich Road. The defendant, who pleaded not guilty, was seen by Police-constables Friend and Kerridge driving a motor-car belonging to Messrs. Hyam and Co., along the Harwich Road about 5.30 p.m. on the 3rd inst., at the alleged rate of eighteen miles an hour. In consequence of complaints received, the constables had measured 220 yards, and the defendant covered it in twenty-five seconds. When told to stop, the defendant pulled up in twenty-eight yards. The defendant said just before he saw the constables his car had broken down, and he had to repair it. The car weighed a ton and a half, and was loaded with a ton of goods at the time in question. It was impossible for it to go more than twelve miles an hour. The Bench fined the defendant £1 and 15s. costs, in default of distress, fourteen days.

At Chelmsford, Herbert Frederick Guinness, of Rutland Gate, London, S.W., was summoned for driving his motor-car, between Ingatestone and Chelmsford, at an excessive speed on August 31st. It was proved that the defendant covered the distance at the rate of twenty miles an hour. The usual fine of £5 was imposed, and the costs came to £1 2s. 6d.

HENRY RICHARDSON, of High Road, North Finchley, for driving a motor-car on the highway at Hilgay on the 19th ult. at a greater speed than twelve miles an hour, was fined £5, and costs £2 13s. 1d.

At Chelmsford, on Friday, Herbert Smith, of Piccadilly, London, pleaded guilty to driving a motor-car at an excessive speed. P.C. Flack saw the car going through Springfield, and telephoned from the Police Headquarters to the Shire Hall. P.S. Coppen received the message, and almost immediately saw defendant drive up to the Saracen's Head Hotel. Defendant had travelled 1,540 yards in just two minutes, or at the rate of twenty-six and a-quarter miles per hour. P.S. Coppen said that as it was Sunday dinner-time there were only a few people about. Fined £5 and costs 17s. 2d.

At Kingston-on-Thames County Police-court, Sir Charles Lawes, of The Studio, Chelsea Gardens, was summoned for driving a motor-car at a speed greater than twelve miles an hour on the Portsmouth Road, Esher. Police-constable Pike deposed that on August 29th he saw the defendant passing near Sandown Park Racecourse driving his car at quite eighteen to twenty miles an hour. The defendant said he understood the police-constable was looking for a car similar to his. He had sent his car to the makers to be repaired, and he supposed that because they had tested it on the roads the car had got a bad name. On the present occasion he was riding in the car himself, but he was not in the habit of driving at an excessive speed. A penalty of £3 and costs was imposed.

At the Settle Petty Sessions, John C. Green, cycle agent, Cross Hills, was fined £3 and costs for driving a motor-car at an excessive speed on the highway between Hellifield and Long Preston. Two policemen were stationed on the road near Hellifield, a mile apart, and they declared that defendant traversed the mile in 2½ minutes.

At Godstone, John Wells, of Grosvenor-road, London, was summoned for driving a motor-car at an excessive rate at Godstone on the 25th August. Sergeant Southcott said he was on duty at the bottom of the Godstone Hill on the day named, when he saw defendant travelling at the rate of twenty-four miles an hour. He went 176 yards in fifteen seconds. A fine of £3 and costs, amounting to 10s. 6d., was imposed.

At Oxted Police Court, Morgan Donne, of Clerkenwell, was charged with driving a motor-car at a greater speed than twelve miles per hour. Inspector Pullen said that about 4.30 p.m. on the 18th August he was on duty in plain clothes near the Warringham station on the Godstone-road, when he saw the defendant driving a motor-car at an excessive speed. The witness timed him over a distance of 176 yards, which he covered in 22 seconds, which worked out at the rate of about sixteen miles per hour. The defendant said that when he went down the road he saw the inspector run out from the side of the pathway. He (defendant) had since investigated the spot, and it was impossible to see up the road from a position in which he first saw the inspector. As he had his wife and children with him it would be impossible for him to have been riding at the speed stated, and he wished to point out to the Bench that an error the inspector might have made over a short distance like that would multiply the speed considerably. After a short deliberation with his colleagues the chairman said the defendant was liable to a penalty of £10, and he would be fined £3, and 10s. costs.

At Oxted Police Court, Lionel Savory, of Broadhurst Gardens, West Hampstead, was charged with driving a motor-car at a greater speed than twelve miles an hour. Sergeant Southcott said that on Sunday, the 18th August, he was on duty near the Wapses' Lodge, where he saw the defendant driving his motor-car at a great speed. He went over a distance of 176 yards in fifteen seconds, or at a rate of twenty miles an hour. The defendant called as a witness a young gentleman who was on the car with him at the time. The witness said they left Godstone on the day named at 5.25, and it was five minutes to six when they were stopped by the police. The defendant was fined £3, and 10s. 6d. costs.

At Oxted Police Court, Percy Seal, of Enfield Wash, Enfield, was summoned for driving a motor-car at a greater speed than twelve miles an hour on August 18th. Mr. Seal did not attend the court. P.Sergt. Southcott said defendant was travelling at the rate of twenty miles an hour. The defendant was fined £4 and costs, the Chairman remarking that the distinction was made between him and others answering similar summonses that day, because Mr. Seal had not put in an appearance at the Court. In his opinion the highways were for the use of all and the danger of none, and when a person was summoned and did not appear there must be a distinction made between him and those who did.

At Swansea, David G. Thomas and Alfred E. Gash were summoned for driving a motor-tandem furiously on August 24th. Mr. Dormer Andrews defended. The chief witness was Mr. R. T. Leyson, solicitor, who said that the defendants drove the machine down the hill towards Swansea at a very rapid pace, and the car twisted and ran into the hedge, striking a girl and precipitating the occupants out. The car was going at thirteen to fifteen miles an hour. The defendants, in excuse, stated that it was the fault of the car that they came to grief, and they were only going six to eight miles an hour. They called other evidence, and the Bench thought that a fine of 10s. and costs on the driver would meet the case.

At Doncaster, Mestrad Amedee, a French machinist, in the service of Captain Laycock, Doncaster, was charged with furiously driving a light locomotive, on the 15th August last. Four witnesses who saw him pass through Doncaster gave the speed he was driving at from thirteen to twenty miles an hour. The chief constable, one of the witnesses, fixed the speed at fifteen miles. The defence was that the car had been so geared that it could not travel at more than seven or at most eight miles an hour. The Bench held the case proved, and fined the defendant £5 and costs.

On Saturday, September 14th, William J. Peall was summoned at Reigate for driving a motor-car near Red Hill at a greater speed than twelve miles per hour. The police sergeant deposed that on Saturday, August 17th, he timed defendant as having driven his car 176 yards in 18 sec., which worked out at twenty miles per hour. Under cross-examination he admitted that a mistake had been made in the measurements, and the distance was only 158 yards, which reduced the pace, and he also stated that to time the car he was standing behind a hedge some 25 yards from the end of the 158 yards, and took the start when the car was passing the brow of the hill some 200 yards away, and the finish opposite a gate. He admitted the gate was fully 10 feet wide, and was very uncertain as to what part of the gate he timed the car to, also his watch was not a stop watch. When asked if he had anyone to corroborate his evidence, another constable was called who stated that what first witness had said was correct, but on being cross-examined admitted that he was hiding in a field some yards further on, and could not see the car coming at all. The first witness was then recalled, and asked by Mr. Peall if he did not say to him at the time that the car was going slowly

when it passed him, which he admitted; and stated that the car was slowed up before reaching the end of the distance, and he had taken off the few yards and worked the pace out from that. Mr. Peall, who then elected to give evidence on oath, stated that he would not swear on oath that the pace was eleven, eleven and three-quarters, or thirteen miles per hour, but stated that he was driving very quietly, and had no idea he was breaking the law. He maintained that the sergeant could not check the times with an ordinary watch, and also that he was very indefinite as to where the measurement ended. As for the second constable's evidence, he might have been 100 miles away for all he knew. The defendant stated he had witnesses to prove his defence, but without giving him time to call them, the Bench imposed a fine of £2 and costs.

At Walsall Police Court, Charles Mason was summoned for furiously driving a motor-cycle on August 30th. Mr. H. H. Jackson defended. Police-constable Jones said that at 7.45 p.m. on Friday, August 30th, he saw the defendant drive a motor across the Bridge at a rate of about fifteen miles an hour. Mr. Jackson pointed out that the defendant's motor had been geared down recently so that its speed could not exceed twelve miles an hour, and on the day in question it was not driven at any time at more than six miles an hour. The case was dismissed.

THE AUTOMOBILE MANUFACTURING COMPANY.

IN the Vacation Court, last week, before Mr. Justice Joyce, Mr. Peck moved ex parte on behalf of the plaintiffs, in the case of the Automobile Manufacturing Company v. Jordan and Rogers, for an injunction in the terms of the writ restraining the defendant Rogers from advertising the acquisition by him of the business and premises of the plaintiff company, and his intention to carry on the business. The learned counsel read the affidavit of a director of the plaintiff company, which, it appeared, was incorporated in April, 1900. Subsequently a mortgage was effected for £500 with the defendant, Albert Arthur Jordan, to be a charge on the undertaking, and it was agreed that during the continuance of the security Jordan was to receive all moneys payable to the company, and that he should be at liberty to carry on the business subject to the keeping of proper and sufficient accounts, and if there was any balance in hand on August 20th, 1901, it was to be applied in part payment of the mortgage debt. In spite of that, the defendant Jordan had sold the business and premises.

His Lordship: Sold to whom? Mr. Peck: To the other defendant. His Lordship: Where is the money you undertook to pay him? Mr. Peck: We are prepared to pay it into court—£502 principal and interest up to last Monday. His Lordship: Very well; on your undertaking in damages and paying £502 2s. into court to plaintiffs' suspense account I will give you an ex parte injunction to Wednesday the 18th inst. in terms of the writ. Subsequently his Lordship also granted an injunction to restrain the defendant Jordan from selling or disposing of any of the stock in-trade of the company at 48 and 49, Long Acre, which was not included in the mortgage. Subsequently Mr. Peck said he had been wrongly informed that the defendant Jordan had sold all the effects of the company, and he asked that the injunction might be extended against Jordan for selling or disposing of the stock in-trade and effects of the plaintiffs at 48 and 49, Long Acre. His Lordship granted the application.

The motion came on for further hearing on Wednesday.

Mr. Bramwell Davis, K.C., for the plaintiff company, said he had only just received an affidavit by one of the defendants, and he had no opportunity of reading it. As the case was a curious one he thought it should stand over. Mr. Ford said he appeared for one of the defendants, and did not object.

His Lordship said he thought that the affidavit should be answered, as otherwise, as he understood it, it looked as if Mr. Jordan, who was an employee, had a right to sell. Mr. Bramwell Davis said that the stock was valued at £3,000, and one of these gentlemen had bought it for £150. As a matter of fact, he might want to cross-examine Mr. Rogers. The difficulty was this, that the business was being carried on by a nominee of Mr. Rogers. His Lordship said he did not understand by what authority Mr. Jordan had sold the business. Mr. Bramwell Davis said it was sold under a charge the terms of which were that the money should be paid within a month. There was a provision that the terms of the Conveyancing Act should not apply. His Lordship: Is the tender disputed? Mr. Ford: The tender is disputed. My client actually assigned the property before the action, and therefore the motion seeking to restrain me is out of order, and I claim the right to what has been done. His Lordship thought the motion could not go on that day, and he extended the injunction for a week, at the end of which time the case should be before the court.

NO LIGHT.

At the Bromley Petty Sessions, Robert Bell was summoned for neglecting to carry a proper light upon a motor-car driven by him on the night of August 30th, at South Eden Bark, Beckenham. Defendant pleaded guilty. Police-sergeant 21 P stated that when stopped defendant said he did not know the lamp had gone out, and that it was alight when he left the West Wickham Hotel. There was a small bicycle lamp on the car, but not a proper light. A fine of 20s. and 9s. costs was inflicted.

NEW GRAPPLER COMPANY V. MOTOR MANUFACTURING COMPANY.

IN the Vacation Court, Mr. E. A. Collins applied on behalf of the plaintiff company for an order to issue and serve a writ out of the jurisdiction. Counsel moved on the application of Mr. H. W. Mullen, in which it was stated that the plaintiffs were desirous of commencing an action against the defendants, whose registered offices are at 47, Holborn Viaduct, London. The plaintiffs claimed £253 for damages alleged to have been sustained by plaintiff by reason of certain breaches of contract. Mr. Justice Barton granted the order.

EMITTING STEAM.

At Caterham, Charles Padden, of Lower Edmonton, was summoned for blowing off steam from a motor-car at Caterham on the 25th August. The defendant pleaded guilty. P.C. Stevens said he saw the defendant driving his motor car through the Valley at 11 a.m. on the 24th August, and noticing steam issuing from the rear of the car he called upon the defendant to stop. Witness told him he was allowing steam to escape instead of turning it into the condenser and he said he had no condenser attached but that he would have one fixed. The Chairman (to the constable): You use the word steam; do you mean to imply by that that it is a motor driven by steam or by petroleum? Witness: I do not know. The defendant was fined £2 and costs.

At Dorking, Henry Adere was summoned for having blown off steam from his motor-car in High Street, Dorking, on August 29th. P.C. Dodman proved the case, and said when he stopped defendant he informed him he had burst a pipe and wanted to know where he could get it repaired. Witness showed him, but defendant made no attempt to stop, but let off steam through the High Street. Fined £1.

It is rumoured that a prominent motor firm on the Holborn-viaduct is about to vacate its premises.

A MOVEMENT is on foot in Brussels to organise an automobile race from that city to Paris next spring.

MR. WILLIAM BULMER, of Windsor, Ontario, has just completed a steam car, said to be the first of the kind built in Canada.

WITH reference to the paragraph in our last issue regarding boats fitted with De Dion motors, Messrs. Friswell, Limited, write us stating that they have been fitting De Dion motors to boats since the early part of this year, and that they are on view at 48, Holborn-viaduct, or at Mr. Cleaver's depôt, Eel Pie Island. They have them ready for immediate delivery, or to order for delivery early in the spring.

THE *Motor World* of New York is the authority for the statement that in a test which was made in Chicago recently, a record run was made by an electric vehicle without recharging the batteries. The distance covered from 5.43 p.m., Monday, when the run started, until the carriage stopped, was 187½ miles. The carriage was a Baker, made by the Baker Motor Vehicle Company, of Cleveland, owned by Mr. F. C. Phillips, of the same city, and was driven by him throughout the long run. The carriage was equipped with a battery which is the invention of Mr. H. C. Porter, of Chicago. Mr. Phillips is confident of his ability to break his own record and expects to be able to set the mark at 200 miles in his next attempt.

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COMMENTS.



THE Manchester Automobile Club, although only some eighteen months old, has now close upon 100 members. During this season several most successful runs have been taken. On Saturday last Alderley Edge was visited. No procession of cars was arranged, the members starting at any hour they thought fit in view of the programme and the time they were expected to arrive. By the invitation of the Chairman of the Committee, Mr. W. E. Rowcliffe, the members and their friends were entertained to tea on arrival. The honorary secretary, Mr. J. Hoyle Smith, on a 12 h.p. Belsize car, carrying four passengers, was the first to climb the hill leading to the house, and was closely followed by the 6 h.p. Daimler car belonging to Mr. Baron. After these two cars had taken up their position on the circular drive in front of the house three De Dion voiturettes arrived, belonging respectively to Mr. W. E. Jones, Mr. F. Gresham, and Mr. Dyson. A little later Mr. Higginbottom's 34 h.p. motor-car arrived and created a sensation, being the largest car possessed by any member of the Club. It was out for the first time and is credited with a speed of sixty miles an hour. This, however, was not put to the test. The remaining cars were a 9 h.p. Napier, driven by Mr. Lewis, of Bowdon; an Empress voiturette, which brought Mr. and Mrs. Higginson; a Century tandem, driven by Mr. Whittaker; and a Sirene voiturette, belonging to Mr. Emery. The cars started by moonlight on their homeward journey, about eight o'clock. It is intended to hold the annual dinner of the Club on the 14th November.

The New Game.

FINING motorists is a profitable game for local authorities. It is played with the help of police, who can exaggerate greatly and imagine much, to say nothing of the prejudice and ignorance of country magistrates. With such a combination some of the county authorities should be able to obtain enough funds from prosecuted and persecuted motorists to maintain open spaces for small towns or to pay the expenses of horse keep for the mounted police. At first motorists joined in the game, and by appearing in the police-courts constituted a third party, but now the new magisterial pastime is being played with only two sides—the police who imagine vain things, and the local authority that pockets the amounts named by the magistrates.

The Grantham Cases.

THAT the foregoing statement is no travesty of the situation was apparent at Grantham on Saturday. Lincolnshire has an unenviable notoriety among motorists, and hence the absence of three defendants summoned for rapid motoring at the Grantham Court. The trio were summoned, but they could easily anticipate the result. So instead of wasting money in making a defence they awaited the decision of the wiseacres who are appointed to administer "justice." Later came notification that each had been fined £10, so that the county is

£30 to the good—thanks to the enthusiasm of the police, whose word is always accepted by magistrates (when motorists are concerned), and who manage to escape the charge of perjury in a wonderful and remarkable way unknown to ordinary mortals.

No Justice Obtainable.

OF course, this condition of affairs has a humorous aspect, and would have been welcome in the days of Gilbert and Sullivan comic opera. But such jokes are expensive, and, moreover, there is a serious aspect to the affair. Things have come to a pretty fine pass when English gentlemen decline to plead in English courts because they believe that their cases have been prejudged, and retaining solicitors is only adding to expense that cannot be avoided. Surely the Home Secretary should be watchful of the interests of the public and issue some admonition. To day it is the motorist who is regarded with such opposition; but it may be some other section of the public later; for prejudice, baulked in one direction, generally finds victims in another. Hence our hope that action may be taken by the Home Secretary in the interests of the community.

A Needful Alteration.

THE present position having become so unsatisfactory, is it not time that the authorities recognised the need for reviving that clause of one of the old Highway Acts which made it an offence to drive to the public danger? There are occasions when a speed of five or six miles an hour in a crowded place would constitute a menace to the lives of the people; there are other times when a speed of four times that pace could be safely attained. To have one hard-and-fast rule for all districts and all times is absurd; common sense should have free play, and prosecution only be instituted where motorists were vicious enough to endanger life. Such a case could easily be proved. At present the difference between eleven and thirteen miles an hour is sufficient to bring a motorist within the area of legal jurisdiction. But if the suggestion as to driving to the common danger were enforced, no ambiguity could ever obtain, and scorching motorists would not escape detection.

No Speed Limit.

THIS subject of raising the speed limit has been much discussed in the motor world, and the question as to the number of miles per hour allowed to be travelled has been the cause of long arguments. To our mind the matter is of easy solution. There should be no speed limit whatever; the old Highways Act, whereby a driver is liable to pains and penalties, being quite sufficient to prevent reckless driving. If, however, the speed limit was raised to twenty miles per hour, each of the three gentlemen summoned to appear at Grantham on Saturday last would still have been fined the maximum amount. In our case the policeman swore they timed us between two milestones, and found we travelled at the rate of thirty miles an hour. Our car is only geared to twenty-four miles, and being a new one does not travel as well as it will probably do later on. The speed we were travelling was under twenty miles an hour, and that speed we do not think we ever exceeded in our 1,800 miles tour to Scotland and back.

Tire and Other Troubles.

We had had trouble all the day on which we were said to be driving furiously. The petrol pipe broke twice, another pipe also burst, and we had innumerable punctures. Warning was also afforded us by a policeman on crossing the borders of Yorkshire into Lincolnshire by the gentleman officiously taking out a watch, looking at us, then at the watch, and afterwards putting it into his pocket. We proceeded unmolested into Newark, where we had to stop to take in petrol at a chemist's shop adjoining the police-station in the Market Square. Two policemen stood outside and watched with evident interest our methods of procedure. The distance between Newark and Grantham is less than eight miles, and at the latter place we had arranged to stay the night. We travelled about five miles without anything happening, when two cyclists, moving in our direction, waved their hands. This was in a long wide village, through which we, as is our wont, were travelling slowly. There were four of us on the car, and we all noticed the waving of the hands—but it was not a signal to stop, and when we looked round no further notice was taken. A carrier's cart was coming along, and we took the waving as a warning that there was something in front. We went on, and then a tire punctured. This was repaired—and then puncture again. A cyclist, a young Cambridge student, stayed and helped us, and finding, as it was dark, we could not repair the puncture, he kindly rode into Grantham, ordered a conveyance for the ladies, and a tire repairer to proceed to the disabled car. With the carriage the cyclist sent back a card, with the words, "Just outside Grantham two policemen stopped me and asked information of you. Sorry I was obliged to tell.—J. S. S."



TRUFFAULT'S 12 H.P. VOITURETTE.
The Winner of the Mile Contest (Voiturette Class) at Deauville.

Grantham and Afterwards.

IN the meantime a cyclist rode out and stated he was a sergeant of police, desired our names and addresses, and said we had been timed between three milestones, and had been found travelling at the rate of about twenty-four miles an hour. We put up at the Angel Inn, and at eight o'clock next morning a constable was found stationed outside the hotel; a sergeant called at 9.15; and after having ascertained from the landlord of the inn that we had given our correct names, desired us to accompany him to the police-station to see the superintendent. This we did, although for what purpose we are unaware. The superintendent then spoke fairly, but later on acted the reverse, as the result of the proceedings will show.

Punctures and Police.

AFTER our interview, having all through adopted an attitude of *suaviter in modo*, we proceeded on our way, but had not gone four miles before we began again suffering from punctures, but ultimately reached Colsterworth, where we were forced to halt, an outer cover having burst. Perhaps this was

fortunate, as we afterwards heard there was a policeman stationed at each end of the village, and a sergeant in the middle, on the look-out for us. We have taken legal advice, and the matter is now in the hands of our advisers, with a view to the facts in our case being laid before the Treasury.

Resistance of Road Vehicles to Traction.

AT a meeting of the General Committee of the British Association last week the Committee appointed to investigate the resistance of roads to motor traction asked leave to have the Association grant supplemented by outside subscriptions, as their inquiry would probably prove expensive. The President said the Association rules provided that no Committee should raise money in the name of, or under the auspices of, the British Association without permission, and that no money so raised should be expended except in accordance with the rules of the Association. It was therefore apparently contemplated that leave might be given to a Committee to raise money otherwise than through the Association, and he thought there was much to be said in favour of the present case. Sir Fredk. Bramwell said it was important to investigate the resistance of roads under various circumstances and conditions to traction, as well as with reference to the types employed and the weight carried. There was reason to expect a large increase in motor traffic of all kinds, both goods and passengers, upon roads. The proposed Committee would be presided over by Colonel Crompton, who was now engaged by the Government in devising proper machinery and arrangements for the development of that motive power for war purposes. He moved that the Committee on the resistance of road vehicles to traction be authorised to obtain outside subscriptions in aid of their work. This was unanimously agreed to.

Progress in Essex.

AT Braintree, on Sunday, reports one of our roving contributors, I saw evidence of the popularity of the Essex high roads among automobilists, for in a space of about an hour half a dozen motor-vehicles passed through the town. The people about that part have had practical evidence of the value of the automobile in heavy traction. Messrs. Courtauld have several crape and silk mills in the neighbourhood of Braintree, and are employing a steam motor-van to convey materials to and fro, and in a town a few miles distant a leading firm of flour millers have adopted a similar method of transport. In this country the commercial aspect of automobilism is being developed alongside the touring or pleasure side of the movement; and therein is ample assurance for the prosperous future of our industry.

A Note from Aberdeen.

AMONG provincial leader writers the gentleman who is connected with the *Aberdeen Press* displays the most rational attitude with regard to automobilism that we have noticed north of the Tweed. Recognising that the motor-car is coming into universal use, he writes, "Instead of crying out against the use of the motor-car as objectionable, attention should be directed to the checking of any abuse that may arise. But, as in the case of the bicycle, it may be expected that the more extensive the use of, and the greater the familiarity of the people with, the motor-car, the more effectively will be removed the objections and prejudices with which it is in the meantime regarded." This being so, why seek to thwart the initial stages of an industry which will loom large in British trade returns in the near future? All the talk about taxing, numbering, and restricting motor-cars is calculated only to dishearten manufacturers who are hopeful, if common sense prevails, of developing a new industry in an old country that seems to require such a filip—judging from the lugubrious utterances of some of our public men with regard to foreign competition.

Nottingham Automobile Club.

To judge from the excellent turn out of this Club on Thursday, the 19th inst., in response to an invitation from Mr. R. M. Millington Knowles to visit him at Colston Bassett Hall, automobilism should be in a good way in the lace county. Twenty motor-vehicles conveyed fifty members of the Club to the genial president's pleasant country seat. A start was made at 2.30 from Nottingham, and over excellent roads, favoured with ideal weather, the party soon arrived, without incident, at the hospitable Hall. There Mr. and Miss Knowles received their guests, and conducted them through the trim and admirably-kept grounds, after which an informal tea was served in the house. Mr. E. W. Wells (vice-president of the Club) proposed a vote of thanks to Mr. and Miss Knowles for their hospitality, and briefly spoke of the pride they felt in having Mr. Knowles for their president. The return journey was made in excellent time, and under the same favourable conditions as had marked the outward run.

Motor-Tutors.

MOTOR-TUTORS are coming into prominence, and our advertisement columns have already testified to their presence in the land. There are hundreds of people who will want to drive their own cars—even if they do not care to practise the delightful operation of cleaning them—and hence there should be a good demand for the services of reliable drivers willing to teach. The question of terms will, of course, have to be considered, and, so far as observation goes at present, the idea of charging by the hour is a very good one. For the capacity of owners to

if nothing else succeeds. Horse-owners who are agitating for the offensive numbering of motor-vehicles could not complain if motorists started a counter movement in this direction.

Motor-Cars v. Trams.

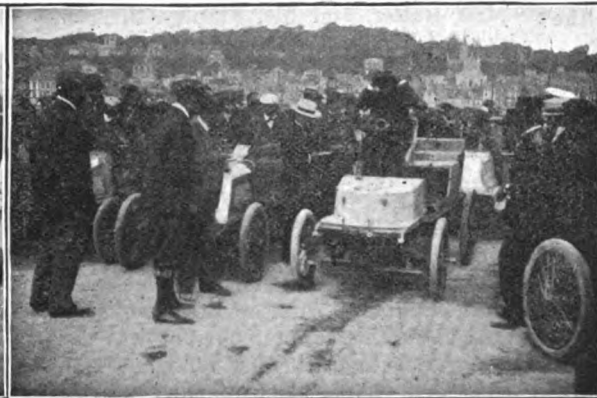
QUITE a flutter has been caused in the dovecotes of the electrical tramway engineers by Colonel Crompton's championship of electric motor-omnibuses at the British Association. All around London schemes for electric trams are being promoted, and in many suburbs tramlines are destroying the highways and leading thoroughfares. The adoption of motor-omnibuses would enable people to be more promptly conveyed from one point of the City to another and without the excessive cost of interfering with existing road surfaces. The statement of Colonel Crompton that 14,000 people can be carried past any given point in one hour by omnibus has been challenged by Mr. Clifton Robinson, but the figures must still be regarded as reliable, for they were supplied by the London General Omnibus Company, who had a record taken on the Piccadilly-Hammersmith route after a Lord Mayor's show. There is plenty of profit for the promoters of a really satisfactory line of motor-omnibuses in and around the Metropolis.

Fascinating Sport.

MR. T. R. DEWAR, M.P., attempts in the *Week End* to answer the question, "Which is the most fascinating sport?" and, after dilating upon the attractiveness of golf, shooting, angling, horse-racing, and road coaching, declares that "motor-driving is a most fascinating amusement and, withal, a most useful



Jenatzy's 100 h.p. Combination Petrol-Electrical Car.



M. Serpollet Starting for the Mile Record.

THE DEAUVILLE RACE MEETING.

[Cliches de]

[La France Automobile.]

learn to drive will be as various as the tempers of horses called upon to meet the automobile on their daily rounds.

Dealing with Horses.

It was bound to come! Recognising that the automobile is not to be frightened off the road in a hurry, and having regard to the folly of those who decline to have their horses educated to decent behaviour when in the presence of motor-cars, several inventors are said to be at work on devices to deal with horses when shying. In Russia a choke-rein has been in use for many years, and a neat apparatus which brings the horse to a standstill by a comparatively light pressure on the windpipe is now in use in New York. In France more complicated arrangements are coming into vogue to deal with fractious animals. One device which has been adopted is to fix an extra pair of blinkers on the ordinary blinkers. These are provided with a spring by means of which they can be brought completely over the eyes of the horse when he becomes restive. We regret that some owners should not be willing to use moral suasion with their animals; but the use of such devices will have to be rendered compulsory

method of overcoming the obstacles of space and distance, and to those who have not tried it I would say, in the words of Dr. Johnson, 'Then you have an immense pleasure to come.' Having thus indicated his preference, the worthy M.P. gives his opinion that the great majority of people derive more pleasure from bicycling than from any other national pastime. The bicycle is within the means of millions; with thousands of people, however, the motor-car is just as popular.

Penalty of Publicity.

So much public interest has been aroused by the announcement of a motor-car service between Piccadilly Circus and Putney that private cars passing over the chosen route are constantly hailed by would-be "two-pennyworths." Mr. Guy Lewin of the New York Tire Company, tells us that one day recently, whilst riding a friend's car in Piccadilly, he was violently dug in the ribs by an umbrella, at the other end of which was an old lady who demanded conveyance to Putney. On explaining that he was not licensed to ply for hire, and moving on, the old lady gesticulated violently with the

umbrella and exhibited those well-known signs of despair so frequently seen on the London pavement as the long-awaited 'bus rolls heedlessly by.

An Object-Lesson.

THE appalling wagonette accident reported from Yarmouth, in which the whole of the passengers thrown on the road by the overturning of one vehicle were run over by another, with fatal results to two and injuries more or less serious to ten, is one that should set the wholesale denouncer of the motor-car thinking. Had the vehicle following the cap-sized wagonette been a motor-car the short space in which it could have been brought to a standstill would have rendered the running over, as a finish to the already serious disaster, impossible. It is not many months since Epsom was, on one of the race days, the scene of an equally disastrous wagonette accident, and hardly a week of the summer has passed unmarked by similar calamities to parties of pleasure-seekers. That the majority of these, and many similar accidents of a minor nature, would never have occurred had motor-cars been the vehicles employed is well enough known to the automobilist, but to convince the general public of this will be the work of years. Meanwhile the horse will continue to claim his victims by the hundred without a word of protest, for 'tis an old, old story that every one is used to. It is only on the very rare occasion of a motor-car figuring as the offending vehicle that anything of the nature of a protest is raised.

Motorists in the Air.

THE Hon. C. S. Rolls and his balloon party, consisting of Mr. Frank Butler, Miss Butler, and Mr. Stanley Spencer, decided to take advantage of the fine weather, and made their projected ascent in the new aerostat City of York on Tuesday afternoon from the Crystal Palace grounds. Mr. Rolls and Mr. Butler drove down to the Palace in their motor-cars and superintended the preparations for the ascent. Eventually the balloon was released, and was wafted by a very gentle breeze in a north-westerly direction. The stillness of the air afforded the aeronauts ample opportunity for making the desired photographic experiments at various altitudes, and we understand that some interesting results have been obtained. After an altitude of some 2,000 ft. had been reached, a curious counter current was met with, which caused the aerostat to drift back for some time towards the point of departure. Some little difficulty was expected in finding a suitable spot for a descent, but *terra firma* was reached just before dark at Lee Green, near Eltham, with the aid of a large crowd of willing helpers on the end of the guide rope. The party intend continuing their experiments shortly with a stronger and more suitable wind. On another page we reproduce a number of interesting photographs taken on the occasion of the ascent.

Jumping to Conclusions.

BECAUSE a man is found dead by the roadside, and there happens to be a lack of evidence as to the cause of death, the Hockley Heath police favour the theory that the unfortunate man is the victim of a motor-car. Even supposing the deceased to bear marks of having been run over, which does not appear to be the case, why should a motor-car be selected as the death-dealing vehicle? Surely the lumbering wagon, with sleepy driver, or brake, full of noisy beanfeasters, are the more likely agents of such a deed done in the dark. The idle hand and tongue of every policeman in the land have been set against the motorist, and it would seem that in future he and his car are likely to be dragged into every crime, shrouded of course with an appropriate cloak of mystery, which baffles the meagre intelligence of the force.

A New Use for Motor-Cars.

DR. DAWSON TURNER, M.D., Vice-president of the Scottish Automobile Club, writes:—"I should like to point out the great future the automobile may have before it in effectually administering the open-air treatment to consumptive patients. I have been very much struck by the beneficial effects produced by a thirty to fifty miles motor-car drive. Along with a feeling of marked exhilaration, an increased appetite, and improved sleep, there is a heightened healthy glow which after a few days' treatment tends to become permanent. The tendency to cough is much diminished. May I suggest to those in charge of sanatoria the advisability of combining a daily run on a good motor-car at a pace fully up to the legal limit with the ordinary open-air treatment? The patients should be placed in front of the car, so as to avoid any dust thrown up by the wheels."

Beware of the Police.

A CORRESPONDENT informs us that there has been recently fitted between Esher and Cobham, in Surrey, a telephone, and that when a motor-car passes either place, due notification is forwarded to the other, with the time of the cars passing. At Cobham, it is stated, a large wagon is kept in readiness, and on hearing from their friends at Esher, the police have this wagon brought out and placed across the road, so that it is impossible for the motorist to pass! We are afraid there are either too many police employed, or else their energies are misapplied. At all events the Home Secretary has need to see into the matter.

Motor-Cars in the Straits Settlements.

MOTOR-CARS have been recommended in this country as a means of relieving the congestion of towns; in some parts of the world they are welcomed as useful in opening up sparsely populated districts. Thus all the world sing their praises, and will soon join in promoting their progress. MM. Delacroix and Kesterre have been demonstrating the speed and reliability of the automobile to the people of the Straits Settlements, and a Singapore correspondent points out that it would be a saving of time and money to the Government officials if a regular automobile service could be established between leading stations, or the officials were provided with cars. We have constructed some excellent roads in the great peninsula, but many of the districts are too poor to support light railways. In some circumstances the motor-car would play an important and an economical part in developing the country.

American Bubbles Burst.

ONE very satisfactory piece of news comes from the United States with regard to the automobile industry. Many of the concerns that were floated two or three years ago to ostensibly deal in automobiles have vanished, as was predicted when they were boomed by certain journals. At the beginning of the modern industry several American financiers took advantage of public interest in the new business to avail themselves of the public capital as well. They started companies which did not intend to make motor-cars but simply to sell shares. A boom was made and this lasted for a little while. Now, however, only a few such concerns remain—a circumstance which is of advantage to the legitimate industry.

AN interesting feature of the High School Sports at Balls Bridge, Dublin, the other Saturday, was the appearance on the track of four Werner motor-bicycles.

MR. H. GAMBLE, of Belper, who has been appointed Northern representative for Messrs. Shakespeare, Kirkland, and Frost, Limited, Bradford Street, Birmingham, informs us that his firm will shortly place on the market a motor-cycle on the Minerva system.

A NIGHT OUT.



A DAY spent in Coventry is always a red-letter one, in my opinion. I love the Motor-car Works and noting the gradual strides made by British manufacturers. It has lately been my lot to ride a good deal on a 12 h.p. Panhard. Its running qualities were magnificent, but its wearing ones made me place greater confidence than ever in native workmanship. What was the use of romping up hills on the third speed, when the steering gear broke, and Providence alone ordained the disaster should occur on a level, rather than on a downhill road? Clutches, too, should be made to fulfil their office, and not give endless trouble through constant slipping. Brakes reliable enough, may be, on a car of four or six horse power, are absolutely untrustworthy on a high-powered vehicle, driven over some of the worst roads in the North of Scotland. Scarce a day passed without those on the fleet Panhard smashing up. Such cars are a luxury only for the wealthy, who can afford to run them for a year, and then invest in the latest novelty. But the sober British public, not endowed with the purse of Fortunatus, require a thoroughly sound, reliable car, strong of build, and economical both in the running and upkeep. In short, they want a vehicle that will last. To them I say, go to Coventry, to Birmingham, Wolverhampton, and any centre of the motor-car industry, and let them see with their own eyes the sound, good, honest work now being put into British cars.

A morning of radiant sunshine, an autumnal crispness in the air, faintly yellowing leaves, and perfect roads, all tended to a drive of pleasure. Little "Forrard On," a Progress voiturette, with a genuine $4\frac{1}{2}$ De Dion engine, bustled along in right merry style. Thirty-one miles were left behind in an hour and thirty-five minutes, barely a gallon of petrol being consumed. The marvellous little engine hissed and sputtered, and performed prodigies of valour on the top speed, climbing ascents which inspired respect even after one's recent experiences of the Panhard. After all, the poor motorist need not envy his richer neighbour so very much. The 12 h.p. Panhard, with all fittings and extras, will cost him close on a thousand pounds, require a skilled engineer to keep it in running order, and imbibe vast quantities of petrol. Forty miles in an hour and a half, over a give-and-take road, is excellent going. But consider the expense—the tires, the repairs, the spare parts and renewals! As I said before, it is a rich man's car. But the modest little four and a half will carry the less ambitious motorist thirty miles in the same space of time and at an infinitely smaller cost. So let him take comfort and be content with his good little conveyance.

"Forrard On" soon landed us at our destination, eluding the blue-coated officers of the law. We took her to the Progress Works, in Coventry, as the gear-case had sprung a slight leak, through which the lubricating oil drained away. "A stitch in time saves nine" is a true housewifely proverb, but never is it more applicable than to motor-cars. We looked forward to an hour or two's stay, and spent a most agreeable morning in inspecting the new types of cars in preparation for the coming year. It was a great disappointment both to the firm and the public, that the new gear-driven car was unable to make its appearance at the recent Glasgow trials, but Mr. West is a man who will not allow anything to be placed on the market before he is himself thoroughly satisfied. Two standard types are in preparation. The first is a light car to weigh about 6 cwt., fitted with either a $4\frac{1}{2}$ h.p. or the new $6\frac{1}{2}$ h.p. De Dion motor, located in front under a bonnet. Special attention is being given to the construction of the frame, which, although light, will be exceedingly strong. The axles are magnificent, and also the bearings. The car will be fitted with two speeds and reverse, and also with a new brake of unusual power, which holds both ways. There will be a third seat, detachable at will, and altogether it should meet the public demand for a fast, light vehicle at a moderate price. The second type will consist of a two-cylinder engine of eight horse-power, with a very ingenious clutch, warranted not to slip, and possessing the further advantage of thrust blocks. A

new form of tonneau body is being fitted, enabling the riders to sit in comfort, instead of with cramped limbs, as is the case in so many of the smaller cars. There are many points of interest about the vehicle which it would be premature to divulge, but good workmanship and high finish are conspicuous throughout. For a young firm the Progress Company have already achieved remarkable success, and, under Mr. West's able guidance, it is destined to gain fame, and we trust fortune.

We looked forward to driving our little car home again the same day, but the afternoon wore on, and it soon became evident that the setting and adjustment of the gear-case was no easy matter. Five o'clock passed, then six. So far, we had revelled in the lights of motoring, but now the shades descended. Suddenly, without warning, down came the rain with torrential fierceness. Dark grew the sky and wild the night. In ten minutes the streets were running rivulets. Worse than all, the car was not ready, and we were advised that we had better defer our departure until morning. We rebelled against the advice, but finally were forced to accept it. Telegrams were dispatched to the anxious better half at home, and we trudged to the King's Head in a depressed mood. My luggage consisted of a sixpenny comb, a threepenny tooth brush, and two twopenny sponges, bought *en route*. Would I be received, so lightly equipped? A damp, solitary female, clad in dripping waterproofs and hugging a paper parcel—her only personal effects? Human nature is kind—say what one likes to the contrary. The visitor was warmly welcomed, and made completely happy by the loan of a *costume de nuit*. Mr. and Mrs. Stanton were found in residence during the completion of that gentleman's fine new Daimler; and later on Mr. McLeod dropped in. We were now a party of motorists, and the subject of our conversation can be guessed. Cars, cars, cars! We could not get away from the fascinating topic. Mr. McLeod wittily suggested that the modern titles of our English hostels were singularly out of place. Why not "The Acorn and the Accumulators," "The Bear and the Bearing," "The Cat and the Carburettor," "The Lion and the Liner," "The Maid and the Male Clutch," "The Racehorse and the Radiator," "The Phoenix and the Pump"? and so on *ad infinitum*.

Rain descended heavily on the following morning, but, feeling very dissipated after our night out, duty compelled an early return to home and hearth. The faithful Brooks had sought a lodging with a fellow mechanic, and soon we scuttled out of the moist streets and said good-bye to the trappy tram-lines. "Forrard On" was in the best of humours, and the dirt seemed to make no difference to the going of the little car. Experts may object to a fast-running engine, but, say what they like, the De Dion is a marvel. For its size, it is uncommonly hard to beat. We look forward to another visit to Coventry ere long, when we are promised a ride on one of the new Progress test cars.

Is there going to be a boom in motor-bicycles? Many of the best-known firms are busy making them, not only for men, but also for ladies. These latter will shortly be placed on the market. One word of advice to the fair sex. Trust rather the machines emanating from houses already in the motor trade rather than those produced by cycle manufactories alone. The latter buy a Minerva, or any suitable engine, pop it on anywhere according to their fancy, strengthen forks and frame at their own sweet will, but have yet to gain experience in the article offered to the public. So, ladies, beware how you purchase, and, before doing so, make a point of having a good trial.

M. E. KENNARD.

THAT the Electric Ignition Company, Highgate Square, Birmingham, are making a speciality of sparking plugs is evident from the two photos that have reached us, no less than ten different plugs being shown on the two pictures.

At a meeting of the Bridlington Rural Council, a resolution recommending that provision should be made for the better regulation of motor-cars on the highways of the county was carried by nine votes to five, and copies were ordered to be sent to the East Riding County Council and the Local Government Board.

A TOUR IN WALES.

A PARTY of nine started from Pontypridd recently on a specially organised motor tour of over 400 miles, arranged by Messrs. Morris Bros., of Pontypridd. The car used was a Daimler, for which Messrs. Morris Bros. are district agents, and was fitted with an awning as a protection against the weather. The first day's run totalled over 100 miles, as the car had to go to Creigiau to fetch some of the party. Proceeding *via* Brecon, Builth, and Llandrindod Wells, the day's run was finished up at Newtown. On Tuesday the run was continued *via* Welshpool and Oswestry, where a stoppage was made for the night. On Wednesday morning Chirk and the pretty Glyn Valley were visited, and thence the route lay through Llangollen and Corwen to Bettws-y-coed and Llandudno. The return journey commenced on the Thursday, with a fine view of the Snowdon range through Bettws and Cerrig-y-Druidion, continuing through Bala along the shores of the beautiful lake and down to Dolgelly for the night. On Friday, the run commenced over the wild passes skirting the Cader Idris mountain, the road being nearly 2,000 feet above sea level, past the small lake at Tallylyn, and into the Corris Valley, noted for its slate quarries and narrow-gauge light railway. Then a rapid descent was made into Machynlleth to view the house where Owen Glendower was crowned. After lunch the day's journey was completed over excellent roads through Caersws and Llandinam to Llandiloos, where some of the ancient relics were visited. Saturday morning turned out wet, but having a complete waterproof covering, the tour was continued past Plinlimmon, *via* Llangurig, Rhayader, and Builth. The weather cleared a little, and good progress was made to Brecon, Merthyr, and home to Pontypridd, all being agreed that a most delightful holiday amongst varied scenery and exceptional surroundings can be made on a motor-car.

THE SCLAVERAND TIRE PUMP CONNECTION.

M R. A. A. GODIN, of 182, Gray's Inn Road, W.C., is introducing an improved form of tire pump connection which appears to possess some advantages. The new connection, which is in the shape of a tap, is intended to do away with the trouble and inconvenience caused by the old style of connection and the consequent twisting round of the pump every time the tire is blown up. As will be seen from the illustration, the connection is made by simply turning round the milled head. It is made to fit the Dunlop, Michelin, and Sclaverand valves (called in this country the Continental valve). A connection can also be supplied to fit the larger Dunlop and Michelin valves.



MOTOR-CARS were used on a larger scale than ever in this year's French military manoeuvres both for the transport of officers and stores.

FOLLOWING the Erie-Buffalo sweepstake which is being organised by the Automobile Club of America, a week of speed contests for motor vehicles is planned to take place on a mile track at Fort Erie, across the Niagara River from Buffalo, under the auspices of the Buffalo Automobile Club.

THE *Matin* publishes an article on the automobile by M. André Berthelot, son of the politician, who is also a leading chemist and member of the French Academy. M. Berthelot considers that automobile races have served their purpose. He believes that the future of the motor-car is as a useful means of locomotion for professional people. In his opinion, if France will encourage motor touring a considerable part of the foreign money which now goes to make fortunes in Switzerland and Italy might be attracted to France.

CONTINENTAL NOTES.

BY "AUTOMAN."

SOME curious experiments in wireless telegraphy were made during the French manoeuvres between a fixed post, on the one hand, and a balloon and a motor-car on the other hand. The motor-car was supplied with a very curious arrangement for receiving the signals, which looked very much like a chimney stack. The car employed for this purpose is a De Dion steam-car, weighing nearly five tons, and capable of doing ten or twelve miles an hour; a metallic cylinder about nine yards high and entirely electrically insulated from the vehicle, is carried on the roof; on the top of this are the electric points, from which wires descend to the instrument room, which is at the back of the carriage. One of the great advantages claimed for this travelling telegraph office is the possibility of being able to telegraph whilst it is moving.

THE misfortunes and narrow escapes of M. Santos-Dumont continue, and at the same time, the indomitable perseverance and courage of the young Brazilian seem to increase. On Thursday, last week, his No. 7 was taken out of its shed, and flew successfully on to the race course at Longchamps, where the usual evolutions were carried out in the usual brilliantly successful manner. A speed of twenty-five miles an hour was easily attainable, and the flying machine showed itself to be completely under control. But presently the aeronaut miscalculated his distance and scraped the branches of some trees, which ripped the silken cover of the balloon, and it immediately collapsed, precipitating the keel to the earth with considerable force. The light wood of the keel was again shattered to atoms, but M. Santos-Dumont stepped out of the cage uninjured. He proceeded, as usual, to pick up the pieces, and calculate how long it would take him to produce his No. 8, with which he is fully confident of being able to win the Deutsch prize.

WITH regard to the prize itself, a misunderstanding which I mentioned in last week's Journal is not yet cleared up. M. Santos-Dumont argues that a racehorse has gained the prize when it passes the winning post, not after the jockey has thrown down his reins, and the groom has taken hold of them, and he says that he will bring his machine back to the Aero-Club grounds, but he has absolutely forbidden his men to take hold of the guide rope, as he alleges that any precipitancy in this direction will be dangerous both to himself and to his men, from the fact of the proximity of buildings. M. Santos-Dumont adds that the money prize of M. Deutsch has never attracted his attention, and that if he wins it, he will give half of it to the poor, and the other half to those who have assisted him, so that, should the judges not consider that he has fulfilled all the technical conditions, the loss will be to the poor, and not to himself personally.

THE latest entry for the Deutsch prize is by M. Snutter, whose flying machine is to be ready in October: M. Snutter does not employ a motor, but relies on human power to work two big wheels, one at each side of his balloon. Of course it would be easy enough to add a motor to this machine if that were necessary, but still, much useful scientific work could be done by a flying machine propelled by human power, if it were practicable.

THE automobile is assuming a most important role in the French Army. General Brugere on his Serpollet may be seen frequently tearing over the roads, and raising a cloud of dust behind him. Behind him follows a spare car, ready to pick him up should his car break down. After this follow the officers of the Staff in *voiturettes*, so that should it be the desire of the General to visit any particular regiment, he could do so at a speed that has never before been possible, and thus no officer knows now at what moment the General may turn up. With the adoption of the motor-car for military purposes a new and great controlling power will come into existence, making the commanders of units particularly careful with regard to the food, lodging, and good

order of their troops, as the General may come upon them at the moment when they least expect him and find them at fault.

THE Emperor of Russia expressed a strong desire to study the automobile from a military point of view during his stay in France, and special instructions were given to military automobilists, so that the greatest number possible might manoeuvre and show their capabilities in the presence of the Tsar.

KING Victor-Emmanuel III. and his court continue to be fervent devotees of the automobile. His Majesty is at present at Racconigi, and the other day the Duke des Abruzzes, with the Duchess Hélène d'Aoste as a passenger, drove over from Turin to visit the King after lunch. An excursion to Pollenzo was proposed, and the Royal party set out in two motor-cars for a four hours' run. The party consisted of the King and Queen, the Duke d'Aoste and his wife (the Princess Hélène d'Orléans), the Princess of Battenberg, and the Duke des Abruzzes.

MR. SIDNEY H. HOLLANDS takes advantage of a self-evident clerical error in my remarks on gravity *versus* levity. All the context, together with the arguments I have quoted, show that in my reference to the penny balloon and the pigeon the comparison is used as an argument by the aviationists, and not the advocates of levity. But here Mr. Hollands misses the point entirely, and I cannot accept his definition of the difference between levity and gravity principles, and see no valid reason why man, recognising the futility of an attempt to construct a flying machine, the motive power of which should have the same relation to its weight as a bird's wing power has to its weight, should not employ hydrogen gas to counterbalance the difference.

WITH regard to the well-known researches and experiments in steam flight and soaring which Mr. Hollands quotes, surely he does not wish the uninitiated public to believe that any practical results have been achieved in this direction. If so, I am glad of this discussion, which enables me to enlighten the public. Meritorious and interesting as these experiments have been—and all honour is due to those who have worked in that direction—is there one of them to-day that has any chance of starting from Suresnes, rounding the Eiffel Tower, and sailing back to Suresnes? The future may reserve possibilities for the advocates of "no hydrogen," but at present the field is barren of practical results, whilst advocates of the navigable balloon have the practical results of several experimenters to encourage them, and M. Santos-Dumont, with the first *gravity* navigable balloon, should in my opinion be applauded and encouraged to press on to a conclusion in a direction in which he has already achieved practical results. I am not alone in my opinion, for I see that the Commandant Renard, in an interview with the correspondent of the *Figaro*, says, "For the present we must content ourselves with steering balloons."

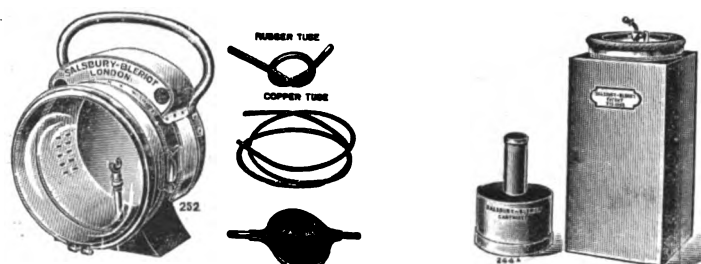
THE 40 h.p. Panhard car driven by Mr. C. Jarrott in the recent Paris-Berlin race is now in England. The other day we had an opportunity of inspecting the flier at 14, Regent Street, S.W. The car has a number of special points, to which we shall probably refer in a later issue.

OWING to the great advance in the cost of materials Weston Motors have found it necessary to issue a notice relative to an increase of catalogue prices. Their cheapest model (Spindle seat Stanhope) is now listed at £190, other cars being proportionately advanced.

THE De Dion-Bouton Motorette Company, of Brooklyn, N.Y., have sent us a copy of a booklet of instructions for their Motorettes, which they have recently issued. While the work is devoted to a description of the De Dion type of motor and vehicle, it will be found extremely valuable to any one desiring to become familiar with the four-cycle type of explosive motor in almost universal use on motor vehicles. The De Dion motor is illustrated and described in detail. The vehicle is also treated in the same manner, and full instructions for the operation and care of the car are given.

LAMPS FOR VOITURETTES AND MOTOR-CYCLES.

MESSRS. SALSBURY AND SON have just put on the market a series of smaller sizes of the now well-known Salsbury-Bleriot lamp suitable for small voiturettes and motor-cycles. These smaller-sized lamps give a light almost equal to the powerful Salsbury-Bleriot light already adopted in such considerable numbers for the largest automobiles. This is arrived at by separating the generator from the lamp itself.



The above illustrations show the generator and the cartridge with the gas-bag and tubing for conducting the gas from the generator to the lamp and also the lamp itself. The generator is fixed by suitable clamps on to the back axle of a motor-tricycle or voiturette. The gas-bag which is supplied with the lamp is employed to make the connection between the generator and the length of copper tube which serves to conduct the gas to the lamp. Owing to the ductility of the copper it is easily bent round angles, and the necessary clips for holding it in place are also furnished. The connection between the copper tube and the lamp is made by a short length of rubber tubing. In addition to their brilliant light, these lamps have the advantage that the charge can be left in the generator for days at a time without the gas escaping or the charge wasting in any way.

It is announced that a motor-car service is to be established on the eastern seaboard of Ceylon.

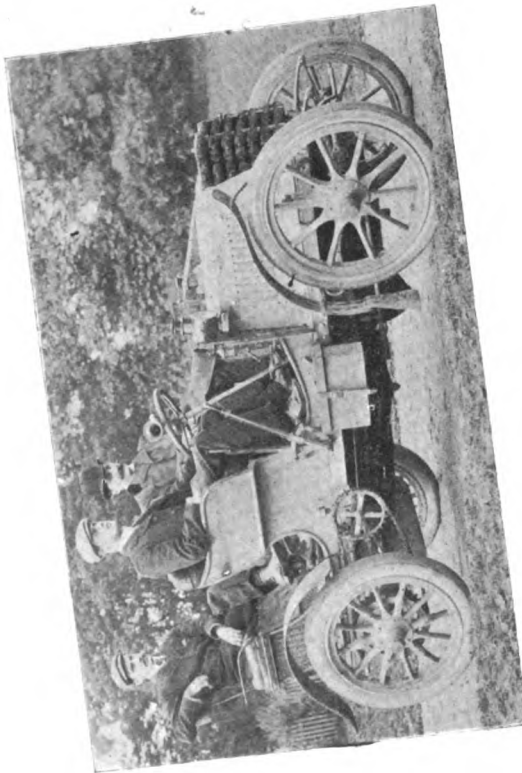
ON October 24th there will be a motor-cycle race at the Park des Princes, in Paris, organised by the *Auto-Velo*. The distance covered will be 100 kilometres. The contest is open to all motor-cycles weighing less than 50 kilos. empty.

CALLING in at the depot of the Locomobile Company of America at South Kensington the other day, Mr. W. M. Letts took us for a tour of inspection of the extensive enlargement scheme they have at present in hand. To begin with, the existing depot at 52, Sussex Place, has been found too small, and consequently the company has taken Nos. 39, 40, 41, and 42 in the same block of buildings. When we called these were in the hands of the decorators, and are likely to be so for about another fortnight. Large and handsome offices are being built, and when the alterations in hand are completed the Locomobile Company will undoubtedly have one of the largest if not the largest motor depot in the country. The extensions which the Locomobile Company have in progress do not end here. It has been decided to entirely control the company's English business at South Kensington, and with this in view a large area of land at the rear of the present depot has been acquired. Here workmen are at present busily engaged on the erection of a large warehouse and works, where not only will a large stock of cars be kept, but facilities provided for assembling and packing cars for shipment on a large scale. Still another section is to be added, in which users of Locomobile cars may drive and have their vehicles cleaned and refilled with petrol and water "while you wait." Everything that can be done to facilitate the use of these steam-cars in London is to be done, for the plans of the new extensions even provide for the laying out of a pleasant little garden, where, while waiting for their cars, "Locomobilists" may sip a pleasant cup of tea and talk "Locomobilmism" to their hearts' content.

Motorists in the Air.



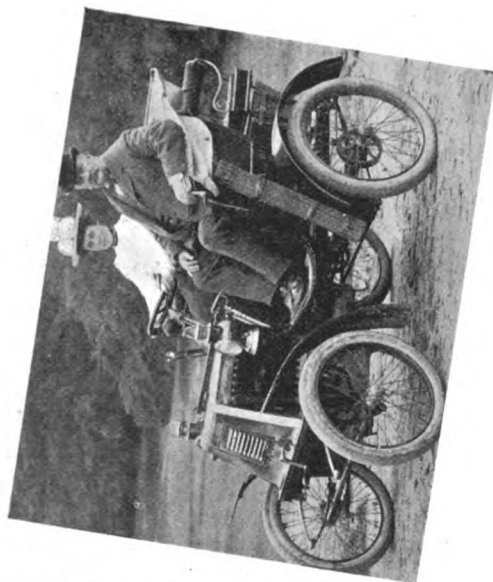
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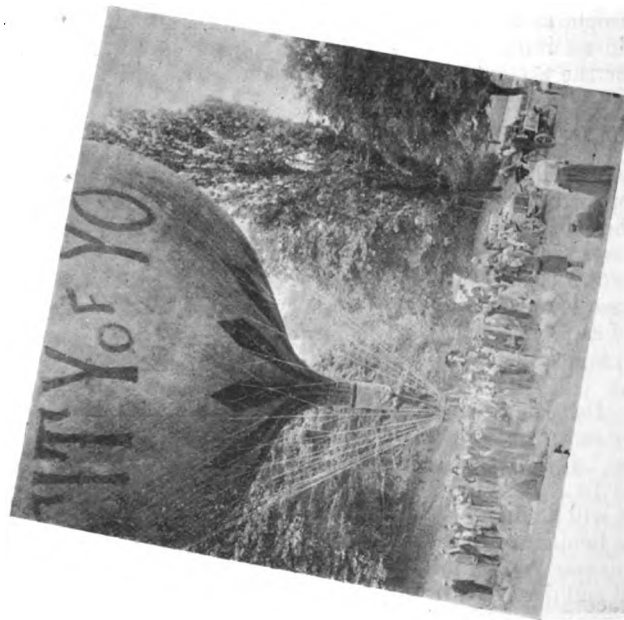
THE HON. C. S. ROLLS ARRIVES AT THE PALACE.



GETTING THE BALLOON READY.

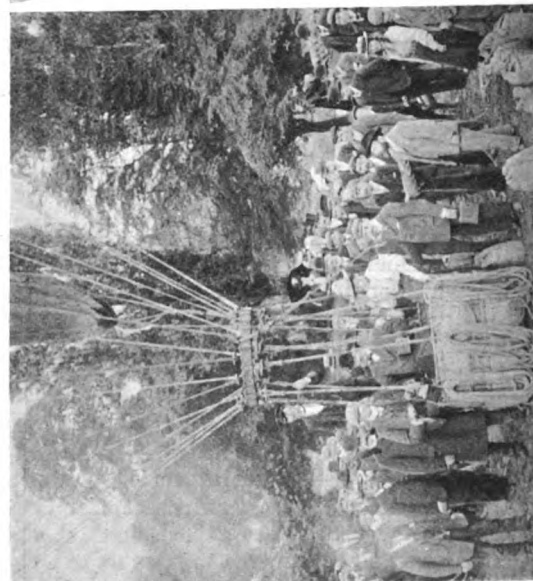


MR. AND MISS BUTLER ARRIVE ON THEIR RENAULT CAR.

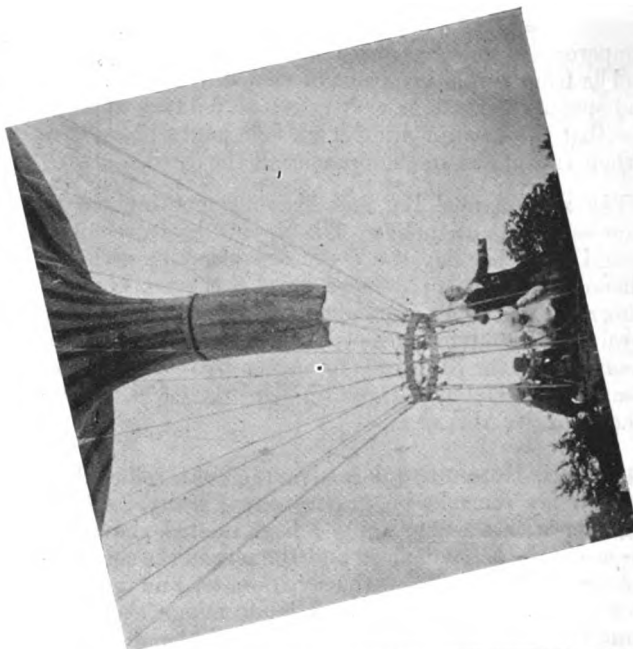


ALMOST READY—TYING UP THE GAS CHAMBER.

Photo by J



READY TO LET GO.



IN MID AIR.

[Argent Archer, Kensington.

CORRESPONDENCE.



MOTOR-BICYCLES.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—As I intended from the first purchasing a motor-bicycle, but wished to find out the relative advantages of each make before doing so, I have read with great interest the correspondence of the last few months relating to them. After carefully considering the designs and make of each, I decided to try a "Phoenix," as both the general arrangement of machinery and distribution of weight appeared to me to be the most satisfactory. I accordingly arranged with the maker for a trial run. A new machine, which had not been on the road more than a mile, and that for trial purposes, was placed at my disposal, and arrangements made for a run into Suffolk at the following week end, particulars of which may be of interest.

We started on the Saturday afternoon from Holloway about 4.30 in a slight rain. I felt rather nervous as to control and general manipulation, but was surprised to find before reaching Finsbury Park that I had the whole apparatus well in hand. On reaching Tottenham we had to put up for about one and a half hours, as it rained in torrents, the whole district being flooded during that period. On resuming our journey we had to ride over half a mile through water varying from 1 in. to 6 in. in depth. This was decidedly not a fair test, but we came through without mishap. It continued to rain all through to Chipping Ongar, the roads being very heavy. It apparently had not rained beyond here as, on continuing at 8.30 after refreshment, the roads were good and dry through to Chelmsford, and continuing on through Witham and Kelvedon, where we turned off the main road, and passing through Coggeshall and Colne, we arrived at our destination for the night at 10.30. This last two hours was the smartest travelling I had ever done. The following day we rode to Bures, and ran through Lammarsh, Penmarsh, Maplested, Wickham, Castle Hedingham, to Halstead and back, all through an extremely hilly district, being out about two hours. We returned to town on the Monday through Halstead, Gosfield, Braintree, Rayne, Dunmow, Hatfield, Broad Oak and Stanstead, without the slightest mishap throughout.

As a result, I ordered a machine, and have since travelled about 1,000 miles without any failure whatever, and the sparking cell only having been charged once. I may say the machine has more than fulfilled my expectations, and that I am extremely pleased with it in all respects. As regards consumption of petrol, I find that over average roads the machine will run about 200 miles with the full supply, of course including that carried in the spare tank. This extra supply is a very great advantage. The twisted leather belt is also very convenient, as in the event of stretching it can be tightened instantly. I have not yet met any hill that with pedalling I have not been able to ride, but I always do this even on an ordinary hill, as the slightest assistance on the incline makes a considerable difference to the speed travelled, and it is really no labour whatever.—Yours truly, A. V. GIFFKINS.

THE LISIEUX ACCIDENT.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Your correspondent, Mr. A. Little, judging from his letter, did not read the paragraph in "Automan's" notes to which I took exception, otherwise he would have seen the motive I had in view. I hold no brief for the Comte de Villeroi; my object was simply to have a wrong righted, as it not only cast a reflection on the Comte but on the whole of the motorists in France.

The only conclusion to be arrived at from the paragraph I refer to was, that some motorist had deliberately run over and killed an "Octroi" man, and bolted at full speed so that it might not be found out who he was. This, I maintain, was a libel on the motorists of France, and I addressed my letter to you to place the full facts in your hands for publication. It is not necessary for me to go into any of the other points mentioned in your

correspondent's letter, beyond saying that he is sadly wanting in gentlemanly courtesy when he doubts the word of the Comte de Villeroi. The full facts of the accident were in my hands some time before the publication of "Automan's" notes.—Yours truly, AN OCCASIONAL MOTORIST IN FRANCE.

NOISY EXHAUST.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—In answer to your correspondent *re* noisy exhaust, I have wrapped my silencer— $3\frac{1}{2}$ h.p. De Dion voiturette—with $\frac{1}{4}$ inch sheeting of asbestos, and inside each compartment have fixed a lining of same material, of course taking care not to block air holes and securing the asbestos so that it cannot work round. I have driven several hundreds of miles since I made this arrangement and find it effective and apparently lasting.—Yours truly, W. P. SHAW.

FURIOUS DRIVING AND THE SPEED LIMIT.

TO THE EDITOR OF *The Motor-Car Journal*.

DEAR SIR,—In the valuable and interesting reports you give of the furious driving persecutions—I beg pardon, I mean prosecutions—I note that in nearly every case the defendants try to evade the consequences by giving as an excuse that their car was running badly, was geared low, etc., etc. I am surprised at their increasing the costs by explaining to the magistrates, who are usually too ignorant technically to understand, and who are almost without exception horse breeders, horse owners, or have direct or indirect pecuniary interest in horseflesh, and therefore are biased against the motorist, before even the police officer opens his lips to utter his sacred and infallible testimony. The very best thing the defendant can do is to plead guilty and think his contempt of the bench, consoling himself with the thought that before many years are past the English bench will be purged of those unprogressive obstacles to the development of a great industry.

I may say a word here in favour of the police. During the thousands of miles I have motored I have found them to be a fine lot of men; they have always treated me fairly, and any prosecutions they are mixed up with must not be put to their discredit, for if we could only look behind the scenes we should see the prime moving cause at work, viz., *The Great Horse Interest*. This is what we are fighting; the bulk of the magistrates are subject to its influence, besides innumerable men in public positions—men who urge the chief constables to worry motorists, and of course the police obey the orders of the powers that be, and small blame to them.

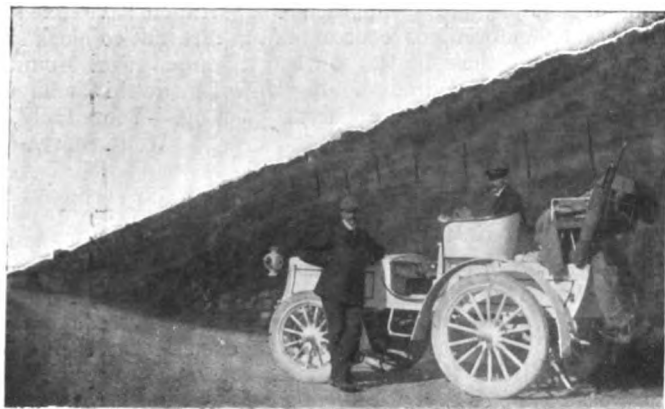
The question, therefore, arises, what is to be done? Well! One solution is to travel slowly, another is to unite and try to get the ridiculous law altered. I know there are several members in the House who are itching to get the speed limit raised; a little pressure from a few influential people and the deed would be done. I think no stone should be left unturned by the rank and file of motorists to achieve this result. Personally, I will put my hand in my pocket to subscribe to the expense of issuing appeal sheets to be printed at your offices, and circulated in all places to be signed by motorists all over the country. The £5 fines that have already been legally abducted from their rightful owners' pockets would have paid for an elaborate system of petition canvassing. Let motorists approach the Members for their towns, and at least get to know whether they are for or against the great cause. What we want is energy; we are fighting ignorance and prejudice, just as the first railways fought them: men whose one creed is "because a horse cannot go more than twelve miles an hour nothing else has the right to." Let the readers of the *Motor-Car Journal* write you a postcard, Mr. Editor, and state whether they are in favour of taking up this much-vexed speed question.—Yours sincerely,

D. L. REANEY.

MR. HARMSWORTH'S motor-car has been a prominent feature of his electioneering campaign in North-east Lanarkshire.

LONG-DISTANCE RUN OF AN ELECTRIC CAR.

THE electric car "Powerful" returned to the works of the British and Foreign Electrical Vehicle Company on Friday, the 20th inst., having completed 1,161 miles since leaving London last month for Glasgow. The car returned through Liverpool, Manchester, Crewe, Birmingham, Gloucester, Bristol, Salisbury, and Winchester, and reached Mr. Henry Leitner's works at Woking on the 19th inst., where a large



GOING UP SHAP.

number of friends were present to welcome the party. During the whole tour only one accident occurred, and that was of a trifling nature, being a short circuit in one of the motors. This happened during the Trial week at Glasgow, and necessitated the loss of one day.

Scarcely any tire trouble was encountered throughout the whole tour. Three punctures were caused through running over nails and glass, and on one occasion the stitching of the seam of the canvas in one Michelin outer cover was cut, which made it necessary to put on a fresh outer cover, as the repair could not be effected on the road. The accumulators stood well throughout the journey. These cells have now carried the car well over 3,000 miles, 12 per cent. of the positive plates alone having been replaced. It is anticipated that another 2,000 miles at least will be run without any serious repair being necessary.

The cost of electricity, housing, washing, and cleaning, and night attendance throughout the tour, including the Glasgow week, amounted, we are informed, to £12 12s. 4d., or 2½d. a mile. The car carried four passengers and a considerable amount of luggage throughout the greater part of its long journey. The longest run on one charge was eighty-four miles, but care was taken to make most of the runs less than seventy miles, to allow for



A REST AT STILTON.

every emergency of weather and condition of road. The car was charged eighteen times (excluding charges during the Glasgow week). As a rule this was done at the various corporation electricity works, but in some cases private stations and collieries willingly supplied the current. The journey may be taken to have definitely proved the facility with which long tours can be undertaken on an electric car, at a very reasonable cost.

FLOTSAM AND JETSAM.

BY "FLANEUR."

THE puff preliminary had done its work. One was assured that the prime sensation of the new piece at Drury Lane was to be an episode in which a motor-car was the predisposing cause of the mighty thrill without which no melodrama is complete. And so, after becoming protestation to the wife of my bosom that I was bent on business rather than pleasure, I parted with the necessary quantum of shillings at the box-office and gave up my Saturday evening to "The Great Millionaire." Now, Mr. Cecil Raleigh, as I know of old, is wont to put his tongue in his cheek when he writes down to the level of the meanest intelligence, and the drama of Drury Lane is superior only in its setting to the lurid efforts of transpontine genius. But in the elaborateness of that setting, and in the modernity which is its dominant note, one has usually found the needful palliation of the otherwise wholesale lack of artistry in the production. We had last year, for example, in "Hearts are Trumps," a presentation of a London music hall, both behind the curtain and in front, that was worthy of all praise by reason of its vivid actuality. The Alpine precipice scene, with the avalanche that overwhelmed the villain of the play, had also no small measure of verisimilitude to recommend it. So, in "The Great Millionaire" I looked for realism, if not for art.

INTO the ramifications of the plot I am not supposed nor disposed to enter here, but will only deal with the automobile interest—or dearth of it—of what proved to be a very tawdry play. The first mention of a motor-car is in the Fourth Act, Scene I. The millionaire, Campbell, is rapidly going mad with anxiety as to his long-lost daughter, who is lying upstairs in a condition that causes grave concern to the assembled doctors. This is at Deerwood Towers, in Devonshire, the home of Lord Deerwood, who is in love with the sick girl. Suddenly Deerwood enters with a rush, but with few traces of a long journey, and hands the chief physician a bottle of medicine which Deerwood has driven to London and back to fetch in his new and fast motor-car. He makes some indistinct allusion to going there and back in thirteen hours, but the point was not well driven home, neither was it made clear that the car had saved the situation. The villain of the piece, Denby Grant, who is secretary to Campbell, has meanwhile persuaded the over-wrought millionaire to part for the first time with his private telegraphic code. A few moments afterwards a loud clattering noise is heard outside, and the millionaire angrily calls for its immediate suppression. Subsequently Lord Deerwood comes in, looking scared, and announces that the safe is open and the cipher gone! Then the millionaire realises that he has been duped, and that the loud noise that had been heard some time before was the starting of the motor of the very car on which Deerwood had travelled to town and back, and on which Denby Grant was now speeding away with his ill-gotten prize. In the confusion which follows the audience conveniently ignores improbability number one, which is that Grant could have got away unobserved when Campbell gave imperative orders for the noise to be stopped outside.

LORD DEERWOOD then soliloquises in the accepted melodramatic fashion, and goes off crying, "It is a race for a fortune, and I'll win it if I have to die for it," from which one deduces that he has another motor-car in his stables, though he does not say so in set terms. The next scene shows us the interior of a country inn, on the road to Plymouth. Kate Cagney, who is in love with Denby Grant, awaits him here, and on his arrival, in leather jacket and cap, he informs her that a second car is in hot pursuit, and begs her to do her utmost to detain it by one pretext or another, while he hastens to the coast, where the yacht of Julius Trent awaits him. Trent is Campbell's financial rival, who has bribed Grant to steal the private code. Miss Cagney cries, "I'll stop that car if I have to fling myself under the wheels!" Grant goes out into the tempestuous night, heedless of the warnings of the landlord. This landlord, by the way, is

made to provide a little comic relief by reason of his comments on automobilists. Here is one of his chief efforts:—"Flies in their eyes, dust in their throats, and working like slaves—and they calls that pleasure. But, bless you, they would not drive an engine for wages, not them!"

MATTERS should now be tending to a climax, but they lead to bathos. The next scene shows Grant outside the inn, and the car motionless with its back towards the audience. In the dim light its type is indeterminate, but it has tiller steering. Grant cannot start the car, and calls out for a smith. Enter Solomon Dawes, a gipsy, just escaped from Dartmoor, where he had been "doing time" for poaching on Campbell's estate, and convicted mainly through the evidence of Grant. "I can do a bit of smith's work," says Dawes, and Grant cries, "Look at that brake, and see if you can make it act." Dawes then gives a few taps, and, *mirabile dictu*, the trouble is remedied. Then a voice is heard shouting, "Stop! Stop! Denby Grant, stop!" Dawes thus realises the identity of Grant, whom he had not recognised in the dark. "Denby Grant," he soliloquises, "the man what made me a convict! I have got 'im 'ere to my 'and." "Come on! come on!" shouts Grant, but Dawes still soliloquises. Then Grant offers him £20 to drive him to the cliff, and Dawes, meditating revenge, takes his seat on the car. The whole sequence of events up to now is wildly improbable. A convict who has been incarcerated for a lengthy period is not only able to repair a motor car of the latest pattern, according to sundry glancing allusions, but even to mount and drive it with ready confidence, although even before his conviction he was only a poaching gipsy. Moreover, though the pursuing car is near enough for Dawes to hear Lord Deerwood's frantic calls to Grant, a long parley can ensue between Grant and Dawes without Deerwood overtaking them!

THE next scene is supposed to be a triumph of stage realism, but to the practical automobilist its ineptitude is contemptible. By means of a cinematographic reproduction of the Plymouth road, moving towards the audience, the car—still with its back alone visible, is supposed to be speeding forwards. There is never for one moment, however, a suggestion of real travelling. The car is made to sway laterally, and the occupants indulge in the most violent and inexplicable movements. I have sat by the side of men driving at all speeds from two to sixty miles an hour, but never have I known one wriggle and writhe in his seat as these two freaks at Drury Lane. Jets of steam are thrown up behind the driving wheels to simulate dust, oblivious of the fact that the night is wet. Worst of all, however, is the "biograph" itself. It wobbles frightfully, and at one moment makes a bound which would imply the entire upheaval of the huge masses of rock which line the road. Finally the car slips from view, supposedly over a precipice. A moment later a voiturette is pushed from the wings—the engine is quite silent—and a shadowy figure (Deerwood's) walks across the stage. Curtain.

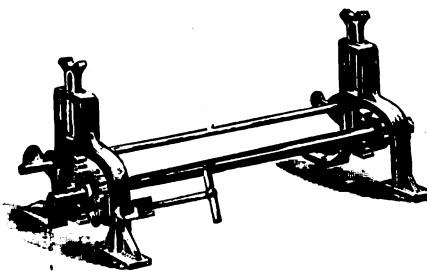
In the fifth scene the foot of the precipice is shown. A detached wheel and a few splinters lie around, together with the corpses of Grant and Dawes, and steam floats upwards from behind a rock on which the car has come to grief, the said rock being conveniently placed there to avoid the necessity of showing all the broken parts. Deerwood appears, having clambered down the cliff, and his first thought is for Grant's wallet, in which the secret cypher is duly found. Exit Deerwood, with scarcely a glance at the bodies of the men who have gone to their death. Curtain quickly. The automobile "interest" of the piece ends here, but I am bound to say that it never approached reality for one single instant, and not only does it disgust the automobilist for the reasons above mentioned, and others I have not space to enumerate, but it also fails to captivate the general public. From "the gods" to the stalls there is only one impression visible, and that is the sense of absolute failure. The Drury Lane management must learn something more about motor-cars and their management before they can hope to present automobilism as it is.

A GOOD RUN ON A MOTOR TRICYCLE.

ON Sunday, Mr. Jos. Carter, of High Street, Lynn, successfully accomplished a hundred mile ride on a motor-tricycle, without even a single adjustment being necessary. Starting from Swanley Junction at 8.30 a.m., London Bridge was reached at 10.10 a.m., the bad roads and traffic necessitating slow travelling. Continuing the journey through the City, Shoreditch, and Stoke Newington, Waltham Cross was soon reached. Here a stop was made for refreshment, and Mr. Carter bade farewell to his friends who had accompanied him thither, and afterwards proceeded on his journey via Ware and Royston. At the latter place a halt was necessary to oil a bearing, evidently overlooked. Cambridge was passed through at 2.50 p.m., Ely at 3.55 p.m., Littleport at 4.25 p.m., Downham at 4.57 p.m., and Lynn reached at 5.50 p.m. The motor is a Beeston 1½ h.p., with tube or electric ignition. Only 9½ pints of petrol and one pint of lubricating oil were consumed on the run. The journey to London was commenced by road on Tuesday, the 27th ult., but at Downham the engine failed through a defective crank pin, and the journey was continued by train to London, and the machine towed to Swanley, the destination, by motor-car. Here the machine was repaired by Mr. F. Cox, who thoroughly overhauled it and tested it on the Kentish Hills, mounting gradients of one in six without pedalling. This is not the first motor Mr. Cox has improved, he having last week no less than five to overhaul, one Benz car subsequently mounting Farningham Hill at 6½ miles per hour fully laden, which previously required assistance from the rear to assist it up the same incline. Had it not been for the hot bearing, which probably was not oiled before the start, the tricycle could easily have covered over 100 miles without a stop. The plug used was a Reclus and the trembler a special one of Mr. Cox's own manufacture, with an appliance to prevent oil getting to the platinum points. Neither the trembler nor the plug were touched during the journey.

AILS CRAIG MOTOR-CAR SUPPORT.

THE accompanying illustration shows an improved form of jacking stand for motor-cars which has been put on the market by the Ailsa Craig Machine Company, of Grand Parade, East Putney. It will be observed that the action of the new jack is a rack actuated by a key moving in turn a worm and gear wheel. Hence ample power is obtained even for heavy cars, while, on the other hand, the stand is small enough to



go under a tricycle, making it therefore of practically universal utility to motorists.

The width of the stand is instantly adjustable; it is only necessary to loosen the finger bolt which holds the sliding rod, and the apparatus can then be opened or closed, as the shaft connecting the gear wheels is square. A further advantage is found in the fact that one end of the long rods can be entirely disconnected if desired, and the machine used as a single jack.

THE question of where to keep one's motor-car finds an easy solution at the hands of Messrs. Boulton and Paul, Limited, of Norwich, who make a speciality of portable wood and iron buildings for that purpose. The motor-car houses are made in several sizes and are fitted with skylight, double doors, ventilating window, etc.

THE CARE OF A MOTOR-CAR.

THAT motor-cars are very often unsatisfactory is a question which cannot be disputed. But why is this? There is one very good reason—simply this—the owner of the car does not give it the attention and care that is necessary for its good running. Quite a large number of people are “off” motor-cars altogether because they either could not or would not give their vehicle proper attention. Nowadays, when motorists are getting rather a close time of it, it is necessary that their cars should be as quiet and odourless as possible. All this is a question of cleanliness and care in driving. The writer will proceed to make a few remarks about the necessary care of a motor-car.

The Engine.—If your engine has any exposed gear wheels such as those used for the timing, do not neglect them; if they are allowed to get dry they will chatter in a most unpleasant manner. Always without fail lubricate the engine properly, but do not over-lubricate it, or you will travel in a blue smoke leaving a somewhat pungent odour behind. It is this sort of thing that gives motor-cars the bad name they have in certain quarters. The carburation is an important point, since imperfect carburation means a faulty explosion, and a faulty explosion means an unpleasant smell. Engine bearings must always be watched, as, in careless hands, one may “seize” at the most unexpected and inopportune moment. The writer cannot over-emphasise the fact that proper lubrication is one of the most necessary adjuncts to a sweetly running engine.

The Gear, Driving, etc.—Gear-driven cars are usually the offenders as far as noise is concerned, so a few remarks about the keeping of the gear may not be out of place. There are various opinions as to what to put in the gear box, the usual plan being to put plenty of grease in and then nearly fill up with some good lubricating (heavy) oil. Of course, as no gear box is perfectly oil-tight some will work out, so it is a good plan to put oil in every two or three months. If the car is of the Renault type, where bevel gear is employed on the back axle, the case there should be similarly treated, as the bevel gear gets very noisy if lubrication be neglected. It is shameful to see how some of the gear-driven cars are handled either by extreme novices or people who care nothing for the car. Some motorists appear to think that to get the gear in properly extreme violence must be used, and the result is a horrible noise and, if the gear is overshot, as is very often the case, an engine racing at about 1,200 revolutions. In such a case, how can anyone in the street be blamed for anathematising the car? Speed-changing is a knack which is usually, in careful hands, speedily acquired, and once acquired not easily forgotten.

Brakes, Clutches, etc.—It is unfortunate that some motorists venture out with their brakes in bad order, but such is the case, and about the worst possible thing that could happen to a motorist is his car colliding with anything owing to defective brakes. Motor-cars have the reputation of being able to pull up in a few yards; surely it is better that they should live up to it. Always look after your brakes, and if one is faulty do not go out till it is repaired. One brake at least should work backwards, as if a gear be missed on a hill and the sprag is not down a run back will inevitably result, with more or less disastrous consequences. Some motorists put resin on their hand brakes to ensure a good grip, but it is all the same not an advisable practice, as it is detrimental to the brake. A really good brake does not need it; all that is required is a little adjustment from time to time. In case of emergency resin sometimes has to be used, but it should be immediately washed off with paraffin on returning home. As regards the clutch, it is usually fatal to put resin on it if it slips; the usual result is that the clutch grips so tightly that it refuses to come out when required, and an unexpected occurrence of this kind might have bad results. In all good clutches the tension spring or springs can be adjusted, so resin, etc., is unnecessary. It is a good plan to sometimes rub castor oil into the leather to keep it pliable.

A Few General Remarks to Conclude.—Keep the lamps and plated parts of your car clean. Do not think it a trouble to run

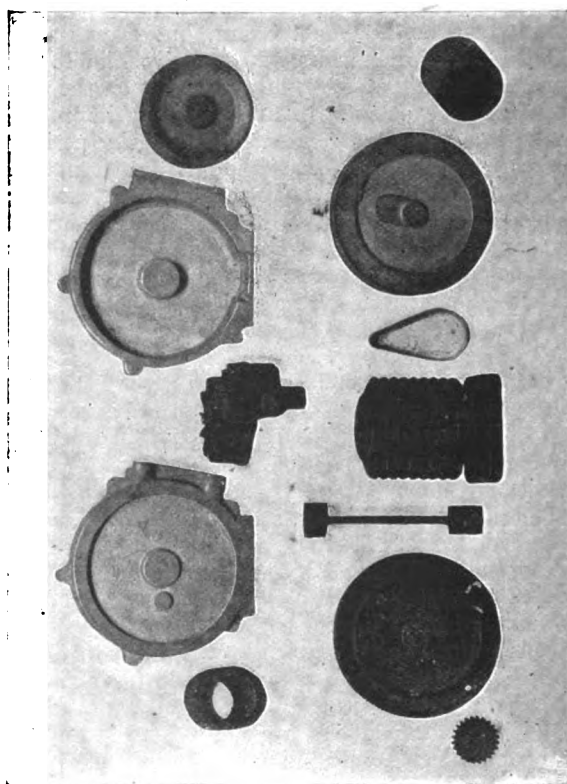
paraffin through your engine occasionally. It is a very good thing to run paraffin through the valves when you are about half-way through a long run. If your carburettor is of the spray type have a look at it every six months; foreign matter often gets into petrol. Have good wire for the high tension and keep the tremblers and points clean, it prevents misfiring.

A Final Remark to Novices.—When you start your engine in a fairly crowded place remember that it usually starts much better when the spark is turned on and the petrol tap open!

R. A. C.

MOTOR CASTINGS.

UP and down the country there are numerous engineers with small plants who have commenced the manufacture of small petrol motors, obtaining the necessary castings from outside. The London Autocar Company, of 182, Gray's Inn Road, London, W.C., appear to be making quite a feature of catering for this demand for castings, they being able to supply sets for engines, both air and water-cooled, from 1½ h.p. to



3½ h.p. Their latest set of castings, of which an illustration is given herewith, is for a small petrol motor of 1½ h.p., suitable for use on motor-bicycles. This set consists of: Two crank cases, in aluminium, cylinder casting, two flywheel castings, piston casting, piston ring casting, connecting rod casting, exhaust gear wheel casting, combustion chamber casting, cover, in aluminium, for contact breaker, and pulley wheel casting. The flywheels are designed and cast in bronze in order that the rims can be filled in with lead to obtain greater weight and power.

WE are informed that Mr. R. H. Griffin, who has for some time past been the Provincial motor representative of Messrs. Brown Brothers, Ltd., of Great Eastern Street, E.C., has now been appointed London City representative for both motor-car and cycle goods, in place of Mr. Philp, who has resigned.

MESSRS. DAVIDSON BROTHERS, the owners of the motor-car wrecked recently between Howden-le-Wear and High Grange, have offered a reward of £5 for information regarding the wreckers. The occurrence is being made the subject of careful inquiry by the police.

HERE AND THERE.

A MEET of the members of the Reading Automobile Club will be held at Swallowfield Park to-day (Saturday).

IN reply to Mr. E. T. Brydges and several other correspondents, the average consumption of petrol of a $4\frac{1}{2}$ h.p. De Dion motor is at the rate of about one gallon per thirty miles.



THE WOLSELEY 5-H.P. DELIVERY VAN TO CARRY 10 CWT.

MESSRS. COOKE AND WADE, of Cutlers' Hall, Sheffield, have been appointed agents for Marshall cars in Sheffield and district.

A SMALL petrol motor of $1\frac{1}{2}$ h.p., together with the necessary accessories suitable for motor-bicycles, has been put on the market by Mr. W. Gummer, of 21, Oakley Street, London, S.W.

TO-DAY (Saturday) is the last day for entries for the usual quarterly 100-mile trial of the Automobile Club, which will be held on Tuesday next, the 1st proximo.

THE Huntingdonshire police, stationed on the North Road, are to be provided with stop watches to enable them to check the pace of motor-cars.

THE motor-car made its first appearance in Llangamarch last week and caused some excitement amongst the natives, few of whom had ever seen such a vehicle.

THE Thornycroft Steam Waggon Company are building a special 4-ton truck for the Burmah Ruby Mines for conveying workmen to and from the works.

MR. F. W. CARVER, of Southtown Dock, Great Yarmouth, is well equipped to carry out any repairs to motor-cars. Spare parts are stocked and an inspection pit is available.

THE Caledonian Motor Car and Cycle Company, Ltd., have sold to Mrs. McDougall, Dalhousie Castle, Edinburgh, through their Edinburgh agents, a 10 h.p. Peugeot wagonette of the latest type and design.

THE Frimley Urban Council have decided to write to Captain Sant, Chief Constable of Surrey, and to the Surrey County Council, urging that steps should be taken to lessen the speed at which motor-cars are driven.

THE Trafford Motor Company, of Ardwick, Manchester, is turning out some neat *tonneau* bodies for motor-cars. Artillery wheels, spider wheels, steering wheels, and differential gears are also made by the company, which undertakes repairs of every description.

MESSRS. MOORE AND OWEN, of Coventry, have sent us a sample of "Garlio," a cloth for cleaning purposes. It is loosely woven in handy 18 in. squares. It possesses strong absorbent properties, is non-inflammable, easily washed, and very durable.

AT the last meeting of the Nairn County Road Committee, some members said that motor-cars were run in the locality at speeds of from twenty-eight to forty miles an hour, and condemned such reckless driving. One gentleman said they would support any measure suppressing the "curse."

LORD KINGSBURGH has a cunning, albeit useful, device on his Delahaye car, and what apparently looks like a basket for holding sticks, etc., is in reality a masked petrol can. Again, on one of the French Panhards in the Glasgow trials the wings were also utilised to carry baskets to hold spirit.

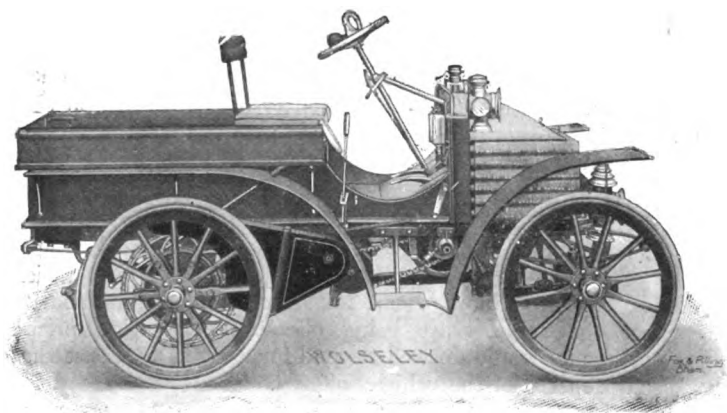
THE Agent-General for Victoria is having a special report prepared for his Government on the trials of heavy motors which took place recently in the Liverpool district. He thinks it might be found practicable to employ a service of such vehicles as a substitute for, or auxiliary to, light railways in some of the more thinly-populated districts of Victoria.

THE Clerk to the Bourne Guardians and Rural Council at a recent meeting read a letter from the Grantham Rural District Council, relative to the County Council being asked to frame by-laws for the regulation of all motor traffic on the highways. The Highways Committee recommended that the Council endorse the action of the Grantham Council, and pass a similar resolution, which was unanimously agreed to.

MR. SANDARS, of Lincoln, early this season bought a $4\frac{1}{2}$ h.p. De Dion voiturette exactly the same as that supplied to the Right Hon. A. J. Balfour. This car has proved so satisfactory that his brother, Mr. J. D. Sandars, of North Sandsfield, Gainsborough, placed an order for a $4\frac{1}{2}$ h.p. car of the same make, which has lately been delivered to him. Though Mr. Sandars has had very little previous experience, he drove the car about 500 miles the first week without the slightest trouble or accident.

THE E. R. Thomas Motor Company, of Buffalo, N.Y., is issuing an illustrated pamphlet descriptive of the Thomas motor-cycles and motors. First of these is the "Auto-Bi," of which a good account is given; also some useful hints to its users. The "Auto-Tri" follows, and is treated in the same way. Then comes an account of the Thomas motor, and the means used to convert an ordinary bicycle into a motor-bicycle.

AT Bow Street Police Court, last week, H. F. Lowe, described as an engineer's assistant, was charged on a warrant with obtain-



THE WOLSELEY 5-H.P. DELIVERY VAN WITH TOP REMOVED.

ing money by false pretences from Mr. Paul Hensel, of Rochester Row, a merchant. Mr. de Rutzen said, "There will be a remand, and I shall admit the prisoner to bail in his own recognizances of £100." Detective Bissill, however, stated that there were several other cases against the accused, and, after evidence of arrest, the magistrate remanded him in custody.

THE English Motor Club will hold a club run to Frensham, in Surrey to-day (Saturday), staying at the Pond House Hotel overnight. The start will take place from Westminster Bridge at 2 p.m.

LADY CURZON of Kedleston arrived at Aberdeen from Braemar on Sunday, and afterwards left for London. Her ladyship made the journey of sixty miles from Braemar in a motor-car.

WE learn that M. Marconi, of wireless telegraphy fame, has joined the ranks of automobilists, he having just placed an order with the Motor Manufacturing Company, Limited, for a Werner motor-bicycle.

THE Motor Mart, 108, Euston Road, N.W., has, for the convenience of callers, fitted up a notice board, on which may be seen all the latest entries to the Mart and the latest additions to its show rooms.

THE Bradford Motor-Car Company, of Belle-vue, Bradford, having just purchased a large number of Pieper voiturettes, have decided to offer the first dozen of the same at the temptingly low price of 105 guineas each.

PARIS is copying London's example in the way of a motor street-watering van, a De Dion steam-waggon having lately been fitted up for this purpose and used in the Avenue du Bois de Boulogne.

LADY ROSSLYN, who recently purchased a 6 h.p. Mors car from the Roadway Autocar Company, has become quite an enthusiastic motorist. She now drives the car herself, and expresses herself as being delighted with it.

WE understand that Colonel Holden has purchased, through Messrs. Friswell, Limited, a Koch heavy oil car for experimental purposes. The Erasmic Soap Company has also through the same channel purchased a Peugeot for advertising purposes.

AT the last meeting of the Wellingborough District Council the assistant surveyor reported as to the cost of motor refuse vans, and the matter was adjourned for presentation of designs and further particulars.

THE Collier Twin Tire, which has come so much to the fore lately, and for which the manufacturers claim the triple advantage of absence of punctures, burst tubes, and creeping, is now made in all sizes, from 26 by 3 by 3½ in. to 40 by 5 by 5½ in.

SEEING the new Dennis (Guildford) car passing along Oxford Street the other day, with Mr. Dennis driving, we hailed him and had a short ride. The car travels very smoothly and quietly, and with its *tonneau* body and long bonnet has a very graceful appearance.

SOME of the good people down Tunbridge Wells way are protesting, through the medium of the local Press, at the iniquitous practice of running public motor-cars on Sunday between Southborough and that town. The popularity of the service on that day, as well as other days of the week, proves that this view of the case is only held by a small and narrow-minded minority.

HAVING made special arrangements with the Peugeot Company with regard to the sale of their cars next year, Messrs. Friswell, Limited, of 48, Holborn Viaduct, have decided to hold a sale of the whole of the present stock of motor-cars, which includes Panhards, Mors, Benz, De Dion, etc. For immediate clearance the vehicles are being offered at tempting prices. Country agents would do well to send for a copy of the list that has been prepared of the vehicles offered.

"KILLARNEY and Round About" is the title of a little book written by Bella Sydney Woolf and Thomas Julian Goodlake, and published by Hodges, Figgis, and Co., Ltd., Grafton Street, Dublin. Although we should have liked to have seen some illustrations in the book, it is one of the most interesting productions of the kind we have ever perused. That the writers are appreciative can be seen from the very first pages, and the story carries one along so that one almost fancies they are participating in the trip described.

AT the last meeting of the Ilminster Rural District Council a communication was received from the Long Ashton Rural District Council asking the Council to pass a resolution in favour of restricting the pace at which motor-cars may travel, also that such cars should be licensed and carry a number front and back in figures at least six inches long. The communication was discussed and several members considered the pace of motor-cars should be further restricted; the Chairman, however, said he should like to see them go at sixty miles an hour!

MR. J. GRANT LAWSON, M.P., Parliamentary secretary to the Local Government Board, has been telling those present at the Easingwold Agricultural Show, that the motor-car industry should have "A perfectly fair field and no special favour. It would not be a bad idea," he gravely added, "if motorists were compelled to have their names and addresses on their cars, with a dial indicating the speed at which they travelled."

MESSRS. SHIPPY BROTHERS, inform us that they have appointed Messrs. A. R. Atkey and Company, Ltd., of Nottingham, their agents for the sale of the "Milwaukee" steam cars, the "Still" electric vehicles, "Ideal" storage batteries, "Diamond" tires and other American specialties supplied by them. Messrs. Atkey and Co. have a small electric parcels delivery cart on view in Nottingham, specially built for the express delivery of tradesmen's goods up to 2 cwt.

A MOST unfortunate illustration of the danger of "hanging on" to a motor was the fatal accident which befell Miss Leaver on Sunday last. The young lady was cycling at Shirley Wick, near Stafford, and holding a rope attached to the motor-car of her brother-in-law, Mr. Garnett Oswell, when the latter reduced speed to pass a vehicle. The slackened rope caught a pedal of Miss Leaver's bicycle, and when Mr. Oswell (unaware of this) quickened his pace, the sudden jerk threw the young lady heavily on her head, and her injuries proved fatal a few hours later.

THE Yorkshire Automobile Club will hold a run to Ilkley this (Saturday) afternoon, the arrangements being as follows:—Leeds members meet at City Square, at 2 p.m.; Bradford members meet at Manningham Park (Lister's monument), at 2 p.m.; Harrogate members meet at the Stray (Prince of Wales), at 2 p.m., and at 3.30 p.m., Leeds, Bradford, and Harrogate members unite at Burley, in Wharfedale cross-roads, before entering the village, proceeding from there to the Crescent Hotel, Ilkley. Arrangements for the return will be made en route. The last run, to Boston Spa, was most successful, six cars and nine cycles taking part, and as many members have promised to attend to-day's run, it is hoped that there will be a good attendance. It is again pointed out that these club runs are in no way fast runs, but purely for pleasure.

A MOTOR-CAR furnished by the Bradford Motor-Car Company, of the Drill Hall, Manningham Lane, Bradford, has lately returned from a month's tour through county Durham, the object of the tour being to advertise the *Yorkshire Post*. A start was made on June 18th for York, where two bill distributors, 10,000 fac-simile six-page of the *Yorkshire Post*, Mr. Warburton, of the staff of that paper, and the necessary portmanteaux, etc., were picked up. The object was to work the whole county of Durham with a house-to-house distribution of the fac-similes. A plan of campaign had been arranged, and on the morning of June 19th the work of distribution was commenced in Port Clarence, a distance of sixty miles from York. No record was kept of each day's run, but the total distance covered during the month was 780 miles; and it is sufficient to say that at the end of the month every town, village, and hamlet in county Durham had been visited. We understand that the proprietors of the *Yorkshire Post* are well pleased with the result of the experience with the motor-car as an advertising medium. We may add that throughout the tour the car was driven by Mr. J. W. House, son of the manager of the Bradford Company. Mr. House, jun., is only sixteen years of age, and has been away this season eleven weeks with motor-cars in various parts of the country.

MOTOR-CARS IN MILITARY OPERATIONS.



CAPTAIN R. S. WALKER, R.E., who is at present in Pretoria, and who was one of the senior observers in the 1899 Liverpool heavy motor-vehicle trials, has sent us the following account of his experience with a Locomobile steam-car, and the interesting work he has done with it:—"Several months ago, I noticed a Locomobile car at Cape Town, and, being struck with its simplicity and neatness, bought it, and took it up country with me, with a view to making some tests over bad roads, etc. Its first trip was over a rough course round Pretoria, specially chosen to find out defects before taking the car into regular use. Naturally, as the machine was not designed for this class of work, there were several. In about a month these had all been found out and remedied, and the car was in constant use, taking stores, etc., round the town and forts. It also performed some very useful work in visiting out-stations, where search-lights were either installed or wanted, and in this way nearly all the bigger towns in the Transvaal were visited. It was possible to go round all the likely positions for a search-light in one day, at every station, which frequently meant considerably over fifty miles of most indifferent roads—more than a single horse could have been expected to do—and the car generally carried two people on these occasions. The car was also used as tender to a search-light plant on a gun-carriage and limber, being utilized to fetch gasoline, carbons, water, etc., and also to run the dynamo for charging the accumulators, thus saving running the gasoline motor for this purpose. To do this, the trail of the carriage, on which was the dynamo, was lowered on to the ground, the back of the car was lifted up, one wheel being supported on the dynamo pulley and the other clear of the ground, two bolts being passed through the balance gear to jam it. On one occasion the car ran a 30 cm. search-light for an hour, driving a dynamo in this way. In consequence of this, a trailer has been made to carry a dynamo and projector for search-lighting in the field, but so far this has not been used. The trailer hooks into an eye fastened just behind the balance gear; a Maxim, Colt, or small ammunition cart, etc., could be attached to this same eye.

Undoubtedly the best piece of work done by the car, so far, was its trial trip with the trailer, when it blew up the mines at Klein Nek. These mines were laid some eight months previously, and had never been looked to in the interval. There had been several bad storms; the Boers and cattle had frequently been through the Nek; the latter had been on fire, and finally it was shelled with lyddite. The mines, eighteen in number, were found to be intact except two, which presumably had been fired by the heat of the veldt fire. All the insulation was burnt off the wires, and the battery was useless. It had been anticipated that a dynamo exploder would be inadequate to fire these mines, so a 2 h.p. 250 volt motor, which happened to be in Pretoria, weighing about 3 or 4 cwt., was placed in the trailer; a quarter of a mile of insulated cable, some testing gear, the kits of three men and their rations for three days, with a case of gasoline for the car, were also carried on the vehicle and trailer, and the whole left Pretoria one morning and trekked to Rietfontein. Two of us were mounted, the third drove the car. At Rietfontein we halted for the night, and started next morning with an escort through Commando Nek, round the north of the Megaliesburg, to near Klein Nek, where the road had to be left and the car taken across country through bush veldt. At the bottom, the going was pretty easy; only a few bushes had to be charged down and the grass, etc., rather wound itself round the wheels and chain. As the rise became steeper the stones became very large, and the car had to be taken along very gingerly to prevent the wheels being broken. A halt was made about a quarter of a mile from the top of the Nek, where the mines were situated; these were reconnoitred and the wire, etc., was picked up; that portion which was useless was placed on top of the charges and the remainder taken to the car. The dynamo was slid off the trailer, and the car backed against it; one wheel was raised slightly and placed against the dynamo pulley, which was held up to it by a man using his rifle as a lever; the other wheel was on the ground with a stone under it. The balance gear being free, the dynamo was excited without the other wheel moving, and the load being on for a very short time (i.e., from time of touching lead on dynamo terminal to firing of the mines) no harm could come to the car. When all the leads had been joined to the dynamo, the car was started, and after a short time, when it was judged to have excited, the second terminal was touched. A bang and cloud of dust resulted and the Klein Nek mine field had ceased to exist.

The day was extremely hot, and the work had not been light, so the tea, made with water drawn direct from the boiler, which we were able to serve round to the main body of our escort was much appreciated and washed down the surplus rations we dispensed with to accommodate the battery and wire, which we could not leave behind for the enemy. On the return journey we found this extra load too much for the car, and had great difficulty in getting up to Commando Nek, frequently having to stop to get up steam; these materials were therefore left at the first block-house, and the journey home continued in comfort. A second night at Rietfontein gave us a rest after our labours, and the third afternoon saw us on our way back to Pretoria. As luck would have it, a sandstorm overtook the car. The storm began by blowing the sole occupant's hat off, so, the two mounted riders being a long way behind, the driver shut off steam and chased his hat. In the meantime the wind increased and the car sailed off "on its own," and was only just caught in time to save a smash. Luckily the gale was in the right direction, for the fire was blown out, and it was impossible to light a match in the open. The car sailed into a poort on the outskirts of Pretoria, but we got a tow from a friendly cart through it, and then steamed home after the fire had been re-lit.

The car, as ordinarily equipped for trekking, carries the following:—Blankets, waterproof sheets, etc., etc., for two men; four planks for crossing ditches, bogs, stones, etc.; all necessary tools and spare parts; a day's supply of gasoline; a couple of telephones; one mile of wire. In addition on the trailer, if used for search-lighting:—One 30 cm. projector, fixed between trail; one automatic lamp for ditto; one dynamo—100 volts 20 amperes; two short lengths of wire; two pairs of carbons; tools, etc.

FURIOUS DRIVING CASES.



At Burnley Borough Police Court, Ernest Longford, a motor-car driver, was summoned for being drunk and disorderly. P.C. Greaves said that on the previous afternoon he saw the prisoner driving a motor-car in Westgate in a reckless fashion. Witness had to get assistance to take prisoner to the police station. Prisoner denied being drunk. He was fined 10s. and costs.

At Hailsham Petty Sessions, Arthur Leslie Bucknall, of Folkestone, was summoned for furiously driving a motor-car. It was explained that defendant was unable to be present owing to a pressing business engagement. The Clerk (Mr. Owen Langham): Well, this is a pressing engagement. The Chairman: We shall adjourn it for a fortnight for defendant's appearance.

In the Aberdeen Sheriff Court, a Frenchman, Emanuel Violleau, motor-car driver, lately residing at Invercauld House, was charged with having, on four separate occasions, driven a motor-car on Deeside at a greater rate than ten miles an hour, that being the regulation as to speed then in force. Accused did not appear, but Mr. Alex. Blacklaw, solicitor, said that he represented him. Evidence was given by a large number of witnesses, who spoke to the vehicle going at a rate of from fifteen to twenty miles an hour. The Sheriff said he thought the charge was proved, and a fine of £2, with the alternative of fourteen days' imprisonment, was imposed.

At the Ashford Police Court, Kent, Mr. Maltby and Mr. Greystone, both of Sandgate, were fined, in the first instance £5, and in the second £2 10s. Mr. Staplee Firth defended, and in the course of the evidence two constables, the same in both cases, swore that the defendants were travelling at 22½ miles an hour. The course was a measured one of a fourth of a mile. Before the cases were reached it was noticed the two constables were in communication with each other. The younger one pulled out a note-book, used a rubber, and then rewrote something in it at the dictation of the elder. When the cases came on the witnesses were ordered out of court, and the elder constable, when challenged, admitted that the other's report had been altered at his dictation. The junior, not knowing what had transpired, when in the box stated on oath that the note was made at the time of the alleged offence (September 14th), that he had not erased any part of it, nor altered it in pencil in court; neither had he discussed the subject with the other constable. We understand that a full shorthand note has been taken, and that further will be heard of the matter.

A NUMBER of well-known Coventry automobilists were summoned at Milverton, on Wednesday, for furious driving. They were Mr. Oliver Stanton, Mr. George Iden, works manager of the Motor Manufacturing Company, and Mr. H. W. Bamber, works manager of the Daimler Company. Mr. Staplee Firth, of London, appeared for the defendants. He entered in each case a plea of not guilty. The case against Mr. Stanton was first taken. Inspector Parkinson, stationed at Kenilworth, stated that on Saturday, August 17th, about half-past three, he was on duty on the Coventry Road in company with P.C.'s Mellor and Tolley, watching the road for a distance of a quarter of a mile, which he had measured previously with a tape. He placed Tolley in uniform at the end of the quarter of a mile nearest to Kenilworth. Witness and Mellor were at the other end in plain clothes. Defendant came by from the direction of Coventry. Witness, with a stop watch, tested the time, and defendant's car covered the quarter of a mile in 48sec., which was 18½ miles an hour. Mr. Firth cross-examined witness at some length with regard to the position of the quarter of a mile on the road. Asked where he was standing when he took the time, the Inspector said he stood thirty yards from the point where the quarter of a mile started. Asked whether he, with the other officers, had gone to look out for motor-cars on the day in question, witness replied in the affirmative. Police-constable Mellor gave evidence corroborating the main facts stated by Inspector Parkinson. Police-constable Tolley also gave evidence, and was asked by Mr. Firth: Inspector Parkinson put up his hand for you to stop the car, and then you waited until the car got to the end of the quarter mile before you stopped it. Witness: Yes. Mr. Firth: That being so, Inspector Parkinson signalled you before the quarter mile was finished? Witness: Yes. Mr. Firth contended to the magistrates that from this it was obvious that Inspector Parkinson had anticipated that he was going to stop the car whether it was going beyond the proper speed or not. Mr. Stanton, who was next called, said that on the day in question he was in a three-year-old Daimler car of 5½ h.p. The car was geared to go about 9½ or 10 miles an hour. Mrs. Stanton, who was on the car at the time, said she thought the car was going about the pace of a trotting horse.

This concluded the first case, and, without any decision being given by the magistrates, the case against Mr. Iden was proceeded with. The evidence was very much the same as in the last instance, the same three officers having timed the car. Inspector

Parkinson stated that the car travelled the distance in 45 seconds, which was equal to twenty miles per hour. P.C.'s Mellor and Tolley gave corroborative evidence. Mr. Iden said that he was driving a car that had been brought from Cardiff because the customer was not satisfied with it. From the sound he heard, he found that the induction valve had given way. The car was geared to eleven miles per hour. William White, employed at the Motor Manufacturing Company's Works, said he had driven this car from Cardiff because it was defective. They could only get up to a speed of about twelve miles at the best, and in the distance in question it was travelling at about eleven miles per hour.

The third case was that against Mr. Bamber, and the circumstances were similar to the last, as defendant was behind Mr. Iden's car. Inspector Parkinson said that the whole of the quarter of a mile was done in fifty three seconds, but the first eighth was done at the rate of twenty-five miles an hour. Mr. Firth objected to this latter statement being admitted as evidence. After P.C.'s Mellor and Tolley had been in the witness box, Mr. Bamber gave evidence. He denied that he was travelling at the speed stated by the Inspector, and added that the police officer put up his hand signalling him to stop about a hundred yards from the corner. Mr. Firth, in addressing the magistrates, remarked that Parkinson and Mellor had both got a stop watch. "We have got here," he added, picking up one of these, "a case with some wheels in it, and a spring or two, covered with possibly silver." There was nothing before them to show that this piece of mechanism did the work it was purported to do, and that being so it should be at once ruled out as evidence. Mr. Firth passed on to say that it was obvious from the evidence that the officers that afternoon did not intend to go back empty handed. They were full of zeal, and had got up this show of materiality in the shape of these stop watches. After directing attention to the fact that the Inspector stood thirty yards away from the starting point when taking the time, Mr. Firth asked if it was fair or reasonable that the police, evidently wanting something to do, should go out with an unworthy object such as had been shown that morning? The magistrates after a brief retirement, announced, through the Chairman, that they thought the police were perfectly right in what they did in view of the many complaints of the rate at which motor-cars were driven. The Bench had no doubt whatever that the cars in these cases were going beyond the twelve miles an hour, but they thought the objection must hold good that the watches had not been proved to be correct, and must give the defendants the benefit of the doubt. Mr. Firth asked to be allowed the expenses of some of the witnesses; but this application was somewhat sharply refused.

At Wolverhampton, Joseph Lisle, was summoned for driving a motor car at midnight along the Stafford Road at a greater speed than twelve miles an hour. Defendant and two other witnesses said the car was built two years ago, and could not go more than twelve miles an hour. The magistrates fined him 20s. and costs.

The police at Grantham and in the district have of late received many complaints in regard to the furious driving of motor-cars along the Great North Road. On Saturday week several police-constables were stationed along the road by Superintendent Cabaurn, with the result that four summonses were issued, and the case were heard at the Spittlegate Police Court on Saturday last, when Mr. H. Livesay, of Rotherfield, Sussex; Mr. F. Hutchinson, of Cambridge; Mr. Charles Cordingley, of London; and Mr. Marcus Illingworth, of Bradford, were summoned for infringing a regulation made by the Local Government Board under the Light Locomotives Act, 1896. In the case of Mr. Livesay, Police-sergeant Leach stated that defendant would be travelling from twenty to thirty miles an hour. Witness tried to stop him, and followed on a bicycle. Witness followed defendant to Doncaster, where he saw defendant, who treated the matter as a joke, and said he had not killed anyone. Witness told defendant he was a police-sergeant. Police-constable Gilbert said he timed defendant, who did a mile in two minutes. Thomas Tindall, farmer, of Louthorpe, said on the afternoon in question he met a motor-car, and had to pull his horse and cart off the road, or the defendant's motor-car would have run over him. The car would be going at over twenty-five miles an hour. Mr. John Carter, farmer, of Hoby Lodge, stated that he met defendant with a motor-car, which would be going at from twenty-five to thirty miles an hour. Witness had a young horse, and put up his hand for defendant to stop. Defendant did not do so, and the horse swerved round and just missed the motor car by less than a foot. Defendant refused his address. Superintendent Cabaurn said he had a letter from the London police, who stated that defendant had received three summonses for that journey. The police were allowed special costs, and the chairman said the magistrates thought it a very serious case, and defendant would be fined £10.—In the case of Dr. Hutchinson, Police-constable Bean stated that defendant was travelling on the 14th inst. through Long Bennington at the rate of over thirty miles an hour. Police-sergeant Holland corroborated the evidence of the previous witness, and said he had worked out the pace defendant travelled, and he was going at the rate of thirty-four miles an hour. Police-constable Duffin corroborated, and said defendant gave witness his name and address. Defendant told witness that he should not appear to any summons, as it was no use, as motor-car drivers did not get justice, and it was no use appearing. Police-sergeant Leach and Police-constable Gilbert also gave evidence. There were several previous convictions against defendant, and the superintendent of police (Mr. Caborn) said defendant went at the rate of thirty miles an hour after being warned by the police. Defendant was fined £10.—In the case of Mr. Cordingley, Police-constable Bean said he followed defendant, who only laughed at him. Police-sergeant Holland said defendant was

travelling at the rate of thirty miles an hour. Witness followed, and the car sustained a puncture, and had stopped at Gonerby Moor. Another witness stated that defendant was going at the rate of thirty miles an hour through Long Bennington village. Defendant was fined £10.—In the case of Mr. Illingworth, Mr. White pleaded "guilty to exceeding twelve miles an hour." Police-sergeant Leach stated that defendant was driving a motor-car through Colsterworth on the date in question, and would be going at from seventeen to twenty miles an hour. Police-sergeant Johnson stated that defendant arrived at Stamford at 7.15. Witness took defendant's name and address. Defendant had done the seventeen miles within the hour. Defendant went into the witness-box, and said his average was ten and a half miles an hour on the day in question. Mr. White addressed the magistrates for the defence, and defendant was fined £1. The Chairman remarked that this case was very different from the others.

MOTOR-CAR ON FIRE.

WHEN we ordered our Napier car, in November last, we desired to have both electric and tube ignition, but Mr. Edge declined to fit the latter on the ground that he did not want it ever to be said, "that one of his cars had ever been burnt up." Well, a Napier car has been burnt up, but let us say at once that it was no fault of the car, but might have happened to any motor-vehicle with either or both systems of firing. Mr. Clifton Sharp, an old amateur racing tricyclist, and a gentleman whom we have not seen for at least seventeen years, called on us on Tuesday last, and favoured us with particulars of the accident which occurred on Monday in the Uxbridge Road. He only purchased the car, second hand, about a fortnight ago, and had run several hundred miles on it, being very pleased indeed at the way it was going. On the evening of the mishap he had three Dietz lamps burning—one in front, and two at the sides. Discovering a leakage of petrol on the floor of the car, the driver, a skilled *mecanicien*, drove round a corner, and turned out front and near side lamps, leaving only the off side light burning—with the view of not attracting too much attention. Proceeding to investigate the cause, a sudden explosion took place, the burning Dietz lamp was blown away, and the flames leaped up the top to the petrol tank, which melted, and the car instantly became enveloped in flames. There were three passengers in the back seat, Mr. and Mrs. Sharp, son, and a lady friend. These instantly scrambled over the seats and jumped out; unfortunately, Mrs. Sharp, who is over sixty years of age, fell, and broke one of her legs. Two steam fire engines were soon on the scene and these "played" on the car for nearly an hour, the flames lighting the whole locality. The body of the car was burnt to pieces, as well as the rear wheels, tires, etc., and that which seems to worry Mr. Sharp most was the fact that he had just laid in a new stock of spare valves and other parts. These all disappeared, as well as tools, the firemen with their hatchets hacking and throwing away all they could get hold of. As fast as the things were thrown in the road, so the crowd scrambled for them, and it was only with difficulty the occupants of the car were enabled to ultimately escape in a four-wheeler. Our readers will be pleased to hear that Mrs. Sharp is making good progress towards recovery and is most anxious for her son to purchase another car, as she is looking forward to convalescence and when she will be able to be once more "on the road."

MORE LIGHT WANTED.

BEFORE the Richmond County Bench, Edward Talomonsene, of St. Pancras, was summoned for driving a motor-car without having the proper lights attached, as required by the Local Government Board. Police-constable Sangster proved the offence, which took place on the 8th of this month at Lower Richmond road. Defendant, who did not appear, told the policeman that he was experimenting with a new lamp, and was unaware that a red light was necessary.—Defendant was fined 20s. and costs.

At Llandaff, William H. Lownsborough, engineer, of Cardiff, was summoned for driving without lights. Defendant stated that he had one light, and that as he was riding a motor-cycle he considered that sufficient. The bench, however, ruled that the motor-cycle came under the definition of "vehicle," and imposed a fine of 5s., including costs.

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COMMENTS.

REGARDING the note on the question of the speed limit, which appeared in our last issue, we have received a number of communications, all in sympathy with our remarks, and our correspondents are of opinion that the time is now ripe for a vigorous agitation to be commenced for the total repeal of the speed limit. The industry has this year grown to a prodigious extent, and there are now many thousands of owners of motor-cars in Great Britain. We are convinced, from the rank and standing of these gentlemen, that no retrograde movement by the authorities will be successful. Much time and money has been spent by the Automobile Club in an endeavour to overcome the prejudices of the police and the local authorities, and while some good may have been done, yet on the whole we are inclined to think the demonstrations have not been universally successful. It therefore behoves automobilists to urge the matter forward and fight for their just rights, which are the same as those of other users of the roads. More or less than this is neither asked for nor desired.

Motor-Cars in "Greece."

It is announced that there is a project on foot for a public motor service between Athens and Thebes, which, if the historical characteristics of the Athenians persist, must afford them peculiar gratification. They could derive little but pain, however, from hearing the comment of a motorist, whom in mercy we refrain from naming, to the effect that the principal troubles to be expected would be from side-slip. "Why side-slip?" was incautiously asked. "Well, you see," was the rejoinder, "the cars will be running in grease the whole time!" And he escaped while someone was looking for a spanner.

Motor-Cars in the Army.

At a meeting of the Church Society for the Promotion of Kindness to Animals, over which the Hon. C. S. Rolls presided, it has been resolved to call the attention of the Secretary for War to the need of reform in the Army Veterinary Department. This is very desirable, but the society might have gone still further, and pointed out that some of the cost of that department might well be utilised in purchasing and maintaining automobiles. Horses will always be necessary in peace and war; but in the drawing of guns and the transport of ammunition and food for the army the motor-vehicle will have an important place in the near future. This will be an effective way of promoting kindness to animals by relieving them of what are burdens in ordinary times, and manifest cruelties on the field of battle.

A Week End Trip.

SATURDAY last being a lovely day for motoring the temptation for a run was too great to resist, and therefore we made up our minds, in the afternoon, for a short trip to Haslemere, with a view of spending the following day blackberrying. At Cobham, Mr. Harvey Du Cros, jun., on his

16 h.p. Panhard, was seen, but not another motor-car was met. At Godalming, a short stoppage was indulged in—both with the object of having a cup of tea and learning the reason for the liberal display of bunting. It was soon ascertained that Baden-Powell had visited the town for the purpose of laying a foundation stone at Charterhouse Schools.

Baden-Powell and Motor-Cars.

We learnt afterwards that the local volunteers were paraded outside the railway station and that the crowds had intended taking the horses out of the carriage and pulling the General through the town. Great, therefore, was the chagrin of the inhabitants to find that their guest had passed them, escaping unnoticed on a motor-car. The Hon. C. S. Rolls had driven the distinguished defender of Mafeking down from London on his 20 h.p. Panhard, and, if report speaks true, a fairly speedy journey was enjoyed. The General, however, is a sportsman, and, rather than disappoint the crowd, "moted" in procession to the station and back, after the ceremony, proceeding to Cranleigh.

Preferred Motor-Car.

MAJOR-GENERAL BADEN-POWELL, like all who have once tasted the delights of motoring, has set his heart on having a car and has expressed his intention of taking one back with him to South Africa. As our readers are aware, the popular hero has been receiving presents of all sorts and kinds from various committees in different parts of the kingdom, and these gifts, of course, are greatly appreciated. In a recent instance, however, on the occasion of a presentation to him of a valuable chronograph, the General, while thanking the Committee, asked whether it would not be possible to change the article for a motor-car. Unfortunately the change could not be effected.

Hindhead, Frensham, and Winchester.

WHILE pursuing our journey to Hindhead, the sound of a "pip pip" was heard, and Mr. Mayhew, on a 20 h.p. Panhard, passed by. Amongst the passengers we noticed Captain Lindsay Lloyd, who is Secretary to the War Office Committee, organising the Mechanical Traction Trials. The trials, we understand, will take place in the vicinity of Aldershot, and the Captain was then on duty surveying one of the routes. The previous Thursday the Hon. J. Scott Montagu, in company with the County Surveyor, had driven him over some of the routes in Hampshire. This latter car, a 24 h.p. Daimler, seemed to take the Captain's fancy, and we hear he has declared it to be one of the smartest running motor-cars he has yet travelled on, the running being more like that of a locomotive rather than of an explosion engine. At Hindhead, we found both the Huts and Beacon Hotels full up, and therefore proceeded to Frensham Pond, where a number of the members of the English Motor Club had assembled. Mr. Edge had driven down on his 50 h.p. car. All the rooms in this hotel being engaged, after a short stoppage, we proceeded on our way to Winchester, which interesting city was our headquarters till Monday.

Hop Pickers.

THE return journey to town was performed in the same beautiful weather as the preceding days, and until the Hog's Back was reached nothing of note occurred. The "hopping" must evidently have finished on the Saturday, for the roads round and about Alton and Farnham were crowded with "pickers." Some of these were on foot, carrying their utensils, some with barrows, others in caravans and carts, but all having a mighty following of children in various stages of raggedness. The women, with their tanned faces, gaudy colours, and black clay pipes, seemed amazingly happy, and while the men walked together the vehicles were allowed to wander as they liked all over the road. All, however, were good tempered. They waved their hands and cheered, but left the horses to get out of the way at their own sweet will and at such speed as they felt inclined.

Ballooning and Motoring.

ON the Hogsback Mr. and Miss Butler were met, with their Renault car, and in conversation we learnt they were on their way to Aldershot for the purpose of indulging in another balloon ascent. They had been making their headquarters recently at Shere, in Surrey, and the previous day had been entertaining quite a party of motorists, including Mr. Mayhew, Mr. Rolls, and Mr. and Mrs. T. B. Browne, the latter driving a small Renault, etc. Many of the riders in coming down from London had suffered from punctures, and through these luncheon was delayed two hours. The weather had come over very dull, and as there was but little wind about, we rather fancy the aeronauts must have had a poor trip. Lunching at Guildford, we duly reached home without incident or puncture, our Napier having travelled like the good car she is.

Running the Blockade.

MOST Londoners are aware that vehicular traffic is not allowed to cross the Horse Guards Parade. Only the sovereign himself, members of the royal family, and other privileged persons, including, of course, members of the Government possessing passes signed by the sovereign, are permitted to drive through the historic archway. Sir Francis Jeune however, recently ran the blockade. Stopped the other evening whilst riding with Lady Jeune in his motor-car in the direction of the Mall, the President of the Divorce Court, who did not happen to have the King's pass with him, produced his card, and having thereby established his identity was allowed to proceed without further let or hindrance. The only other man who ever attempted the passage without authority was Earl Russell, who once drove his pair of greys through the archway, in spite of a determined effort to stop him.

Motor-Cars for Irish Farmers.

A SUGGESTION from Birmingham that motor-cars should be used to collect milk from the farmers within a radius of twenty miles from the Midland town and retail it to the artisans, thus doing away with the middleman's profit, is worth consideration by those responsible for the development of the creamery movement in Ireland. In many Irish districts the farmers are now taking their milk to central creameries or butter factories, where it is made into the finished product. If the managers had motor-cars at their disposal the milk could be collected very quickly, and the employment of thirty or forty horses by the individual farmers would be obviated. This system of co-operation has been successful in 400 or 500 districts; its extension to the collection of the milk by motor-car would promote economy, and find an outlet for a large number of cars. We would suggest that those engaged in the motor-car industry in Ireland should bring the matter to the notice of the Department of Agriculture at Dublin.

The Scottish Automobile Club.

THE West of Scotland section of the Scottish Automobile Club have been considering the question of non-stop runs, but, in view of the recent Glasgow trials, they think it hardly necessary to have such on an early date. They have, however, tentatively arranged to have a non-stop run from Glasgow to London prior to the Automobile Club's Show next year, and this will be preceded a month or so earlier by a shorter run of a similar character north of the Tweed. While these may be more specially intended and suited for Scotch manufacturers, they will be open to manufacturers everywhere and to private owners, and we fancy that a successful non-stop run from Glasgow to London will induce special interest in the competing cars when on exhibition.

Unattended Horses.

WE would enter a protest—not for the first time—against the folly of those tradesmen who allow their horses and carts to be in charge of careless lads, who frequently leave the vehicles unattended outside public-houses; or who have to leave them outside houses while delivering goods. Left thus to themselves, horses occasionally display bad temper when motor-cars or traction engines or even tramcars approach, and then the owner blames everybody but himself. If special care is to be taken with regard to leaving motor-vehicles in charge of competent persons, far greater trouble should be taken with regard to animals that are liable to run away on the least provocation. This is a matter the police ought to see to—when they are not engaged in laying traps for unwary motorists.

Unjustifiable Police Interference.

MR. S. F. EDGE has brought to our notice another unjustifiable case of police interference. It occurred at Caterham the other day. He was driving with a friend on the latter's motor-car, which was pulled up at a shop in Caterham. Mr. Edge was sitting on the car, his friend being inside the shop, when two constables—one in plain clothes and one in uniform—came up and informed him that he had no red lamp on his car. As it did not happen to be Mr. Edge's car, he listened to all that they had to say. A large crowd having gathered, the police then asked Mr. Edge for his name and address, which he gave them, assuming that it was for some useful purpose. On the friend learning of the occurrence, he thought it would be as well to find out really what was the matter. So they drove back to the two constables, whose only excuse for taking Mr. Edge's name and address was so that they might have it in case he did something again! They did not suggest that anything illegal was being done at the time as it was not even lighting-up time. Mr. Edge wrote to the police superintendent of the district, placing the facts of the case before him. We are glad to learn that after making enquiries into the matter, the superintendent has offered his apologies for the behaviour of the two policemen, and that the latter have been severely reprimanded for their officiousness.

Speed of Motor-Cars in Scotland.

AT a meeting of the Standing Joint Committee of the County of Aberdeen, a letter was read from Mr. H. D. McCombie, Milton of Kemnay, drawing attention to the excessive speed of motor cars on the public roads, and suggesting that action might be taken with the view of controlling the speed of these vehicles. Major Gordon, Chief Constable of the county, pointed out that his officers had already been instructed with regard to this matter, and only the other day a motorist had been convicted and fined £8 for driving at an excessive speed. The owner of the car informed him that he was sending his vehicle back to France, as it was of no use to him unless he could drive at a greater speed than twelve miles an hour. The matter was an

exceedingly difficult one to deal with, as it was not always easy to say whether a motor-car was going beyond the regulation speed of twelve miles an hour. His instruction to his officers was to use their discretion as much as possible and not to press a case even though the speed did seem to be a mile or two over the regulation pace, if the car was on a clear roadway with no apparent risk of danger, but to at once take steps to prosecute if there was evidently excessive speed within a populous area. Sheriff Robertson said it would perhaps scarcely do for him to express an opinion in the matter, seeing prosecutions for driving at an excessive speed fell to be dealt with either by himself or his colleague, but if he were pressed for an opinion he would be inclined to agree that the matter was one upon which considerable discretion might be exercised.

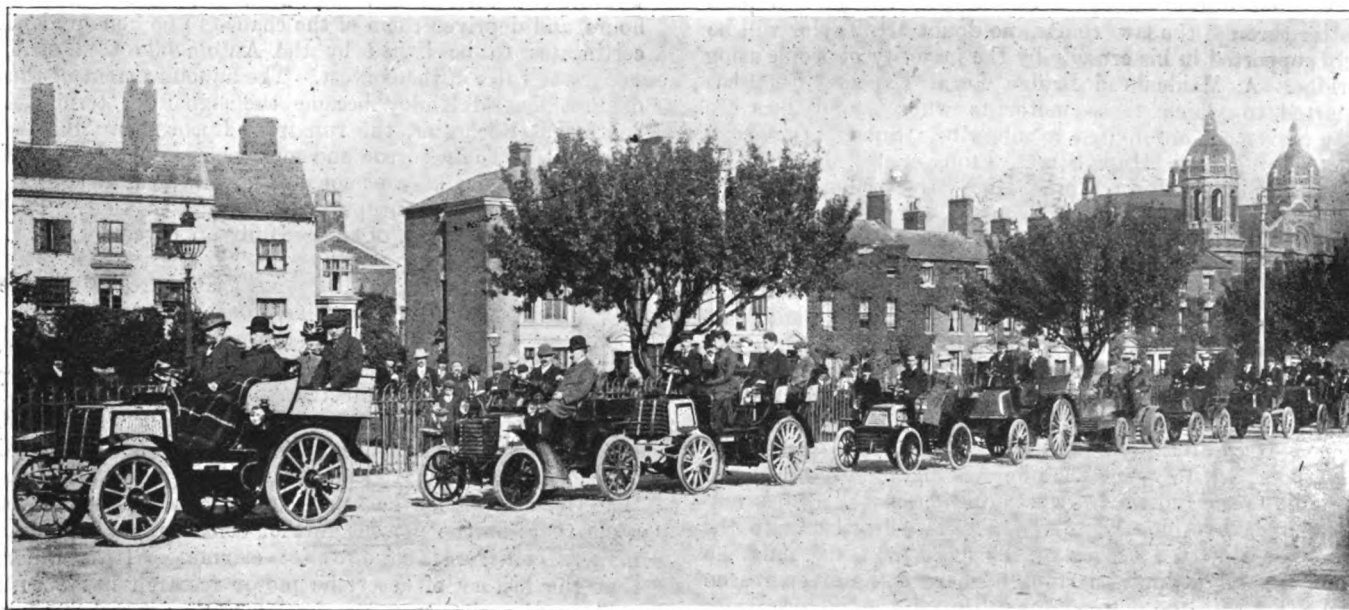
Absurd Blackpool.

BLACKPOOL — before it possessed its modern electric trams—had such practical evidence of the value of the motor-car that recent proceedings in the town seem very absurd. A northern soap firm intended to take a trip with several thousand people to Blackpool, and sent a motor-car a few days previously. It was not allowed in the streets, because it was an advertising

were the only dogs thus possessing any attention. With regard to passing traffic, Mr. Rouse complains that drivers of heavy horse-drawn vehicles have a habit of keeping on the crown of the road, instead of to their proper side. This is a nuisance often noticed by motorists, and one which the police should minimise by insisting that all traffic should adhere to the rules of the road.

The Folly of Canterbury Councillors.

CANTERBURY is an ancient city, and, judging by the discussion at the last meeting of its local Council, some of its Councillors are of an antique order of thought. Councillor Bourne suggested that the provision of marked distances along certain main roads would be useful in enabling the police to gauge the speed of cars, and Councillor Stone went further, declaring that the Council should stop all motor-cars coming into the town. This idea was toned down by Councillor Goulden, who referred to the difficulty of identifying the drivers of motor-vehicles, and urged that, on entering the city, they should be required to give in their names and addresses at Westgate Towers. Fortunately, the Mayor was more sensible than Councillors



MESSRS. BAMBER, IDEN, AND STANTON ON THE WAY TO EXECUTION. (See last issue.)

car, and as such was forbidden by the bye-laws. The managing director of the soap company told the police it was necessary to have the car in Blackpool on the day of the trip as an office of inquiry and to issue tickets to people who had lost theirs. It was again sent to Blackpool—this time at night—and between five and six o'clock in the morning was sent to a place provided inside the Central Railway Station. As the driver stood with the car in the morning he was served with a summons, and although the Bench took a reasonable view and dismissed the case, the man's time was wasted with such paltry and vexatious proceedings. All this seems very absurd, and certainly unworthy of a town which provides for its patrons in the liberal way that Blackpool has already done.

A Ride to Felixstowe.

MR. J. W. ROUSE, of Arcade Street, Ipswich, has been describing in the local papers a ride he recently had from his own town to Felixstowe on a Teras car belonging to Messrs. Botwood. He testifies to the complete indifference of the horses they passed to the motor-car, and also to the way in which collie dogs ran out to bark at the vehicle. Apparently the collies

Stone and Goulden, and after he had pointed out the absurdity of the idea the matter dropped. But that such a proposal should have been made is significant of the narrow-minded attitude of some municipal leaders with regard to automobilism.

Maidenhead Bridge Tolls.

MR. JOSEPH TAYLOR, of Eton, has set himself the task of freeing Maidenhead Bridge from toll. It may be remembered that last year a Slough motorist declined to pay eightpence toll for the passage of his motor-car over the bridge, which is supposed to belong to the Maidenhead Corporation. The toll collector thereupon seized a cushion, which he disposed of the next day for three shillings. Out of this arises the present agitation, and Mr. Taylor, after due inquiry and probing into the matter, has submitted the case, through his solicitor, to the eminent counsel, Mr. J. G. Witt, K.C., and Mr. W. O. Danckwerts, K.C. Their opinion causes the matter to assume a new phase: that the bridge does not belong to the Maidenhead Corporation, who, on the 1st August, 1836, ceased to have a right to administer the funds of the bridge; that the administration ought to have passed to trustees appointed upon petition by the Lord Chancellor; and that there-

fore the first thing to be done is to direct the attention of the Charity Commissioners to the matter for the purpose of having trustees, if necessary, appointed to administer the trust, and of having an inquiry into the true position of such trust. Maidenhead Bridge was rebuilt in 1772 because the old wooden bridge was rotten. By Act of Parliament nineteen thousand pounds were borrowed on loan, yet since that time it is alleged that something like one hundred and twenty thousand pounds have been received in tolls, while apparently the original debt has never been paid off.

Action to be Taken.

MR. TAYLOR has forwarded the above opinion and particulars of the matter to the Maidenhead Corporation. At the same time, the Corporation has been informed that in the event of their answer not being favourable to the freeing of the bridge from tolls, an influentially signed petition will be immediately presented to His Majesty's Charity Commissioners, with an urgent representation that they shall exercise their legal right, and assume possession of the "Maidenhead Bridge Trust," which has for so many years been antagonistic to the public interest under corporate control. It will be interesting to see what will be the action of the Maidenhead Corporation in the face of this new development, but should it be necessary to push the matter through the law courts, no doubt Mr. Taylor will be strongly supported in his crusade by the majority of people using the bridge. A Maidenhead Bridge Legal Expenses Fund has been started, to which those motorists whose sympathies are with the movement are invited to subscribe. Subscriptions may be sent to Mr. Taylor, High Street, Eton, or to Mr. J. Fulbrook, of the Slough Motor Works, High Street, Slough.

One Good Result.

IT is stated that a combination of Liverpool shipowners are seriously contemplating the organisation of a motor-wagon service between that city and Manchester. The inability of the railway companies which connect the two cities to deliver goods with anything like the despatch necessary has long been a prolific source of complaint to both shipowner and consignee. Naturally, the recent trials held in the locality by the Liverpool Self-Propelled Traffic Association were watched with keen interest, and the present agitation is the direct outcome of the good results then obtained. Two drawbacks to the success of the projected service are the speed limit, five miles an hour, and the weight limit, six tons. There is, however, reason to believe that with the more frequent use of the motor-car for commercial purposes these restrictions may be withdrawn.

A Public Service at Tunbridge Wells.

A NEW motor-car company has recently been formed in Tunbridge Wells for public service, and also for the purpose of running excursions to the surrounding picturesque districts. The cars used are supplied by the Motor Manufacturing Company, Coventry, and are of the wagonette type. Up to the present the service appears to be a very popular one, and it is intended as time goes on to add to the present number of cars, and thus supply a long-felt want to the public. Ample accommodation has been found for workshops and yards, and under the management of Mr. C. Allen, a leading local tradesman, to whose enterprise the service is due, a considerable measure of success is looked forward to.

Yorkshire Automobile Club.

ON Saturday last the Yorkshire Automobile Club held a most successful run to Ilkley. The Harrogate, Leeds, and Bradford members met in their respective districts at 2 p.m., and then proceeded to the general rendezvous at Barley in Wharfedale. The weather being favourable and the roads dustless, the magnificent scenery passed through was fully appreciated. Tea was arranged for 5.30 at the Crescent Hotel. The following members and friends took part:—Mr. T. E. King (Vice-

President), Century tandem; Mr. and Mrs. Barnes, De Dion phaeton, of Harrogate; Messrs. Benbough and McLean, Bollée, of Ilkley; Messrs. Faires and Chadwick, De Dion voiturette; Messrs. Ladmore and friend, Daimler car; Mr. George Firth and friend, quad; Messrs. Hay (Honorary Treasurer), Jones, Berry, Broadbent, and McGuire, all on tricycles, of Bradford; Mr. and Mrs. Burrows, Star car; Mr. Ibbotson and friend, Daimler car; Mr. Martin and Miss Mehew, tricycle and trailer; Messrs. Neumans and Walker, quad; Messrs. A. W. Dougill (Honorary Secretary), H. Noble, Burrows, jun., R. Smith, F. Normanton, and W. Bradley, all on tricycles, of Leeds; and Mr. Wood, Wolseley car, of Halifax.

The American 500-Mile Endurance Contest.

AFTER a trial of severity surpassing by far any test that anyone would ever think of imposing upon horseflesh and conveyances drawn by animals, forty-one motor-vehicles arrived within schedule time at Rochester, N.Y., on the evening of Friday, September 13, out of a total of eighty-one which started from New York on the previous Monday. Several vehicles arrived later, after the control had been closed, and many more might have arrived if their occupants had not considered it wise to abandon the tour when the adversities of the bad roads and weather encountered had caused them to fall behind schedule hours, and deprived them of the chance to be honoured with the certificates to be issued by the Automobile Club of America under the rules of the contest. The announcement of the death of President McKinley became the signal for terminating the contest at Rochester, the run from Rochester to Buffalo being abandoned. To the sorrow and consternation over the President's death thus came keen personal disappointment to several of the contestants over the abrupt termination of the tour. The Club's decision was, however, of course, fully approved.

Calcium Carbide.

IT appears that there is an acute crisis in a manufacture with which most motorists are more or less indirectly concerned—we refer to the calcium carbide industry. To relieve the minds of those who are fond of nocturnal excursions, we hasten to explain that there is no danger of a "corner" in this article, the fact being that production has gone on at such a rate that Germany alone has stock enough to supply the world for some years at the present rate of consumption, and the home makers consider their prospect alarming. It is unfortunate that the history of acetylene motor research has been such a chapter of accidents, as if the difficulties—which are certainly numerous and formidable—could be overcome, a cheap and powerful source of energy would be available, which would, in all probability, find an important field of utility in automobilism. But to this the uncertainty and risk attending the combustion of acetylene mixtures under pressure have offered a hitherto insuperable objection.

Test of Reliability.

A MOST successful run just completed by a 6 h.p. Daimler wagonette, belonging to Mr. F. Morriss, of King's Lynn, is yet another testimonial to the reliability of the motor-car. The vehicle in question was chartered by a party of six gentlemen for a tour to Scotland and back, which journey it performed without the slightest hitch, covering something like 1,400 miles in a fortnight. Travelling *via* Leicester, Manchester, Preston, Lancaster, Carlisle, and on to Glasgow, the car encountered some of the steepest and longest hills in the country, including the notorious Teddington Hill and Shap Fell. The party arrived in Glasgow in four running days from the time the car left Mr. Morriss's depot. Two days were spent in Glasgow, during which time a detour was made to Loch Lomond. The journey was then continued to Stirling, Edinburgh, Galashiels, Newcastle, York, and home, the passengers arriving well pleased and astonished with the trip, and also assured of the possibilities open to the motor-car.

THE "DERBY" MOTOR-BICYCLE.

A MOTOR-BICYCLE which has lately been put on the English market, and which comprises some novel features, is the "Derby," introduced by Messrs. Edward De Poorter and Co., Ltd., of 9, Great Tower Street, E.C. The motor is of 1 h.p., and is carried in the frame, being clipped to the lower cross tube and to the main down tube. The silencer, which is rather larger and longer than usual, so that the motor runs very quietly, is fitted below the front tube, and well out of the way. The battery and induction coil are carried immediately behind the backstays, and beneath the saddle. A throttle and timing handle are conveniently placed on the upper tube of the frame, while the mixture is regulated at the forward end of the petrol tank and carburettor. The usual handle-switch is fitted. The motor, which weighs a little over 20 lbs., is very neatly finished, having an air-cooled cylinders, and oil and dust proof aluminium crank cases. The carburettor and petrol tank are combined in one case clipped to the top tube of the frame. The tank is made large in order to carry a sufficient quantity of petrol (about one gallon) for ordinary journeys (120 miles) without the use of an extra supply tank. A radical departure from all other motor-bicycles is to be found in the method of driving adopted. Hinged to a clip, which can be slid on the main down tube for chain adjustment purposes, is a bell-crank of large size, the forward arm of which forms a handle, and is held in any required position by means of a ratchet on the side of the petrol tank. The rear arm carries a rubber-shod pulley, grooved to fit over the tire of the rear wheel. This pulley is driven by means of a chain acting on a toothed wheel fixed at the side of the pulley and another upon the motor shaft. The pulley runs at practically the same speed as the motor. When the handle is pushed forward, the pulley is raised clear of the tire of the wheel, but when the lever is pulled backwards it is brought into more or less forcible contact with the tire, according to the position of the handle. By this arrangement the motor can be thrown out of gear when the machine is descending hills, and instantly brought into action again by pulling the handle backwards. The pulley appears to obtain a good grip of the tire, and Messrs. De Poorter state that they can, after very long experience and tests, certify that there is no extra wear on the back tire. In addition to complete machines, the firm are also supplying the motor and driving gear separately, to enable cycle makers to build up motor-bicycles themselves.

CONGRATULATIONS to Colonel Crompton on receiving his C.B., and to Captain Laycock, who served on General French's staff, his D.S.O.

ONCE more we warn motorists of the inducement to theft offered by their leaving coats, rugs, and the like on unattended cars. Last week a man was committed for trial for just such an offence, and a Beckenham gentleman who left his motor-car unattended whilst he entered an hotel is the poorer by a rug and an overcoat.

THE EYES AND MOTORING.

IT is essential that anyone driving a motor-car should be able to see in comfort, for there is nothing more annoying, or painful, than at a critical moment to get a fly or dust in the eye, which simply has to be borne until one can pull up. In order to enable one to do so there are various contrivances on the market, and I should like to give my experience of those that I have used to intending purchasers, as I consider some of them are injurious to the eyes. The first pair of glasses I used, writes "A. C. M." in the *Gazette* of the Reading Automobile Club, were an ordinary blue tinted pair, with fine wire gauze at the sides; they were fairly satisfactory, with the exception that at times flies would crawl under them and walk about on the inside of the glass. There was also a continual side draught through the wire gauze across the eyes, which made them constantly water, and was very trying.

The next pair were of talc, and the result was after going a journey or wearing them for some time I always had a headache, due entirely to the fact that the contour of the talc was not perfect, the strain on the eyes to focus through them producing the headache. There is also a celluloid mask on the market which has the same defect as talc, with the addition that it is not so transparent. The pair I am using now have large smoked tinted glasses with a silk mask attached to the rims, and I believe they are as good as anything at present to be obtained; the only objection to them is in driving in a strong wind the silk is apt to flap about.

I find that after a journey there is nothing more beneficial to the eyes than a basin of clean water. Place the head face downwards in the water, and then open and shut the eyes a

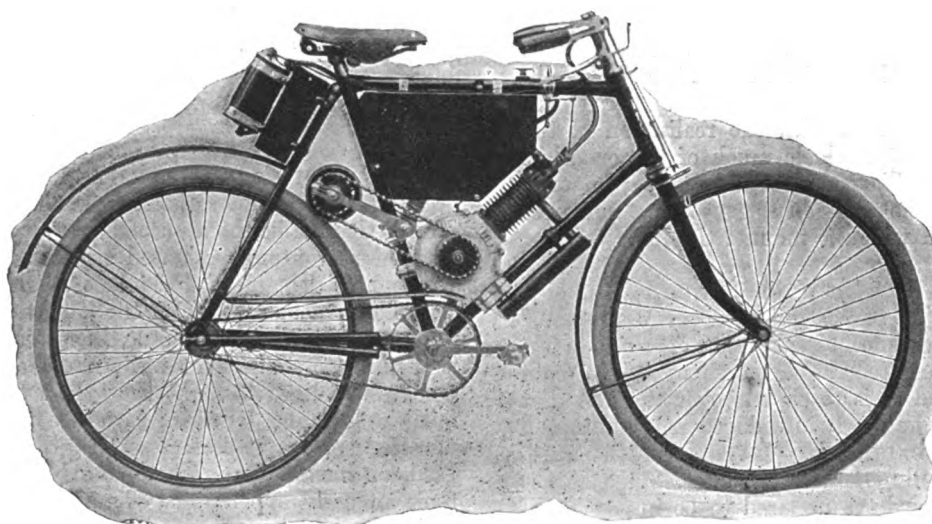
few times; in the majority of cases it removes any dust or foreign particles and also has a bracing effect on the tissues of the eye.

MESSRS. FRISWELL, LIMITED, have opened a new department at 48, Holborn Viaduct, which will be devoted to the re-painting, re-plating, "brassing," and generally doing up of motor-cars.

THE Houk Automobile Company, Limited, has been registered, with a capital of £10,000, to carry on in the United Kingdom or elsewhere the business of cycle, motor-car, and general manufacturers, engineers, etc.

THE first of the new motor char-a-bancs ordered by a Scarborough syndicate arrived, after a successful run by road from Northampton, last week. On Monday the vehicle, which is of 12 h.p. and seated for fourteen passengers, made some trial trips of a most satisfactory nature, vanquishing all the local hills, one of which is 1 in 8, with the greatest ease.

MR. R. M. WRIGHT, of Lincoln, who had with him as travelling companion Mr. A. F. Percival, has recently completed a thousand mile tour on a 4½ h.p. De Dion voiturette to Glasgow, Edinburgh, and back, taking in en route many places of interest. Mr. Wright gives a most enthusiastic account of the tour throughout, the scenery, and the conduct of his car.



THE "DERBY" MOTOR-BICYCLE.

FLOTSAM AND JETSAM.

BY "FLANEUR."

DURING the absence of King Edward abroad, the regularity with which he used his English-built motor-car was duly chronicled from day to day, to the satisfaction of all his brother automobilists. One salient factor in the situation, however, has been ignored, and it is of vital interest now that His Majesty is back again in our midst. That the King loves his car is self-evident; he would not have had it specially deported from England, and used it daily while at Homburg and Copenhagen, had the case been otherwise. Why, then, should the car be less in evidence in Great Britain than abroad? The answer is to be found, I fear, in the fact that the King has accurately appraised the innate conservatism of the British public, and realised its inability to accept wholesome changes without the most careful propitiation of its scruples and prepossessions.

So far as London is concerned, the use of the royal car has been confined to quiet runs to Windsor and back. The same measure of publicity, however, as has characterised His Majesty's automobile journeys while abroad would, it need hardly be said, do much to encourage the pastime and industry in this country, and English automobilists cannot but hope that, on the King's return from Balmoral, he will afford the citizens of the Metropolis the same degree of pleasure as that which he has already liberally accorded to those of Homburg and of Copenhagen. For it may be said now with confidence that with the realisation of the practical capacities of the motor-vehicle much of the erstwhile prejudice of the public has disappeared, and those who once derided the appearance of a motor-car in Regent Street now note with pleasure the ease with which it mounts the hill.

THE *County Council Times* has again delivered itself of a frothy editorial on the subject of "Regulations for Motor-cars," and, as in a former instance, when I called attention to its vapourings, has violently misrepresented the facts at issue. The main object of the organ referred to is to chortle over the fact that racing cars in France, by the newly-introduced regulation, will have to carry a distinctive number. "What will the automobilists say now?" gleefully enquires the *C. C. T.* "This is precisely the regulation they have declared to be impossible of adoption if motoring is to make headway in this country; but, in spite of their protests, we shall be surprised if we do not shortly follow the example of our friends on the other side of the Channel." Surely even a schoolboy could expose the fatuity of this painful drivell. Like all other shriekers on the subject of automobile travel, the *C. C. T.* draws no distinction between the high-powered car, built purely for speed purposes, and the ordinary motor-car of moderate power and price. The two types are as distinctive as are the racehorse and the carriage hack. If the self-appointed spokesman of the County and other Councils had any practical acquaintance with the progress of automobilism in this country it would know that the number of the high-powered type is extremely limited; indeed, almost everyone is known by repute among those who are familiar with current automobile topics. Yet the whole trend of the hostile argument in question is to make it appear that these fast cars, and recklessly driven fast cars, are ubiquitous, and a lurid picture of their devastating progress is drawn in a way that is ludicrous in the extreme.

FOR example, it is seriously alleged, in set terms, that among incidents of automobile traffic "of almost daily occurrence" are "London to Lincoln at over sixty miles an hour"; "running over pigs, dogs, and poultry"; "causing serious carriage accidents," and so on. So far from the journey from London to Lincoln being covered at "over sixty miles an hour," there is not a car in England, nor in Europe, that could accomplish the

feat, unless the course was kept throughout by the police. Fancy working through North London at that pace! As for running over pigs and dogs, if there is anything the driver of a motor-car would less willingly do than that one would like to know it, even if we assume, to please the *County Council Times*, that the said driver was entirely destitute of humanitarian feelings. He might at least be credited with a desire to save his own neck, and he would indeed be a fortunate automobilist who could run over a pig and still maintain his control over the steering; in fact, the pig would have a strong chance of escaping serious injury with a pneumatic-tired car, while the probability of the driver being seriously hurt, if not killed outright, is the opposite of remote. The further allegation that "serious carriage accidents" are matters of almost daily occurrence through the instrumentality of the motor-car is in flat violation of fact, and wholly incapable of proof. When a horse takes fright at a motor-car, it is coolly assumed by people of the parish council standard that the car, and not the vice of the animal, the unskillfulness of its driver, or the untrained condition in which it has been put into harness, is entirely to blame. But, even if it be admitted, for argument's sake, that every time a "serious carriage accident" occurs in connection with the meeting of a motor-car, the automobilist is at fault, the attempt to prove that such catastrophes were "of almost daily occurrence" would miserably fail. The *County Council Times* has a good deal to learn as yet on automobile matters, and apparently others also. "Hasty generalisation" has been defined as "the bane of science"; but papers of the *County Council Times* description show that it is the bane of journalism as well.

A FRENCH contemporary has let itself loose in rapturous praises of the ingenuity of M. Boyer, the maker of the well-known cars of that name, because of his resourcefulness the other day when his petrol tank was found to be nearly empty while ascending a steep hill. The method which M. Boyer adopted, and which has so excited the admiration of the journal in question, was simply to turn the car right round, thus shifting the position of the remaining petrol in the tank, and drive up on the reverse gear. One would have thought that the expedient referred to was fairly well known by now; certainly it was adopted over twelve months ago by at least two English *chauffeurs*. Mr. Alfred Bird, of Birmingham, when he acquired his 12 h.p. Panhard, took an early opportunity of testing it on Sunrising Hill, up which he had vowed to take a car or know the reason why. The Panhard went up merrily enough for some distance, and then stopped, with that well-known abrupt cessation of power that implies an interrupted flow of petrol. Examination showed that the gradient was so severe at the point of stoppage that no petrol was passing into the carburettor, but by facing the motor downhill the car went up gaily enough on the reverse. I understand, too, that Mr. S. F. Edge once employed a similar expedient with a Napier car. M. Boyer, therefore, however subjective his ingenuity in this matter, can scarcely claim not to have been anticipated.

It seems only a week or two ago that one read of the Queen of Italy having prospectively become an automobilist by ordering a 12 h.p. car from France. Either the order was placed some time ago or the car was secured at once, for the King and Queen have been touring *en automobile*, and their doings have been pictorially chronicled in the Italian press. While in Italy of late I noticed in successive issues of the leading illustrated weekly a frontispiece depicting the royal pair, in one case being stopped at the French frontier, and in the other sharing an *al fresco* luncheon with a peasant. As the car was of French origin there was no duty to pay, otherwise the *douanier* would doubtless have been considerably startled, when making out a certificate of importation, by the answer to the preliminary query of "*Quel nom?*" The number of royal automobilists, by the way, is now so numerous that there is hardly a reigning house left in Europe which does not include a prominent *chauffeur*.

CORRESPONDENCE.

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THE CYCLE MANUFACTURERS' TRADE PROTECTION ASSOCIATION.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I am surprised that the Cycle Manufacturers' Trade Protection Association should continue to attempt to upset the decision that motor manufacturers and agents have arrived at—to have nothing to do with the proposed amalgamation with the cycle trade, and to adhere to their determination, to which they are pledged, to hold only one motor-car show annually, and that at the Agricultural Hall. Nearly all the principal motor manufacturers and agents belong to the Automobile Mutual Protection Association, Limited, and on their behalf I say that the interference of the Cycle Manufacturers' Trade Protection Association in these matters is unwarrantable in the extreme.

Members of the motor trade are perfectly capable of managing their own affairs in a manner they consider best conducive to their interests and they are fully cognisant of the insidious designs of members of the Cycle Manufacturers' Trade Protection Association, which underlie their seeming beneficence. It ought not to be necessary after the rebuff which that Association received at the recent meeting held at the Inns of Court Hotel for me to write this letter, but it has been made necessary for me to do so, and to state plainly and in set terms that the members of the Motor Trade have come to the irrevocable decision to keep themselves separate and distinct from the Cycle Trade and to have none of it, and that the continued efforts on the part of the Cycle Manufacturers' Trade Protection Association to divert our members from their decision is only waste of time which could undoubtedly be better devoted to affairs with which the said Association is more directly concerned.

I notice from some of the trade journals that the new president of the Cycle Manufacturers' Trade Protection Association states that "with the experience which the Association has had they could be of very great service to the automobile trade." I can but thank Mr. Bowden for his desire to assist us, but would suggest that he defer such assistance until he is asked for it. I have no doubt that he makes a most excellent president for the cycle makers, but the automobile trade have men amongst them in whom they have far greater faith than they have in the gentleman who is so eager to give them the benefits of his ripe experience.—Yours faithfully, GEO. R. HELMORE, Secretary.

The Automobile Mutual Protection Association, Limited.

THE DUST TROUBLE.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—As one of the great faults in motor-cars has been that the occupiers of the back seats get smothered in dust, I have devoted considerable time to experimenting with a view to reduce the nuisance. I find the amount of dust is governed by the following factors—speed of car, size of tires, clear way under the car. A high car will throw less dust than a low one, and less of the dust thrown will settle on the occupants. Also, the more air that is allowed to go under the car the less the suction behind, so less dust will settle on the back. I therefore removed the apron on my car and substituted one of perforated metal. I found this improve matters considerably. I then carried the exhaust in a large-bore copper pipe across the back of the car and bored holes about one inch apart in the lower part of it. I can now travel any distance over dusty roads and the back of the car and passengers are scarcely soiled, while other cars travelling over the same roads at the same time and at the same speed are smothered. Another unexpected advantage is that the motor keeps much cleaner, less dust settles on it as the air in front of the forward axle is clear of dust, and, as it is allowed free vent, there is no suction behind the apron, the motor running in clear air. This improvement is very marked. Mr. Brooke, here at Lowestoft, carried out the alterations to my car, and will undertake similar work for motorists generally.—Yours truly,

E. ESTCOURT.

EXPERIENCES WITH A WERNER MOTOR-BICYCLE AND TRAILER.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I enclose photo of Werner motor-bicycle with trailer attached, which I hope will be of interest to your readers, as it shows what this remarkable little engine will do. I have found that with this combination it is possible to take any passenger at full speed on the level and that only very slight pedalling is required up the longer hills. Certainly I had a little trouble at first in getting a start on up-grades, and this was sometimes very awkward; for instance, if I stopped to look at a sign-post at the bottom of a hill, we generally had to walk up that hill before I could get enough way on to start.

However, as may be seen from the photograph, I have now fitted one of Mr. Simkiss' clutches, and with this we can get a start on almost any gradient. The trailer is an ordinary cycle one, and was made for me by the Glencoe Cycle Company, of Coventry, and stands the work admirably.

Taking it all round I have found the Werner a very efficient machine; the only trouble I have experienced being with the carburettor, in which I found it impossible to keep an even flow of oil from the tank when full—it would come through too fast, and when lower, not fast enough, and this caused not only the mixture



to vary continually, but the petrol to be consumed in a much shorter distance than it should be. However, I eventually overcame this to some extent, by taking the tank off when I found that one of the holes in the petrol cock had been partially stopped up, and also that the tank was not airtight around some of the studs which clip it to the frame. After having these soldered up I got much better results. The belt seems to form a fairly satisfactory drive, but has to be continually tightened—especially to take hills with trailer—but this is easily and quickly done, by carrying a belt punch, and one soon gets into the knack of knowing how much to cut out. Care should be taken to frequently dress the belt with castor oil, or it becomes dry and rotten and will break when tightened. On one occasion mine got into this state and kept breaking, and I had to shorten it, till, through being too tight, it insisted on turning turtle and running the wrong way up, which soon finished it. As this was in the dark, and kept me from getting home, it was rather unpleasant,

Some friends of mine are using small jockey pulleys which they have rigged up, but, of course, this must entail some loss of power, though not so much as is lost through a slipping belt. As regards side-slip, I believe all motor-bicycles are liable to this, as much and *no more* than the ordinary bicycle; but one naturally feels more nervous on account of the extra weight and speed. However, it is only in towns, where one gets greasy tram lines and traffic combined, that there is any real trouble, and it is my opinion that if you could only keep the engine pulling at all times all would be right. It is when you have to switch off and the bicycle is driving the engine or when you have to apply your brake that you must look out for squalls. I certainly think that the front drive is the best, but am rather inclined to favour the engine being placed somewhat lower down than in the Werner, as I believe it would be better in grease. As regards steering, however, the present position could not be improved—one can easily ride hands off at a fair speed, and, by slowing a little, I have filled and lighted a pipe with ease.—Yours faithfully,

E. S. COLLINS.

OVER THE AUSTRIAN ALPS BY MOTOR-CAR.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—In the *Motor-Car Journal* of September 21st, you quote from an article by Herr Lajos in the *Allgemeine Automobil Zeitung* in which he says that "last summer" he accompanied Count Stephen Gyulai on the first journey ever made by a motor-car over the Stelvio. "Last summer" is presumably the summer of 1900. On September 4th, 1899, I saw a motor-car descending the Pass from the Italian to the Austrian side, and was told that the same car had made the trip in the other direction the day before. The car I saw was not, to the best of my recollection that shown in your supplement, nor were the occupants of the car dressed as they are in your pictures. The Stelvio being the highest carriage road in Europe, and so formidable to motor-cars, it is a matter of some interest to know who really was the first to take an automobile across it. If Herr Lajos' trip was taken in 1900, he was certainly preceded by one year by some other automobilist.—Yours faithfully,

C. N. WILLIAMSON.

MOTOR-CAR ON FIRE.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—In the article *re* above in your last issue it is stated that the fire might have happened to any motor-vehicle. In this I think you are wrong. Had the car been fitted with a pressure-feed motor, and had the same leakage occurred as undoubtedly did occur, the worst that would have happened would have been the loss of petrol on the road. My opinion is that a gravity-feed motor is more dangerous than a pressure-feed one—even if the pressure-feed motor has lamp ignition and the gravity-feed one electric. The loss of room above the frame must also be a drawback. I require all the room I can get when touring. The fire you reported last week is what I have been foretelling to all my friends that have gravity-feed motors. After eight years' experience with motor-vehicles, I consider that the proper place for the petrol tanks is below the frame of the car.—Yours truly,

E. ESTCOURT.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—The burning up of the Napier car in the Uxbridge Road last week brings, somewhat forcibly, before us the relative safety of pressure and gravity feeds; had the motor of the particular car been fitted with pressure feed I fail to see how the accident would have happened. I have heard it repeatedly said that gravity is fitted on the score of safety, but have never been able to get a satisfactory explanation why this is so; as the matter is now suggested it would be interesting to have other views on this point. In a gravity-feed car the petrol tank is fitted right in the body, and some of the pipes must necessarily be above the floorboards, with the result that in the event of a

leak the body and floorboards may become saturated, and not discovered until the vapour is ignited by the sidelights, short circuit, or other unforeseen occurrence. A pressure-feed car would have the tanks underneath, also all the pipes and joints, with the result that any spirit leaking would only drop on the road, and so not come in contact with any inflammable material. Again, when the car is put away, the pressure feed having the tank lower than the float, the pipes empty themselves, whereas in the gravity type the pipes are always full owing to the tank being at a higher level than the float; this cannot be right. The question of the one working better than the other may be put on one side altogether, as it is only a matter of method in getting the spirit to the float; after that the conditions are the same. It is interesting to note that the latest Napier cars are governed on the throttle, but in justice to my firm—Messrs. J. W. Brooke and Company, Ltd.—I would like to point out that this method is not altogether new, as we have been experimenting on throttle governing for some time past, and are fitting the perfected arrangement to our new three-cylinder 10 h.p. cars.

MAWDSLEY BROOKE.

"AERIAL NAVIGATION."

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I had not intended occupying your space further on the above subject, but really "Automan's" remarks of last week call aloud for refutation, and cannot be permitted to pass unanswered, especially as it is so easy an undertaking. It really matters very little whether "Automan" "accepts my definition" of a gravity vessel, as there is a host of *bona-fide* authorities who do—and as he—in his first comments on my original letter to your contemporary—confesses to being no authority on the subject. And now "Automan" undertakes to "enlighten the public." That is a large order under the circumstances.

I can see that "Automan" is still uninformed about the successful and important steam and sailing-flight experiments of Professors Langley, Hargraves, Lilienthal, and Chanute that I quoted, and which I certainly do wish the "uninitiated public" to believe, the initiated portion know already—for instance, that Professor Langley's Steam "Aërodrome," measuring 15 ft. by 14 ft., made three-quarters of a mile of free true horizontal flight, sustained and propelled by steam power alone, and then subsided gradually and safely.

One can now easily understand how it is that "Automan" talks about the "barren field" of the aviationists, and that he "can see no valid reason why man—recognising the futility of an attempt to construct a flying machine, the motive power of which should have the same relation to its weight as a bird's wing-power has to its weight" (why this roundabout way of expressing it?)—should not employ hydrogen gas to counter-balance the difference.

Now, is it possible that "Automan" is ignorant of the fact that both steam and petrol motors that are even relatively lighter than the birds (for a given power) have been made and successfully worked? Where can "Automan" find a bird having one horse-power per seven pounds of weight, and where does the "futility" come in now?

One of the best informed and soundest authorities on this profound subject that ever lived, the late F. W. Brearey, B.Sc. (late Hon. Sec. of the British Aeronautical Society), wrote:—"A total misapprehension of the principles of flight is displayed whenever a balloon is recommended to take off part of the weight of any mechanical arrangement." To effectually drive home this vital truth to the most sceptical, I cannot do better than quote the recent dicta of another authority, Mr. George Griffith, who holds sound views on aeronautics, particularly as his views are in entire accordance with my own. Mr. Griffith, when writing of the second of the series of grave *con-temps* of M. Santos Dumont's trials, under the heading of "The Futility of using Inflated Airships," says:—"If you make your gas-envelope sufficiently rigid (to be forced through

the much denser air) you have to add so much weight that the lifting power of the gas is (virtually) reduced quite two-thirds. Again, if you are to have a motor powerful enough to drive such a gas-envelope through the air, its weight increases enormously with every horse-power that it develops. And here comes in the hopeless contradiction against which every aerostat has come to grief. Several years ago Professor Langley, in a lecture at Boston, stated—with absolute truth—that ‘if you only hit the air hard enough it is a solid.’ What he meant was that if you could get the propellers of the real flying machine of the future to revolve at a sufficient speed, the airship would be as safely supported on the air as the steamship is on the water. It is exactly that fact which has brought M. Santos Dumont to grief.”

I protest against the vessel of M. Santos Dumont being called a “gravity balloon.” That is a contradiction of terms, and so an absurdity. In conclusion I must remark, and I do not say it in malice nor discourtesy, that “Automan” is one with only a superficial knowledge of the science of aeronautics, and as such is not qualified to “enlighten the uninitiated public”; moreover, it is undesirable that he should attempt it. All those really devoted to the cause (including myself) are anxious that the public should be rightly informed about it, and so develop a rational interest.—Yours faithfully,

SIDNEY H. HOLLANDS.

FURIOUS DRIVING AND THE SPEED LIMIT.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I notice in this week's *Journal* that you did not appear to answer the summons at Grantham, for furiously driving your car, and that your reason was not to waste time and money in defending the case, as it was useless to give evidence. I am quite of the same opinion, and that is why I did not defend my case at Oxted the other week. I was quite sure we were not travelling at twelve miles an hour, and could have proved it, but I knew the Bench would not listen to my evidence. On the day that I was stopped by seven policemen, all in a row, we had been four hours covering thirty-five miles, and continually running all the time. These seven policemen were half way down an incline, and just before we reached them they rushed out of the hedge and told us to stop, which we did. I may say my car is only geared to fifteen miles per hour. There was another car just in front of us, which was going slower even than ours, but its owner was also summoned and fined. I think it is scandalous that motorists should be treated in this way.—Yours truly,

H. SEAL.

MR. C. A. SMITH, of Cobham, writes:—“‘Beware of the Police.’ Permit me to inform you that there is no truth in your correspondent's statement (in last week's issue) that the telephone has been fitted up between Esher and Cobham for the use of the police. The story that a large wagon to barricade the highway is kept at Cobham is also a fabrication.”

THE Fire Department of Washington, U.S.A., is to be equipped with five electric vehicles.

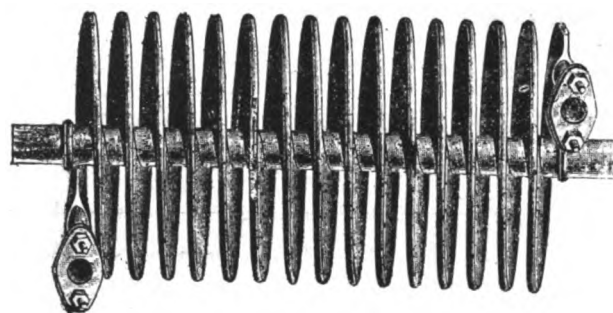
UNDER the name Robur, a carburetted alcohol, for use of motor-cars, is being introduced by a French firm, who are, it is said, establishing dépôts for its sale all over France.

THE Leader Automobile and Engine Company has been incorporated at Toronto with a capital of £50,000 to manufacture automobiles, etc. |

At the last meeting of the Lanark County Council the Chairman read a communication from the Secretary for Scotland to the effect that the speed of light locomotives on highways in Scotland should be raised to a maximum of twelve miles an hour. A discussion ensued, and eventually a resolution was adopted that they send a recommendation to the Secretary for Scotland suggesting that the maximum speed be only ten miles an hour.

THE JULIEN RADIATING COIL.

A NEW radiating coil for use in connection with the water-cooling of petrol motors has lately been devised by M. Julien, and put on the market by M. Establie, of 11, Quai de Valmy, Paris. From the illustration it will be seen to consist of a flattened copper tube helically wound round and soldered to a central supporting rod. The helical coil is about 8 in. in diameter, the tubular ribs being nearly 1 in. apart. Thus, instead of the water circulating through tubes to which radiating ribs are fitted, it flows through the ribs themselves, the radiating surface to which the water is exposed being thus considerably increased. The apparatus is being made in four sizes. For



engines of 4 h.p. the cooling surface is equal to three-fifths of a square metre, and weighs only eleven pounds; the distance the water flows in the coil is 16½ feet. For 6 h.p. engines the coil has a cooling surface of nine-tenths of a square metre, the weight being fifteen pounds. For engines of 8 h.p. and 12 h.p. the cooling surface is increased to one and a fifth and one and a half square metres respectively, the weight being nineteen pounds for the 8 h.p. coil, and twenty-four pounds for 12 h.p. The new coil is easily fitted, and is said to give excellent results in practice.

THE *Canadian Engineer*, of Toronto, has sent us a copy of a useful chart of the metric system of weights and measures they have lately issued.

IN addition to a new 6 h.p. motor, we hear that Messrs. De Dion, Bouton and Company, of Puteaux, are bringing out a single cylinder engine of 8 h.p. for next season.

WE have received a copy of the first issue of *Locomotion*, a new French weekly devoted to automobilism and all forms of locomotion. Messrs. Baudry de Saunier and Gaston Sencier are the editors.

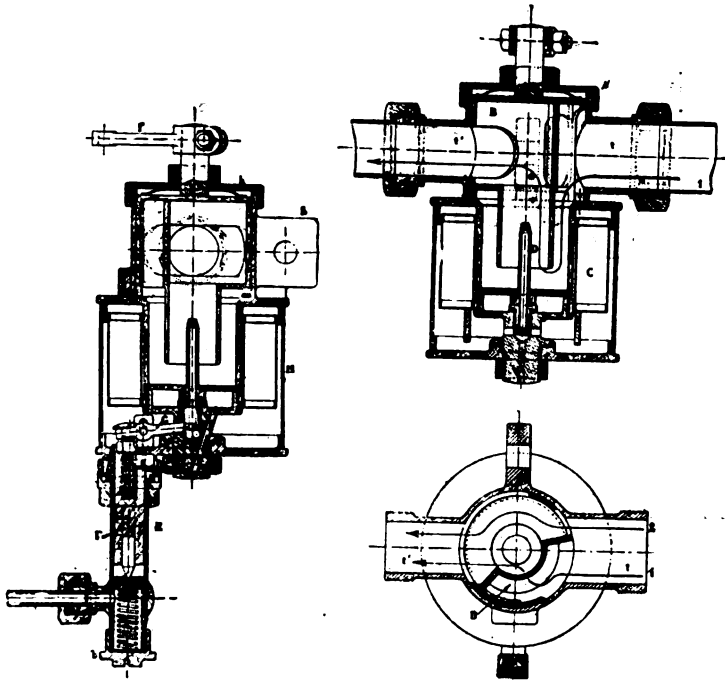
MR. W. I. C. ELLIOTT, of Sydney, the Australian agent of De Dion-Bouton, Ltd., has lately successfully made the trip from Newcastle to Moree, New South Wales, a distance of 311 miles, in a 4½ h.p. De Dion voiturette.

MR. A. L. DYKE, of Linmar Building, St. Louis, U.S.A., has just introduced a new “jump spark” coil, designed to operate with or without a vibrator. The vibrator, which is enclosed, and has no screws to adjust or work loose, is arranged inside the case. The coil is very compact, being only 3¼ by 3¼ by 5½ inches, with four wires leading from same.

LAST week several newspapers published a paragraph stating that “the residents of the busy thoroughfare of Hough Lane, Leyland, were greatly alarmed when a blazing motor-car dashed along the road driven by Mr. James Sumner. The car was quickly stopped, but two young girls had a marvellous escape of being burned to death. The car, which was worth £200, was badly damaged by fire.” Mr. C. E. Taylor, of Leyland, writes to us to say that there is no truth in the report whatever. The car in question is a Locomobile, and all that happened was the flooding of the burner, and a blaze through the chimney. As to the car being damaged, this is utterly false, as the paint work was not even singed, and the car sustained no damage whatever.

THE DE DION-BOUTON CARBURETTOR.

THE new type of De Dion carburettor, illustrated in the accompanying figures, consists of a bronze body, secured to the frame through a clamp cast integrally therewith. In order to understand its operation, it will suffice to examine the arrows which indicate the path of the air drawn in by the motor. Arrow 1 indicates the path of the air which passes around the nozzle D, and which there mixes with the petrol issuing from this nozzle. Arrow 2 indicates the path of the supplementary air supply, which mingles with the carburetted air in the tube L. It will be seen that to obtain a perfect mixture it suffices to regulate the passage of the supplementary air supply, indicated by arrow 2, by turning more or less the valve B by means of the lever I.



FIGS. 1, 2, AND 3.

The following is the nomenclature of the different parts of the carburettor: A, body of bronze provided with a tube connection *l* for admitting the air, and a tube connection *l'* for leading the carburetted air in the cylinder. The bottom of this body is removable, and has a hole drilled through it for any surplus petrol which may condense there to flow off. B, cylindrical valve capable of turning in body A. By means of this valve the air arriving through tube *l* is throttled more or less, in order to obtain good carburation. It terminates at its lower end in a tube of smaller diameter, surrounding the nozzle D for part of its length, while a prolongation of its upper part receives the adjusting lever I. C, annular float of brass composed of two concentric shells united by flanged and soldered heads. The annular form permits to utilise the inner space for the mixing chamber. D, brass nozzle, permitting the petrol to issue through an orifice at a suitable rate. E, petrol admission piping, serving also as a guide for the automatic valve. At the lower end of this pipe is a removable cap *b*, on which rests a spring *r* supporting a metal gauze strainer intended to arrest any impurities in the petrol. Just above the cap is fastened, by means of a pipe union, the pipe leading to the petrol tank. F, adjustable petrol admission valve, by means of which the level in the float chamber can be regulated. It is composed of a brass rod with four longitudinal grooves for permitting the flow of the petrol. Its lower extremity is provided with a needle point of nickel, and its upper end is drilled and tapped to receive the adjusting screw, which is locked by a check nut. G, the float lever, by means of which the petrol supply to the float chamber is cut off automatically. It forms a double-armed lever, with arms in the proportion

of two to one. The float resting on the long arm transmits its ascensional force to the valve suspended from the short arm, which the drawing shows closed. H, float chamber, composed of a brass tube united with the main casting A and soldered to a bronze bottom, which receives the fitting E. This chamber is fastened to the fitting E by a nut which facilitates disconnection. I, operating lever fastened to the cylindrical prolongation of air valve B passing through the screw cap K, the latter retaining the valve B in the chamber A.

CONTINENTAL NOTES.

BY "AUTOMAN."

IT is not to be wondered at that across the Channel our friends get peculiar ideas of our customs and manners. In a letter to a French contemporary, by a correspondent sent over to England to write up sport on this side of the Channel, there appears an account of a visit to the General Post Office in London, where the correspondent, gathering his information from the last edition of a Guide to London, asks to see the lawn tennis on the roof. It is astounding to think that there should exist a guide book to London containing the amazing piece of news that on the top of the General Post Office building a lawn tennis ground has been established for the use of the employees. In another place, in the same contemporary, we are told of the daily tricycle rides of King Edward the Seventh, and of a spill which took place the other morning in the gardens of Buckingham Palace when His Majesty, wanting to turn too quickly, fell over on one side. It is not explained how His Majesty was clever enough to ride a tricycle in Buckingham Palace Gardens whilst he was enjoying his automobile in Germany.

THE use of alcohol for motor-cars does not seem to make much progress. We hear of it being used experimentally, and for contests where a special prize is offered, but there does not seem to be anybody who uses it for private purposes, and, unless it can be made very much cheaper or very much more efficient, there does not seem to be the slightest probability of its coming into use.

MOTORPHOBIA, in its worst form, is appearing in first one district in France and then another in the most unexpected manner. Fortunately it is confined to silly correspondence to the papers and meetings at which absurd resolutions are passed. The latest comes from Yvetot, France, where the Council for the Arrondissement passed a resolution the other day that the circulation of automobiles should be confined to the main roads exclusively, and that there should be a tax of £1 per h.p. on all motor-cars.

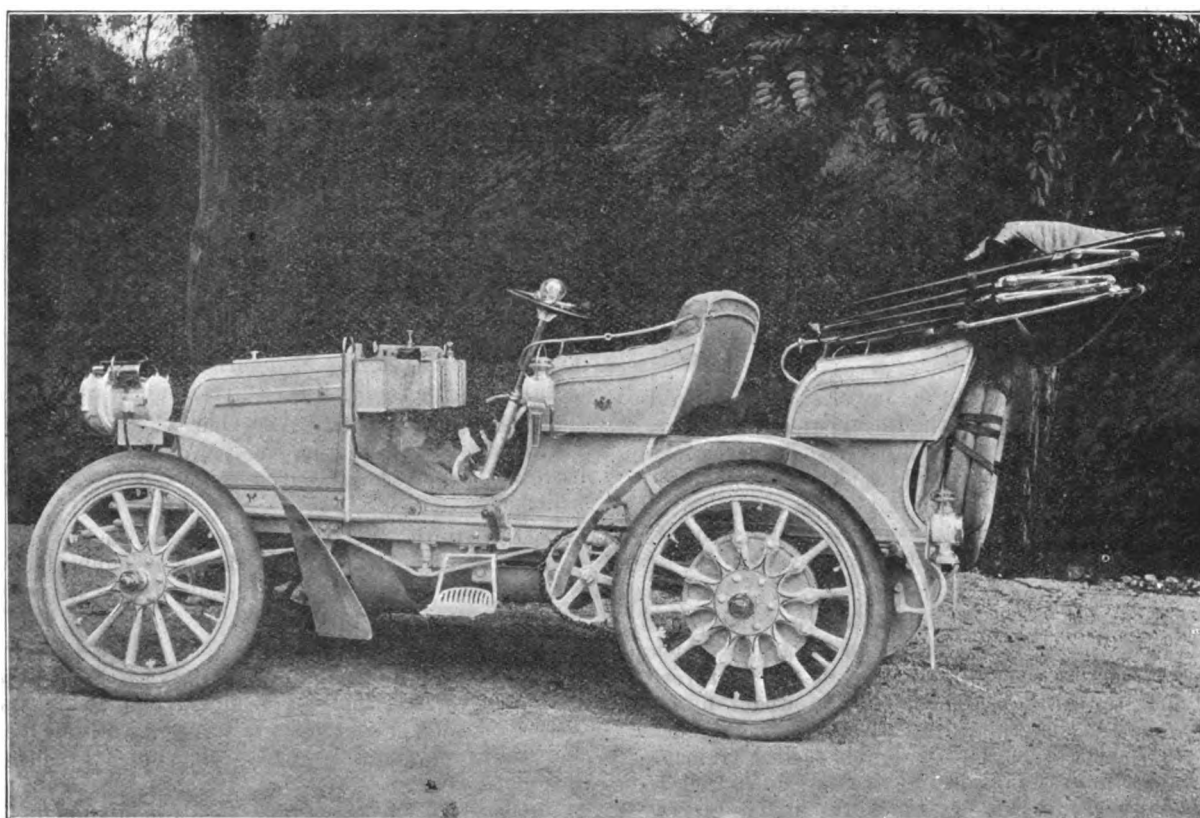
THE columns of the *Journal* are not sufficient in number for me to describe all the flying machines which are being invented, designed, or manufactured; every day brings news of some fresh candidate for the honours of the air, but it is a sign of the times that in nearly every case a modification of M. Santos-Dumont's scheme is the subject of the labours of the new candidate. Certainly the public experiments of the Brazilian will have the effect of leading to a complete testing of his favourite scheme, and we shall soon know definitely what can be done with gravity navigable balloons. M. Santos-Dumont himself will be ready again, probably, to-morrow. The keel of his air-ship is repaired, and the motor, which has been back to the maker, has been delivered again with certain modifications. It seems that the pitching of the balloon upsets the float in the carburettor, making it liable to flood, and also deranges the oiling arrangements, so that the float has been dispensed with, and in future each cylinder will be lubricated separately. Next Sunday there is an important race meeting at Longchamps, the happy hunting ground for M. Santos-Dumont's trials, so that the public who are witnessing the races may possibly also see an aerial race round the Eiffel Tower.

TALKING of navigable balloons, I may mention that it is just fifty years since Henri Giffard set out from the Hippodrome in Paris on a navigable steam balloon. His balloon was slightly lighter than the air, and thus raised itself; it was then propelled by fans. It came down near Trappes, in the Commune of Eancourt. The experiments were abruptly stopped owing to the gas company being too busy dispensing its product for lighting purposes, and refusing Mr. Giffard the gas he required to raise his machine from the ground.

THE air seems to have a great attraction for automobilists; whilst Messrs. Rolls and Butler were ballooning on our side of the Channel, Messrs. Maurice Farman and George Leys were up in the air in France. At the same time a party in a fast motor-car driven by Marcel Cohen were chasing the latter balloon overland. They were not, however, able to follow it quick enough on account of the varying direction of the currents of the air, and arrived at the Brosse Railway station just after Farman and Leys had taken the train back to Paris.

broad arena, the bright sunlight showing up the vivid colours and contrasts for which the Spanish ladies are remarkable; they will see in their mind's eye a brilliant procession of toreadors and picadors marching round the arena, and saluting the Alcalde. They will remember the arena being cleared, the gates all closed, and amidst the sound of trumpets they will see a little door open and a bull come trotting out, pawing the sand and sniffing the air, dazed by the sudden change from the pitch dark pen where he has been confined all day to the bright sunlight and waving colours which surround him.

NO ONE can fail to be impressed by such a magnificent scene, but here the enthusiasm of the Briton ends, and gives place to the memories of the horrid spectacle of wretched horses finished up by the bull, after having been rushed up towards him in the most cowardly and cruel manner. There is neither sport nor skill in the performance, which consists of brutal butchery, the object of which is solely to tire the bull, so that he may not be too much for the toreadors. Mr. Deutsch, the hero of the prize for the aerial journey



A 20 H.P. AUSTRIAN-DAIMLER CAR, BUILT BY MESSRS. BIERENZ, FISCHER AND CO., VIENNA.

Cliche de

[Allgemeine Automobil Zeitung.]

RICHARD REITH, who was second at Deauville on his 16 h.p. tricycle, has issued a challenge to either Jarrot or Edge. The challenge is for a race of a distance of ten miles at the least and for one hour at the most.

AN unfortunate accident occurred at the manoeuvres in Holland, through the firing of the brake of the car in which General Snyders, Commander-in-chief of the manoeuvres, was returning home. The carriage also contained the German, Russian, and Norwegian Attachés, and was driven by the Baron Van Aspech (who is a captain on the Dutch staff). Coming down a steep hill at Kouwberg, the brakes fired, and the car ran away and charged a wall at Maestricht, with the result that the driver was killed and the other officers sustained more or less serious injuries.

THE latest sensation in France is the automobile bull fight. To anyone who has witnessed, as I have, a bull fight in Spain, the thought of it will bring back the magnificent scene and the

round the Eiffel Tower, has made a laudable though unsuccessful attempt to do away with the cruel butchery I have alluded to. Last Sunday at Biarritz he organised a bull fight, wherein the picador took his seat on a motor-car driven by Mr. Deutsch's *mecanicien*. The motor-car had its wheels armoured, and drove into the arena amid great applause from the public. Amidst trumpet calls the bull arrived on the scene, but he seems entirely to have misconstrued the situation; a motor-car was too much for him, and, instead of chasing and attacking it, he allowed himself to be ignominiously chased round the arena, his only endeavour being to get out of the way of the horrid thing. Once only, and more by accident than purpose, he turned on it, but immediately received a prick from the picador, and continued his ignominious flight.

IN order to prove to intending purchasers the value of their Boron generators, the Boron Battery Company, of Liverpool, announce that they are prepared to charge accumulators for any local motorist gratis.

HERE AND THERE.

WE hear that the German Daimler Company are adopting a new form of magneto-electric ignition on their 1902 cars.

A PUBLIC service of motor-cars is about to be started at Portsmouth and Gosport.

LOCOMOBILE steam-cars are becoming very popular in Huddersfield, there being over a dozen in use in that town.

ONE of the latest recruits to the ranks of motorists is Viscount Fincastle, V.C., the heir to the Earl of Dunmore, who has just purchased a $4\frac{1}{2}$ h.p. De Dion voiturette.

WE are glad to learn that Mr. Pat Drummond, of Stirling, who met with a nasty motor-cycle accident recently, is making good progress towards recovery.

MESSRS. DE DION BOUTON, LIMITED, of 14, Regent Street, S.W., inform us that they have made arrangements for supplying the De Dion voiturettes and cycles on the deferred payment system.

AN exciting scene took place at Todmorden recently. William M'Carthy, a notorious horse thief, stole a valuable horse and trap at Halifax, and drove away at a furious pace. A hue and cry being raised chase was given by the police in vehicles and by numerous bicyclists. Finally a motor-bicyclist succeeded in running the thief down after a sixteen miles chase, and a desperate struggle ensued before he was secured.

SIR EDWARD BRADFORD, the Commissioner of the Metropolitan Police, has issued a notice calling the attention of the public to the bye-law requiring the display of a light on vehicles between one hour after sunset and one hour before sunrise within the administrative counties of London, Middlesex, Surrey, Kent, Essex, and Hertford, and the boroughs of Kingston-on-Thames, Richmond, Croydon, and West Ham.

THE Kaiser has presented to the Imperial Agricultural Society a beautiful china vase made at the Royal porcelain factory, which is to be offered as a prize to whomsoever shall devise the best spirit-driven motor-car. His Majesty's idea is to increase the use of raw spirit and to encourage farmers in that branch of agriculture. The motor-cars are to be delivered by March 1st, and intending competitors must enter their names before December 1st.

THE Westinghouse Electric and Manufacturing Company, of Pittsburg, U.S.A., has lately completed an electrical vehicle of novel construction. In each of the hubs of the four road wheels is a motor, the hubs being enlarged to about fifteen inches in diameter and lengthened to about twenty inches. The body of the vehicle resembles a double-decked tramcar, having seats lengthwise in the inside and two long seats back to back on top. It will carry fifty people, and will be used in Lincoln Park, Chicago.

At Bow Street Police Court last week, H. F. Lowe, described as an engineer's assistant, was committed for trial on a charge of obtaining £30 from Mr. Paul Hensel, a merchant, of Rochester Row, and £10 from Mr. Schordorf, of West Norwood, by fraud. It was alleged that the prisoner misled the gentlemen named, as well as other inventors, by telling them that he was a patent agent, and by that means obtained from them money for the purpose of getting patents for their inventions at home and abroad.

THE Congregational Church in Stratford, Conn., is ordinarily lighted by electricity. When on a recent Sunday morning it was dark and cloudy the church committee were in a quandary, for no current was available. After many suggestions, it was finally decided to resort to the old-time kerosene lamps which had formerly done service. At this moment, however, Mr. F. C. Beach rode up to the edifice in his automobile and offered his services. Mr. Beach backed his machine, which is propelled by electricity, up near a window in the rear of the church, connected the storage batteries with the feed wire and soon had the darkened interior of the structure brightly illuminated.

THE motor-car has lately made its appearance at Grahams-town, Cape of Good Hope.

MR. W. G. D. GOFF, of Waterford, has ordered a 16 h.p. Panhard, of which he expects early delivery.

To "pull up" for sheep and cattle upon the highway may, says the *Field*, almost be said to be an unwritten rule of the road.

A PATENT has recently been taken out in France, by Messrs. Panhard and Levassor, of Paris, for a method of placing the circulating pump inside the water-tank.

THE first book on the motor-car in the Hungarian language has just been published in Budapest. It is from the pen of Herr M. Herzfeld, and is entitled "Az Automobil."

THE Dutch Automobile Club is organising a series of trials of heavy haulage automobile wagons to be held between Haarlem and Rotterdam towards the end of October.

THE Tramways Committee of the Leeds Corporation have passed a resolution authorising the Lord Mayor to order a motor-car for the use of the staff, at a cost not exceeding £276.

SIR CHARLES LEGARD will move a resolution at the next meeting of the Sherburn (Yorks) District Council in favour of the registration and numbering of motor-cars.

MESSRS. DE DION BOUTON, Limited, ask us to state that genuine De Dion Bouton motors with water-cooled cylinders are made only in $3\frac{1}{2}$ h.p., $4\frac{1}{2}$ h.p., 6 h.p., and 8 h.p. sizes.

THE Bexhill Motor Company have just published an amended time service for October. It is satisfactory to note that the company is making no material decrease in the number of cars to be run throughout the winter months.

THE fire brigade authorities of Melbourne, Vic., have, after satisfactory trials, purchased a steam motor-car from Messrs. Thompson and Co., the Melbourne firm of motor-vehicle manufacturers. The vehicle will be used as a hose cart.

WE learn that the War Office has placed an order with Messrs. De Dion Bouton, Limited, for a De Dion motor to be used for experimental purposes in connection with steerable balloons.

ON Saturday last motor-cars were used to convey a bridal party to and from St. James's Church at Tunbridge Wells. The wedding was that of Mr. F. W. Burstow, of Brighton, and Miss Mary Jones, of Tunbridge Wells. The cars were beautifully decorated for the occasion.

IN addition to the grant of letters patent in France and Belgium, the Electric Ignition Company of Birmingham have now succeeded, after much delay, in securing a patent in Germany for the E.I.C. sparking plug, the demand for which is steadily growing.

ON another page we reproduce a photo taken at Leamington of the procession of cars organised on the occasion of the hearing of the summonses for furious driving against Messrs. Iden, Bamber, and Stanton, of Coventry. The cases were reported in our last issue.

WESTON MOTORS, of 14, Mortimer Street, W., inform us that a Weston steam car manufactured by Messrs. Grout Brothers, of Orange (Mass.), won the first prize in Class A, in the hill-climbing competition, in the New York to Buffalo endurance test. The ascent was up Nelson's Hill, which is 2,372 feet in length, the gradients running from 12.76 per cent. at the start to 16.15 per cent. at the steepest point, and then easing at the top to 10.64 per cent.

THE Holt Viameter, a gradient and distance meter for motor-cars, an illustrated description of which was published in our issue of April 27th, 1900, is now being marketed by the Viameter Company, of 31, Kirby Street, Hatton Garden, E.C. The apparatus is made in several forms, one showing gradient and mileage, another showing gradient only, one—the recording viameter—giving a complete analysis of a motor-car journey, showing on a chart the distance traversed, the gradients, and the time taken over any portion, and one showing mileage only.

ON this page we give an illustration of a steam delivery wagon on the Milwaukee system, which is being introduced by Messrs. Shippey Brothers, of King Street, Cheapside, E.C., for the rapid conveyance of produce to market.

THE Western section of the Scottish Automobile Club propose to hold a Club run to Lanark on the 12th inst. Mr. John Stirling has kindly invited the members of the Club to tea at his home, Fairholm, Hamilton.

MR. F. W. THOMAS, 6, Lewis Street, Halifax, is the owner of a motor-car with which he is prepared to accustom any horse within a reasonable distance of his town to the sound of the automobile.

ACCORDING to figures given by the *County Gentleman*, the number of coaches running out of London has steadily declined during the last few years. From 1897, when 16 ran daily, the number has fallen annually till this year finds only 11 regularly on the road.

SINCE its first appearance on the Drury Lane boards "The Great Millionaire" has been much improved, from the spectacular point of view. The motor-car scene dispenses with the cinematograph and becomes a reality, in which the two cars race around the stage, and the villain and his companion drive over the cliff in full view of a horror-stricken house.

IN our last issue we mentioned that the Bradford Motor-car Company has purchased a large number of Pieper voituresses, and were offering the first dozen at a temptingly low price. Readers of the *Journal* can apparently scent bargains when they are about, for Mr. House, of the Bradford Company, tells us that in four days they had no less than forty-nine enquiries.

COMMENTING on the success attained by the London and Tunbridge Wells motor-car service, the *Gardener's Magazine* says:—"It is obvious that the advantages of such a service will be considerable, and the fruit will require much less handling, as the automobile will take it almost from the farm to the market; whereas, in the present case, it has to be brought to the railway, then conveyed to London, and recarted from the London goods station to the market."

WHILST Sir John Dickson-Poynder's motor-car was being driven in the vicinity of Hartham House, Wilts, on Sunday evening, it by some means failed to round a sharp curve, and was overturned. The occupants were Mr. D. H. Clutterbuck, Miss Clutterbuck, and the Rev. Mr. Harford. Miss Clutterbuck, Mr. Harford, and the driver were thrown out. Mr. Clutterbuck, who is one of the survivors of the famous charge of the Light Brigade, was, however, pinned beneath the car. When extricated it was found that he had received a somewhat serious injury to his hip, besides sustaining a severe shaking.

THE country round Frensham was looking at its best on Saturday and Sunday, when the English Motor Club made the Pond Hotel its meeting-place. The accommodation has been considerably increased and greatly improved by the alterations made recently. Eleven cars and four motor-cycles eventually

reached the Hotel, the total muster in horse power running into the respectable figures of 165. From this it may be correctly gathered that some big cars supported the fixture, amongst them being Mr. Edge's 50 h.p. Napier and Mr. Jarrott's 40 h.p. Panhard. On Sunday many extended the run to the South coast.

Le Velo, which compiles a monthly list of casualties, fatal and otherwise, throughout France, states that in July last, 53 people died from accidents caused by horses, and 613 were injured. Railways were responsible for 16 deaths and 112 injuries. Cycles accounted for 6 fatalities and 104 injuries; motor-cars for 5 and 51 respectively. In other words, of the fatalities dealt with, 66.25 per cent. were due to horses; 20 per cent. to railways; 6.25 per cent. to motor-cars, and 7.50 per cent. to cycles. Of the injuries recorded 69.65 per cent. were caused by horses; 12.75 per cent. by railways; 11.81 per cent. by cycles, and 5.79 per cent. by motor-cars.

THE General Automobile Company, Limited, was registered on September 12th, with a capital of £100 in £1 shares, to acquire the goodwill, assets, and contracts obtained by W. C. Bersey on behalf of the company, and to carry on the business of dealers in, factors of, and letters on hire of motor-vehicles,

mechanical, electrical, and general engineers, financial and general agents, promoters, etc. The subscribers are:—W. C. Bersey, 94, Long Acre, W.C., engineer, 1 share; F. T. Bersey, Mayfair House, Brockley, engineer, 1 share; F. H. Clingo, 100-4, Long Acre, W.C., engineer, 1 share; D. Farman, 104, Long Acre, W.C., engineer, 1 share; W. A. Ware, 93, Long Acre, W.C., coachbuilder, 1 share; E. Wareham, 88, Greyhound Road, N., clerk, 1 share; W. Prickett, 17, Gresley Road, Whitehall Park, N., clerk, 1 share. No initial public issue. Registered without articles of association.



MESSRS. SHIPPEY BROS. STEAM PRODUCE DELIVERY VAN.

THE Bromley Autocar Company, Limited, has been formed, with a capital of £7,500, to acquire the good-will and undertaking of the business at present carried on by Messrs. H. Hicklin and A. E. Draper, under the name of the Bromley Autocar Company, at Bromley, Kent. They will also purchase from Mr. F. H. Dougal, of Westerham, the motor-bus now running between Bromley and Bigginhill. In addition to the sale of motor-cars, it is intended to make ample provision for the increasing trade and business of repairing and hiring out and storing motor-cars. A further important object of the company is the establishment of regular services of motor-omnibuses between Bromley and the outlying towns and villages. Besides a service to Croydon, it is proposed to run frequent services of motor-omnibuses between the following places: Catford, through Bromley to Farnborough and Pratts Bottom, and also from Bromley to Chislehurst, Sidcup, Bexley Heath, and other places, as may be found necessary. A successful service to Hayes, Keston, and Biggin Hill (Westerham) has for some time past been running. Another profitable source of income to which the company proposes to turn its attention is the incorporation of a service of motor-wagons for the purpose of bringing fruit from different districts of Kent to London.

THE AUTOMOBILE MANUFACTURING COMPANY.

In the Vacation Court, on Wednesday, the Automobile Manufacturing Company, Limited, figured in two cases, which were heard together. In the one they sought to restrain defendant Jordan from selling or disposing of stock, and defendant Rogers from advertising business and premises. In the other case they were defendants, along with Jordan, Moore and others being plaintiffs, and asking for the appointment of receiver and manager. After hearing the arguments of counsel, his lordship said he was satisfied that in the account given of this transaction there were circumstances which, in his opinion, required further investigation. Then, again, he was not satisfied with the way in which Mr. Rogers came into the transaction. Mr. Rogers was a director of companies, among others a restaurant company in the Strand; he had no connection with automobiles as a business man, and he seemed to drop from the clouds and make an offer to buy. He should have felt more satisfied if there had been more explanation of the transaction. He was further struck with the haste displayed in executing the conveyance, which was stamped without being fair copied. He was not satisfied that there was a bona-fide exercise of the power of sale by Jordan, or that Rogers was an independent purchaser. These were points which might further be cleared up at the trial. He thought the right thing was to order that a receiver and manager should be appointed to act until the further order of the court, or until the hearing of the action.

THE WAR OFFICE MOTOR-VEHICLE TRIALS.

WITH reference to the forthcoming competition for self-propelled lorries for military purposes we are informed that the following firms have signified their intention of entering vehicles:—

Mr. James Austin, 461½, King Street, E. Toronto.
Messrs. Bayleys, Limited, 42, Newington Causeway, E.C.
Messrs. Brown and May, Limited, North Wilts Foundry, Devizes.
Messrs. Foden, Sons and Company, Limited, Elworth Works, Sandbach.
Messrs. G. F. Milnes and Company, Limited, Balderton Street, Oxford Street.
Messrs. Panhard and Levassor, 14, Regent Street, S.W.
Mr. Charles D. Phillips, Emlyn Works, Newport, Mon.
Herr Fritz Scheibler, Aachen.
The Straker Steam Vehicle Company, Limited, 9 Bush Lane, E.C.
The Wantage Engineering Company, Limited, Wantage, Berks.
The Thornycroft Steam Wagon Company, Limited, Homefield, Chiswick.
The Creek Street Engineering Company, Deptford, S.E.
Mr. Charles Innes Baillie, Ballygunge, Grove Hill Road, Denmark Hill, S.E.
Mr. J. E. Liardet, 16, Hyde Park Gate, S.W.
Lieutenant F. N. Baker, R.A., Leith Fort, Edinburgh.
Mr. Frank L. Beamond, Mere Green, Sutton Coldfield, near Birmingham.

The trials commence on 4th December next, and will take place in the vicinity of Aldershot.

A COLLISION CASE.

At the Newmarket County Court, Mrs. E. Foreman sued H. M. Beddington, tenant of Kirtling Tower, for £28 10s. 6d. in respect of damages caused through a cart belonging to the plaintiff and defendant's motor-car coming into collision. Dr. Cooper appeared for the plaintiff, and Mr. Cababe for the defence. Luther P. Foreman, husband of the plaintiff, said that he was driving a cart, laden with building materials, and belonging to his wife, along Upper Station Road, on the afternoon of August 31st, and was proceeding at a slow walking pace, when he saw defendant's motor-car coming towards him at a great speed. He held up his hand and shouted; but the speed was not checked. When the car came abreast of his cart a horn was blown, causing his horse to jump, and the car then ran into some scaffold poles which projected over the back of the cart. The cart and the horse were upset. The car was going at forty miles an hour. Mr. Beddington was laughing when witness, after recovering consciousness, went to him; and at a subsequent interview admitted that he was travelling at forty miles an hour. Several witnesses for the plaintiff gave evidence that Foreman held up his hand when the motor-car was approaching, and gave various estimates of the speed, some saying it was about forty miles an hour, and others from twenty to twenty-five miles. For the defence, Mr. Beddington, a friend who was with him in the motor-car, and the engineer, Felix Standard, said that the time taken for the journey from Kirtling Tower to the scene of the accident was about half an hour, and that the speed on entering the town was reduced to eight or nine miles an hour. They did not see Foreman hold up his hand. When they were passing Foreman's cart, Mr. Beddington sounded the horn to warn a trap in front, and Foreman's horse swerved. The cart came across the road, and the motor-car struck the poles which projected from the back of it for fourteen or fifteen feet. At the time of the impact the brakes were on, and the motor-car was not travelling at more than two or three miles an hour. The jury returned a verdict in favour of the plaintiff for the full amount claimed.

REFUSING TO STOP.

At Llanrwst, Walton Wigg, a motor-car driver, was summoned for refusing to stop his motor-car at Glan Conway, on September 4th, when appealed to by Mr. J. W. Jelf Pettit, one of the magistrates, because his horses were becoming restive. The defendant pleaded guilty. Mr. Pettit, in his evidence, said that on the day in question he was driving a large party, and when at Glan Conway his leaders became restive. He held up his hand to the defendant with a view of warning him to stop, but as he needed both his hands, he then shouted. Defendant did not ease his pace. The Chairman (to defendant): You are fined £1 and costs. We could have fined you £10 and costs. You are getting off very cheap.

FURIOUS DRIVING CASES.

At Penrhyndeudraeth (Merioneth) Police-court, A. Dubois, of London, stated to be secretary to the Belgian Legation, was charged with having driven a motor-car at an unreasonable speed through Harlech towards Barmouth. Defendant did not appear, neither was he represented. The police officer said the car was going at over twenty miles an hour. Fearing for the safety of hundreds of school children on the road, he raised his hand for it to stop, but defendant, who was accompanied by two others, took not the slightest notice. A fine of £5 and 24s. costs was inflicted.

At Lancaster Castle, William Laurence, manager of Vint's travelling choir, was summoned for furiously driving a motor-car between Dock Acre and Carnforth, he being timed to cover three-quarters of a mile in sixty seconds, and six miles (Carnforth to Lancaster) in just over six minutes. The Bench expressed their intention of stopping furious driving, and imposed the full penalty of £10 and costs.

At the West London Court, D. C. Willoughby appeared to answer an adjourned summons for driving a motor-car on the evening of August 28th in the High Road, Chiswick, at a greater speed than twelve miles an hour. Mr. Pierron appeared for defendant. According to the evidence of Police-sergeant Hardy, the defendant drove the car at the rate of fifteen to sixteen miles an hour, colliding with a bicycle and causing the rider to fall off. The defendant gave evidence that the maximum speed of his motor-car was eighteen miles an hour. The magistrate thought the speed of the car was not material, because in a road which was not congested it might be safer than even twelve miles an hour. Mr. Lane adjourned the summons again for the defendant to call two gentlemen who were with him on the car.

At Huntingdon, J. Cuthbert Pain, of London, was fined £3 and costs for furiously driving a motor-car, and Edward Trotman, of Long Acre, W.C. (who did not appear), was also fined £5 and costs for a similar offence. The defendants, it was said, drove at a rate of over twenty-four miles per hour.

At Abingdon, Henry Bland, of Coventry, was summoned for driving a motor-car at a greater speed than twelve miles an hour in the parish of Radley, on the 28th ult., and for an infringement of the regulations requiring lights on vehicles. Defendant did not appear. Police-constable Ponsford stated that defendant drove past him about 10 p.m. Witness rode hard after him on a bicycle, but could not get near the car until defendant pulled up at Kennington. He refused his name and address, and persisted in driving into Oxford after his light had gone out. Witness estimated that defendant drove about 800 yards at the rate of twenty miles an hour. A fine of £5 was imposed for the furious driving, with 10s. costs, and £1 inclusive for driving without a light.

At Llandrindod, Alfred Wilkinson, motor-car driver, was summoned for furiously driving a motor-car. He denied the charge. Police-constable Lloyd said that on September 2nd, about seven o'clock at night, he saw defendant driving a car along the High Street at a furious rate. Defendant was going seventeen to twenty miles an hour. Defendant denied that he was driving furiously. He was only going at the rate of eight miles an hour. He had driven 13,000 miles last summer, and never received a complaint. The Chairman said the case had been proved, but as it was the first offence he would be dealt leniently with, and fined 10s. and costs, with a warning as to the pace in future.

At Coventry, George Bonfield, of Bridport, was summoned for driving a motor-cycle at a furious rate, and pleaded not guilty. Evidence was given by Police-sergeant Northover showing that on September 4th at 7.30 p.m. he was on duty in the market place and saw Bonfield riding a motor-cycle at a furious rate, going considerably over twelve miles an hour. There were a number of people about at the time, and they had some difficulty in getting out of the way. Defendant cross-examined the witness at some length, and pointed out to the Bench that he was not stopped on the day of the offence. He also explained to the Bench the working of the motor-cycle, maintaining that it was easy to be deceived as to its pace, owing to the working of the engine. The pace was not above ten miles an hour. Defendant was fined 6s. 6d. and 13s. costs.

At Knaresborough Petty Sessions, Edwin Midgley, of London, and Frank Murgatroyd, of Idle, were charged by Police-constable Sweeting with furiously driving motor-cars on the York Road near Allerton. Both defendants were fined 40s. and costs. Captain Haigh, of Harrogate, was charged with a similar offence, but after hearing the evidence the Bench dismissed the case.

At Crediton, Jules Mayer was charged with furiously driving a motor-car at a greater speed than fourteen miles an hour. Defendant did not appear. The solicitor for the prosecution stated that the motor-car, in which were five persons, ran through Crediton at a terrific pace. Near

New Bridge, the car collided with a trap. The pony was thrown down, and, like the trap, injured. The driver of the car never stopped to see what damage was done. George West, of Exeter, said he was driving a pony and trap, near the Three Horse Shoes. He should imagine the car was proceeding at forty miles per hour. The pony caught sight of the approaching car, and swerved a little. The car immediately ran into it, the trap was capsize, and he was thrown out. He (witness) hurried to Exeter and found the car at the New London Inn Yard. He heard a lady and gentleman conversing about the accident, and asked for the name, but they refused to give it. He only secured the information when he brought a policeman. Police-constable Rowland, Newton St. Cyres, said he saw the car going through the village at twenty miles per hour. He afterwards saw Mr. Mayer, who admitted colliding with the trap. The Bench came to the conclusion that the driver, on account of his not taking any notice of the accident, was conscious that he was exceeding the rate of speed allowed, and therefore inflicted the full penalty of £10 and costs.

At King's Heath, Paul Auriac, of Birmingham, a Frenchman, who said he was a motor mechanic at the Warwick Tyre Company's works, was fined 40s. and costs for furiously driving a motor-car on the Bristol Road, Selly Oak, on August 25.

At King's Heath, Claud May, of Moseley, was summoned for driving a motor-bicycle at a furious pace through King's Heath, on the 14th ult. Police-sergeant Davis stated that defendant travelled along High Street at the rate of fourteen miles an hour, at least. A large number of people were about at the time. A fine of 20s. and costs was imposed.

At the Spittlegate Petty Sessions, held at Grantham, Jules Mirronneau, of Carlton House, Worksop, Notts, was fined £10, including costs, for driving a motor-car at a greater speed than twelve miles per hour along the Great North Road, on September 19th. Evidence was adduced showing that defendant drove a motor-car through the village of Colsterworth at a speed of over twenty-five miles per hour. The defendant's solicitor said the pace was impossible, as the car was only geared to twenty miles per hour.

At Ashford, a gentleman named Wells, of London, who did not appear, but sent a clerk with a letter, was summoned for furiously driving a motor-car. Edward Webb, a police officer, stationed at Bra-bourne, gave evidence that he timed the defendant's motor-car over a measured quarter of a mile, and he did the distance in forty seconds, or a rate of twenty-two miles an hour. George Thomas Smith, another constable, gave similar evidence. They also stated that the defendant said some constables would take a sovereign to square these matters, but he supposed he must not attempt to bribe them or they would split on him. The defendant's clerk said he was instructed to say that he only made that remark jokingly. The Chairman said they had decided to convict, and fined defendant £5 and 13s. costs.

At Stirling Sheriff Court, a charge of furious and reckless driving on the part of James Hawthorn, a driver in the employment of the Thames Valley Motor Company, London, occupied three hours; the evidence being of a most contradictory and conflicting nature. It appeared that a motor-car had been engaged by David Thomas, a J.P., of Ashburton, Canterbury, New Zealand, and in it, along with members of his family, and with Hawthorn as driver, he had been touring in Scotland. On the 6th ult., the party was in Killearn district, and it was alleged that on the Stockiemuir Road, through reckless management of the motor-car, they ran into a two-horse dog-cart belonging to Colonel Blackburn, of Killearn, doing damage to the amount of £11 or £12, and putting the occupants, Mrs. Blackburn, Miss Mary Blackburn, and Miss Lilian Blackburn, into jeopardy. The defence was a general denial of the averments of the prosecution, with an allegation that the dog-cart was on the wrong side of the road. The Sheriff remarked upon the contradictory nature of the evidence, but held there was sufficient testimony to prove the charge.

A fine of £5, with the option of thirty days, was imposed. Notice of appeal was given.

At Staines, on Wednesday, J. Da Costa, of Hatton Garden, London, was summoned for driving at a greater speed than twelve miles per hour at Chertsey. The police evidence was to the effect that defendant covered a distance of 176 yards in twenty-two seconds, or at the rate of over sixteen miles per hour. Defendant, who was driving a tricycle with trailer and two passengers, stated that he was travelling up-hill when the policeman stopped him. Defendant cross-examined the policeman and his witness, and drew the magistrate's attention to contradictions in their statements. Mr. Parry, a motor expert, testified that it was impossible for the tricycle and trailer to mount a hill at the speed alleged by the police. The magistrate gave defendant the benefit of the doubt and dismissed the summons.

Five motorists were prosecuted at Ashford, Kent, for driving at an excessive speed along the highway. The motor-cars were timed over a measured course, and the speeds averaged from nineteen to thirty miles an hour. Thomas Lewin, of London, who failed to appear, was fined £10 and costs, and Harold Norfolk, of Blackheath; William Crawley, Westbourne Grove, W.; and Mr. and Miss Edwards, of Ashford, were fined £5 and costs each. The Bench intimated that future offenders would be more heavily fined.

At Rugby, Arthur Grosdy, of Beauchamp Hall, Leamington, was fined £10 and costs for driving a motor-car at a furious rate. Defendant pleaded guilty, but said he was only going sixteen miles an hour, and should not have travelled at that speed if he had not been pushed for time. Evidence was given to the effect that the car was going at the rate of thirty miles an hour.

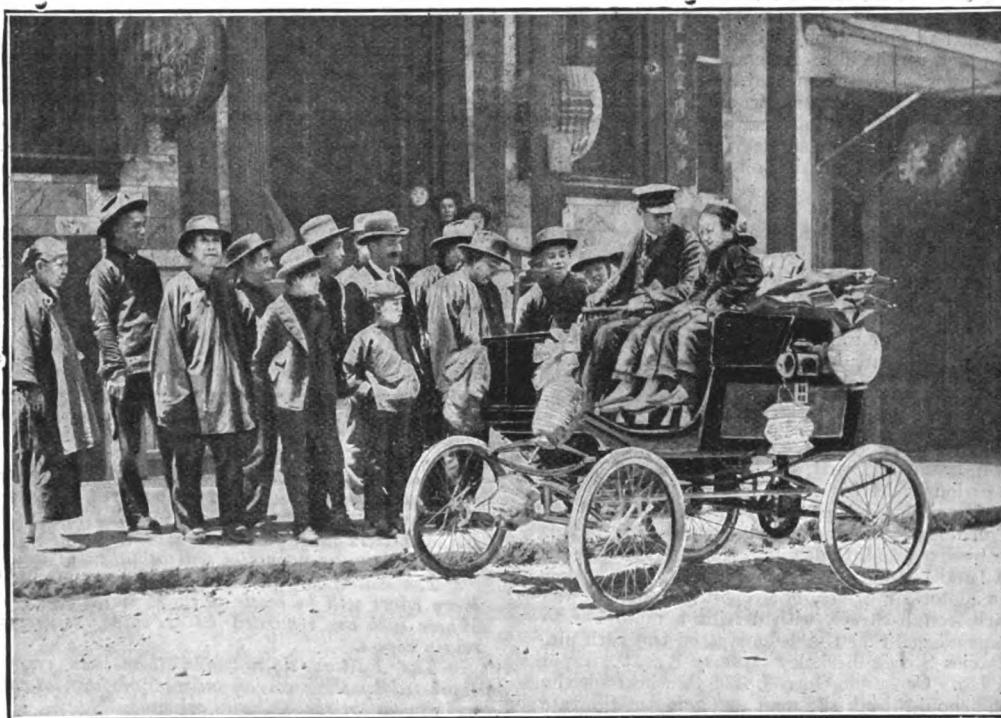
At the Eastern Ainsty Petty Sessions, at York Castle, Chas. Loraine Barrow, of Askham Richard, was summoned for furiously driving a motor-car on the highway. The defendant did not appear. Police-sergeant Hutchinson deposed that on Sunday afternoon, the 8th ult., he was on duty on the York and Tadcaster Road, when he met the defendant, who rode half a mile in sixty seconds. The Bench said they would have to put down furious driving, and defendant would be fined £10 and costs.

At York, Ernest Jennings, of Fairfield, Clifton, motor-car driver, was summoned for furious driving. Police-constable Russell spoke to seeing the defendant driving on

the Boroughbridge Road at from twenty to twenty-five miles an hour. The defendant, who admitted that he had previously been convicted of furious driving near Peterborough, was fined £10 and costs.

At Hereford, C. P. Levilly, of Great Portland Street, London, was fined £5 and £2 13s. costs, for driving a motor-car at a greater speed than fourteen miles an hour on August 3rd. Three witnesses deposed that the pace was quite twenty miles, and that the driver paid no attention to horses on the road.

At Brighton, F. Bartlemie, of Hove, was summoned for driving a light locomotive at a greater speed than was reasonable and proper. According to the evidence of Superintendent Hale and other witnesses, about 10.45 p.m. on Saturday, the 14th ult., defendant was driving the car in question on the King's Road. The witnesses estimated the speed at about twenty miles an hour. At the time there were several hundred people and cabs in that neighbourhood. The car proceeded along the King's Road at a very fast rate, and crossed over to its wrong side in turning up Ship Street. One witness said that the car was going so fast that it looked "like a flash of lightning." The defence was that the car was provided with four different speeds and that it was being driven on "second speed," a rate of about 8½ or 9½ miles an hour. It was a very noisy car and appeared to be going faster than it really was. The Deputy Stipendiary fined defendant £10 or in default fourteen days' imprisonment. Mr. C. W. FREEMAN, 35, Finsbury Pavement, while driving a motor-car in the City was asked by Police-constable Morse why he brought his



THE LOCOMOBILE IN CHINA TOWN, SAN FRANCISCO.

"stink pot" to the City. Protesting naturally against the policeman's impudent interference he was threatened with immediate arrest, which the sapient constable subsequently commuted to a summons for driving to the common danger. Sir James Ritchie, after hearing evidence at the City Summons Court, dismissed the case, with a remark that he was satisfied no offence had been committed by the motorist.

At Swainsthorpe Petty Sessions, Mr. S. F. Edge, of London, was summoned for driving a light locomotive on August 16th on the road leading from Norwich to Bramerton, at a greater speed than twelve miles an hour. The defendant, who did not appear, addressed a letter to the Chairman of the Bench. The first witness called was William Mitchell, farmer, of Kirby Bedon, who said that at about a quarter to nine in the morning he was on the Kirby Road. Looking up the hill towards Norwich he saw a cloud of dust. Presently he saw that it was a motor-car. It came flying down the hill and passed at a very rapid pace. Police-constable Powles, stationed at Trowse, said that between half-past eight and nine o'clock he was in his yard adjoining the house next the road, when he saw a motor-car going in the direction of Kirby Bedon. He believed the car was travelling twenty miles an hour. On the evening of the same day he was on duty in Trowse Street when he saw a motor-car coming from Kirby. It was then going fifteen or sixteen miles an hour. On the following Saturday the defendant, hearing that inquiries about him were being made, went to the County Police Station in Norwich and gave his name and address. Fined £5, with £1 12s. 9d. costs.

At the Cinque Ports Petty Sessions, at Margate, Charles Higgins, of Margate, was summoned for driving a motor-car at a greater speed than twelve miles an hour. Defendant pleaded guilty. P.C. Hayward said he saw the defendant driving a motor-car through Vicarage Street at the rate of twenty miles an hour. He put up his hand and stopped him. The defendant said that something had gone wrong with the clutch and he was obliged to put on speed to get up the hill. Defendant was fined 40s. and 10s. costs; in default, one month's imprisonment.

At the Rotherham West Riding Police Court, Ernest Hardy Pickford, of Rotherham, was summoned for driving a motor-car at a furious rate at Bramley on the 7th of September. Police-constable Ward stated that on the date in question he was standing at a certain point on Bramley Hill. He saw a motor-car passing Welcliffe House, and a cloud of dust arising. He started his watch, and timed it from point to point. It travelled the distance in thirty seconds, which was at the rate of 25½ miles per hour. In answer to questions, witness said he stood at the point for half-an-hour, waiting for motor-cars, and he started his watch as soon as he saw this one. For the defence, Mr. Gichard pointed out that it was a very difficult thing for anyone to take time in the manner it had been done by the constable. Mr. Pickford had not purchased the car for the purpose of attaining high speeds. It was only made to attain a speed of sixteen miles per hour, and it was impossible to drive it at that rate uphill. The Chairman announced that the case would be dismissed. The constable was doing his duty in bringing the case forward, but they thought he had made a slight mistake in the time.

At the Tewkesbury County Police Court, Frederick Yates, of Trowbridge, was summoned for furiously driving a motor-car in the parish of Leigh. Police-constable Robinson stated that he stopped the car, which was going at twenty miles an hour, by laying his bicycle across the road. Defendant being asked why he drove so furiously said it did not matter on a country road. A fine of £2 and 14s. 6d. costs was inflicted.

GEORGE NORTIER, 21, a motor-car driver, of French nationality, was charged on remand, at Marlborough Street, with driving a motor-car to the common danger. It was alleged that the defendant on the 14th ult. drove a motor-car along Davies Street, Berkeley Square, W., at a rapid pace, and knocked down a lad. Constable Garrod, 334 C, who took the accused into custody, said he should think the man was going at the rate of thirteen or fourteen miles an hour. He did not hear the accused blow his horn. The boy was so injured that he had to go to a hospital. The defence was that the accused blew his horn three times, that he was only going at a slow pace, and that the accident was unavoidable. Mr. Plowden said the defendant appeared not to have sounded his horn, and had thus shown negligence. He would have to pay forty shillings.

At Margate, Mr. Jack Lawson was summoned for driving a motor-car at an excessive speed at Margate. The case has several times been adjourned for the defendant to appear, and on the application of his solicitor it was now heard in his absence. Mr. Elliott (sanitary inspector of Margate) said the car was going more than 30 miles an hour. It was not more than 15 seconds going 220 yards. P.S. Morgan also corroborated. Mr. Armstrong said there was no case, as it had not been proved that the car belonged to defendant. The Bench thought it was not a question of ownership but of driving, and the defendant was fined £6 2s., including costs.

At the Doncaster West Riding Police Court, Adam M. Singer, of Hove, was summoned for driving a motor-car over 12 miles an hour at Bentley on the 8th ult. Sergeant Pearson said that on the date mentioned, about 4.15 p.m., he saw the defendant approaching from the direction of Doncaster, driving a motor-car at a furious rate. He shouted to the defendant that he was going too fast and must stop. He had measured the distance from a given point, and found defendant had travelled 820 yards in 1 minute 20 seconds. Mr. Baddiley said the defendant held a French certificate for driving motor-cars. The Bench imposed the maximum penalty, viz., £10, and ordered defendant to pay the costs also.

At Farnham Petty Sessions, Count Seilern, of Frensham, was summoned for driving his motor-car at an excessive speed on August 3 and 4. Mr. Crundwell prosecuted on behalf of the police, and Mr. Fleming, barrister,

appeared for defendant. Mr. Fleming said it would be in the recollection of the Bench that he obtained an adjournment of the summonses a fortnight ago on the ground that two of the defendant's witnesses, Count de Pret and Mr. Goldsmith, were unable to attend. He was still in the same difficulty, and was now instructed by the defendant to say that he would not defend the cases, because he was of opinion that if he went into the witness-box and gave evidence he would not be believed. Mr. Fleming afterwards stated that he was instructed by the Count to withdraw from the cases. The evidence was, therefore, taken shortly. The police stated that the defendant drove his motor-car at Farnham on the first-named date at a speed of over 30 miles an hour, and on the second at over 15 miles an hour. A fine of £10 and costs was imposed in each case.

At Doncaster, Rupert Beckett, a justice of the peace, was summoned for driving a motor-car at excessive speed. Police witnesses stationed on the Great North Road alleged that defendant was travelling from twenty-five to thirty-two miles an hour. The defence was that a spring broke and the defendant was unable to properly regulate the speed of the car. The magistrates imposed a fine of £10, and allowed a second summons to be withdrawn.

THE French Minister of Agriculture has given his support to a public competition for motors worked by alcohol, which is a national product, in contradistinction to petrol, which is imported. There will be four classes, namely:—(1) Fixed engines; (2) portable engines; (3) automobile engines; (4) launch engines.

FORAIN, the French caricaturist, is unlucky in his auto-mobiling experiences. It may be remembered that he started in the tourists' section of the Paris to Berlin contest, and that when Rheims was reached at the end of the first day's stage he had already dropped out of the running. He tried to catch up afterwards, according to his own account, but he was not seen again on the road to Berlin. Now the artist has had a bad spill in the suburban woods of Marly. He was driving a voiturette, with a friend by his side, in a lane with many deep ruts. A wheel of the car stuck in one of the latter. By tugging at the steering wheel the car left the rut, but ran into a clump of trees on the side of the road and upset. Forain and his friend were thrown out violently. The artist crawled from under the car uninjured, except for a few scratches, but his fellow-traveller, who was thrown to some distance, was hurt in the shoulder.

TO CORRESPONDENTS.

All communications intended for insertion in this Journal or relating to Editorial matters should be addressed to THE EDITORIAL DEPARTMENT, MOTOR-CAR JOURNAL, 39 and 40, Shoe Lane, London, E.C. Letters must in all cases be accompanied by the name and address of the writer, as no notice will be taken of anonymous communications.

The Editors cannot undertake to return MSS. or drawings, although every effort will be made to do so in the case of rejected communications. Where such are regarded as of value, correspondents are requested to retain copies.

The Editors do not hold themselves responsible for the opinions expressed by their correspondents, or for statements and facts which do not appear in the editorial columns.

The Editors and publishers beg also to state that they will accept no responsibility for unsolicited contributions, even if used, unless payment for same is directly specified in forwarding, and the terms arranged before publication.

To insure insertion communications and contributions must be in the Editor's hands by Wednesday forenoon of the week in which the same are intended to appear. Disappointment may be caused by non-compliance with this rule, and to avoid this earlier receipt, if possible, is necessary.

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THE Motor-Car Journal.

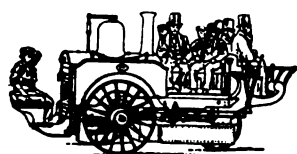
VOL. III.]

LONDON, SATURDAY, OCTOBER 12, 1901.

[No. 136.]

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COMMENTS.



WE believe that Mr. George Peacock, 84, Bathurst Street, Sydney, is the first motorist in Australia to appear in a police court for "furious" driving. He was summoned for driving at a speed of more than eight miles an hour. Constable Archinal stated that he saw the defendant drive the motor-car into the Domain through Macquarie Street. Noticing the excessive speed at which the car was travelling, he took out his watch and timed it, calculating that it covered a distance of a mile and a half at the rate of about eighteen miles an hour. Defendant, who pleaded not guilty, said the vehicle had recently been undergoing repairs, and he was giving it a trial. He was not aware that he was travelling at the speed deposed by the constable. A fine of 10s. and 5s. 6d. costs, or three days' hard labour, was imposed. Evidently one touch of the policeman will make the whole world kin—so far as the motoring section of it is concerned. Alas! that in such a country as Australia the antiquated prejudice of English county justices should flourish and prosper.

The "Good Girl" Misbehaves.

ON Friday last we had the pleasure of a short conversation with Lord Kingsburgh at the Automobile Club, and learnt that he was going on the following Tuesday to bring his Delahaye car home from Stirling, where the "Good Girl!" had been since her mishap in the Glasgow trials. Apparently the young lady, after her rest, was somewhat lively, for we learn that the Lord-Justice-Clerk of Scotland has experienced a nasty motor-car accident. While he was driving a party of friends along the high road near Dunning, the vehicle collided with a bulky cart and tumbled down an embankment, throwing the occupants out in various directions. One gentleman had an arm fractured, but the other occupants fortunately escaped without injury.

A Wall of Despair.

COMMENTING on the cases recently before the Grantham Court a correspondent in a Spalding paper records a conversation with a local motorist who has come to the belief that "there's no pleasure in motoring nowadays. When you see a policeman in uniform you must slow down to four miles an hour; and if you run up to the legal limit you are in fear and trembling lest the man you have just passed on the road should be an officer in plain clothes. Life's a misery on a motor-car, and I'm open to sell mine to the first customer." This is a very despairing way of putting the matter, but it is scarcely an exaggeration, with the present haphazard system of speed calculation practised by the police.

Wellingborough adopts Motor Dust Vans.

AT the last meeting of the Wellingborough District Council, the General Purposes Committee reported that they had considered designs and specifications of motor-vans as follows:—Messrs. Coulthard, motor and van £560, trailer £95—£655; Messrs. Bayleys Limited, van £700; Messrs. Simpson and Bibby, motor and van £600, trailer £50—£650. After hearing the report of the assistant surveyor, the Committee were of opinion that the motor van and trailer of Simpson and Bibby is the machine best adapted for the use of the Council. On the motion of Mr. James, the report was adopted, with the suggestion that the Chairman of the Council, the Chairman of the General Purposes Committee, and the assistant surveyor first inspect one of the vehicles at work.

The Speed of Motor-Cars in Scotland.

AT the meeting of Helensburgh Town Council on Saturday last Bailie Bryden moved that a memorial be presented to the Secretary for Scotland calling attention to the danger to the public safety arising from his Lordship's new regulation extending the driving speed of light locomotives on highways to twelve miles per hour, and respectfully suggesting that within burghs and populous places the speed should be restricted to eight miles per hour. Councillor Watson seconded, and the motion was unanimously agreed to.

The Width of Roads.

LITTLE has been said in the many discussions on roads which have lately taken place, as to the influence which the width of roads should have upon the matter. A speed which would be rather hazardous on a road fifteen feet wide might be perfectly safe on a main thoroughfare of twenty-five feet in width. This is a point which should be remembered by the public, and one which should induce motorists to utilise their influence to secure widening of the roads wherever possible. Thousands of miles in the Highland counties are not fifteen feet wide, and in England many long roads could be widened with increased safety to those who use them.

Motor-Cars in the Australian Postal Service.

WE learn from Melbourne that a trial has been made by the Federal Postmaster-General of clearing letter pillar-boxes by means of a motor-car. St. Kilda and Caulfield districts were chosen for the experiment. There are about forty pillars in the district, and the usual mail horse van takes three and a-half hours to cover the ground and complete the work. The motor-car did the distance and work easily in an hour and a-half, and that during the heaviest street traffic of the day. It is probable that in a very short time motor-cars will be utilised for this work in Sydney and all other large centres in Australia.

A Novel Advertising Car.

ALTHOUGH the motor car has now become quite a recognised form of locomotion, and no longer attracts the attention of the passer-by, as was the case a few years ago, yet it can still be made an excellent advertising medium. Our illustration shows an automobile that the Kannenbeer Supply, Limited, have now running in London. The vehicle is a $4\frac{1}{2}$ h.p. De Dion voiturette, the special carriage work having been carried out by the Grosse Berliner Motor-Wagen Gesellschaft, of Berlin: The huge jug is of aluminium, painted to represent the firm's special package, while the "label" is formed by a shaped sheet of glass serving the purpose of a window through which the



driver can see where to steer. Even the side lamps take the form of miniature jugs. The driver sits inside the jug, which, however, can be taken off and a nicely upholstered seat substituted for it. Naturally, the Kannenbeer car is the centre of attraction wherever it goes.

Queries.

A SILLY person has written to a half-penny daily journal with regard to motor-omnibuses in London, and, repeating the statement that 14,000 passengers can be carried by 'buses in an hour past a specified point, he asks "how many of this mass of human beings will be destroyed or incapacitated should the new motor service come into vogue?" This sort of innuendo is part of the campaign of prejudice which automobilism has to encounter. Has there been an accident yet? Are ordinary 'bus accidents unknown? Is not all travel associated with risk? Is it not better to wait and see the results before lamenting over an anticipated catastrophe which is not likely to happen? These are a few questions which should be asked in conjunction with the foolish query that suggested this paragraph.

Omnibuses.

It is not generally known that France was the first country to run omnibuses on a systematic plan. Just as in automobilism she went well ahead at the start, so in omnibuses she became a pioneer. It was in 1662 that omnibuses ran from specified points at specified times in Paris; and not till 1800 was a similar attempt with horse-drawn vehicles made in London. Even then the scheme failed, and the century was nearly half through before anything like modern regularity was reached. Among the many attempts made, those of Gurney, Dance, Church, and Hancock, with their steam coaches, deserve recognition.

Motor-Cars V. Trams.

ALREADY great rivalry is arising in the United States between the automobile and electric tramway companies—a rivalry which, ere long, will find a counterpart in the motor-car and tramway competition in this country. At present the invested wealth in the trolley and tramway companies will be thrown into the scale against the motor-vehicle, but public convenience will soon demand a fair field for the latter. The vehicle that runs on a made-up track is at a disadvantage compared with the car that can be brought alongside the pavement for the convenience of passengers.

Golliwogg.

GOLLIWOGG has attained fame among small children, and those of a larger growth have laughed immoderately over his antics. Now he comes before us in an "Auto-Go-Cart," which has been published by Messrs. Longmans, Green, and Company. In a charmingly printed volume Miss Florence Upton gives us some capital pictures, and Miss Bertha Upton's rhymes fit in well with their pretty childish character.

"This is a most progressive age,
And with it we must move;
That even toys are up-to-date,
My master-piece shall prove."

Having thus reflected Golliwogg selects his party of girls for a ride on a fearfully designed vehicle, which words fail to describe. They start off on their journey when

"Sun! Moon! and Stars! What means this shock,
This sudden growth of the wings!
Do auto-carts behave like this?
Such peaceful-looking things!"

Having picked themselves up they recommence their journey, when they are arrested by the police, who

"Drive them, tied with yards of rope,
Into a darksome cell;
For scorching means a heavy fine,
Imprisonment as well."

How Golliwogg escaped will interest the children, and their adventures in a storm will remind motorists of that watery day when they returned from the Automobile Club's run to Southsea. Encounters with highwaymen, tire troubles, and explosions are, among other disasters, recorded, but Golliwogg had the true "motor spirit."

"He laughed about the accident,
And joked about the rain,
Till voting was unanimous
To take the trip again."

The book will be a capital one for presentation to the youngsters of motorists in the coming Christmas season.

An Early Steam Omnibus in Scotland.

IN 1834 a steam carriage was run between Glasgow and Paisley, but the Road Trustees of that date looked askance at the innovation, and on July 29th of that year they caused an unusual amount of "road metal" to be laid down on the hill at the Halfway House, with the evident intention of making it a stiff pull for the carriage. Their object was gained, but at the loss of life. The carriage came along in the usual manner, but

the hill was too much for it, and the boiler burst. A drawing of this incident may be seen in room No. 10, in the Memorials of Old Glasgow Section, at the Art Gallery in the Glasgow Exhibition, and the engine of the carriage itself is exhibited at the entrance to the same room.

A New Indicator.

THE difficulty of taking indicator-diagrams with explosive motors is well known, and an ingenious device for obtaining instructive records with such, though they are hardly indicator-diagrams in the usual sense of the word, deserves notice. It consists merely of a cylinder attachment to an ordinary indicator, driven by clockwork instead of the usual cord from the piston-head or similar part. The diagram thus shows a series of vertical lines showing the pressure at commencement of stroke, and the extreme pressure during same, together with the number of strokes, and some illustrations of its use published in the *Revue Industrielle* show clearly the way in which the effects of throttling, defective valve area, and the like are brought out upon the diagrams. The inventor, M. Mathot, has adapted it specially to automobile and similar high-speed engines by the introduction of a pair of cylinders and roll of paper, which enable diagrams of considerable length to be taken.

Roads Again.

MOTORISTS are so generally regarded as selfish people in their constant appeal for an improvement of the roads that it is gratifying to read in several journals, wholly unconcerned with our sport, a spontaneous backing up of the agitation set on foot by automobilists. It is not only the motorist who deplores the condition of some of our main roads, but owners of horses have long complained with good cause of the narrow paths and sudden turns of many of our highways. Now that the motorists are a growing as well as a moving force in the country some improvement should be made. We can claim it, for we have no horses' hoofs to destroy the surface, and that, it must be confessed by all, is the great cause of wear and tear on our roads.

The Last of the Dog.

CANINE existence is becoming precarious and irksome. A County Court judge having ruled that dogs have no right on the pavement, they have only the roadway in which to indulge in their interesting evolutions. The adoption of the bicycle, with its noiselessness and speed, has added to the risks of dog life, while the dog seems to retaliate by adding to the number of cycle accidents. The same thing will probably happen in the case of the motor-car. Motorists have long been familiar with the erratic conduct of dogs, which dart from the pavement to the rear and the front of the motor

with a rapidity of motion and a noisesomeness of manner that is decidedly vexing. Until dogs, too, are educated to recognise the virtues of the motor-car they may have a hard time. In fact, as regards the motor-car and the dog on the roadway it will be a case of the survival of the fittest.

Motor Talk.

A FAIR correspondent in one of the daily papers writes complaining of a grievance in connection with motor-cars that is rather amusing. She refers to "the motor-car conversation." Golfers, anglers, and other sportsmen have a habit of recounting their exploits over and over again, and she has discovered that there are motorists who treat all their friends at dinner or elsewhere to observations on speed and the incivility of drivers of restless horses. The subject of the conversation may be changed half a dozen times, but the motorist generally brings it back to automobilism, with the result that this fair lady

and her friends are wearied. The grievance is a really sad one. Why do not the ladies become motorists, and then pay the troublesome man-motorist back in his own coin? In such case the lady would undoubtedly win.

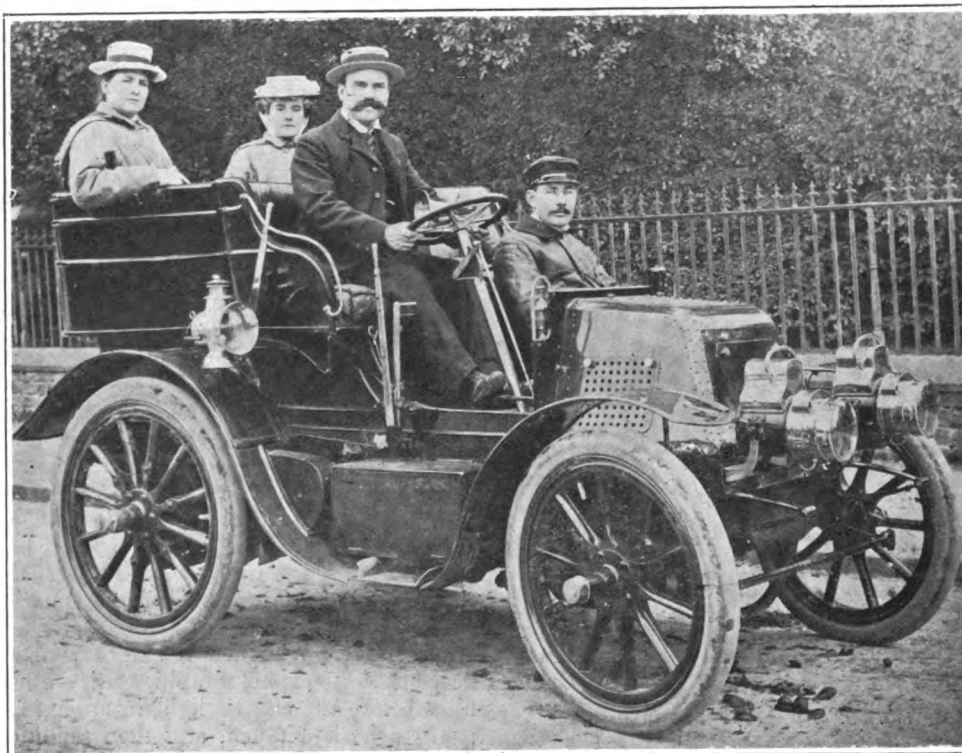
Horse Dealings.

MANY stories of dubious dealings in connection with horses are retailed in club-gossip and newspaper columns. We heard the other day of a purchaser of an automobile whose coachman was indignant with the seller of the vehicle because no commission was allowed him on the

purchase. He had been in the habit of receiving a present when his master bought a new horse, and he did not appreciate the absence of such a "tip" in the case of the motor-vehicle. In another instance a coachman set to work a motor-car had so many mishaps that the owner went to the firm from whom the vehicle had been bought and complained. "Had I given him £5," said the dealer, "all would have been well." The employer—to test the affair—instructed the dealer to send a bank-note to the coachman, and the motor then ran smoothly enough. The man was dispensed with soon after. It would be interesting to learn how many mishaps have been due to such a cause. We believe these are isolated cases, but that they have been reported should be a useful warning to buyers and sellers.

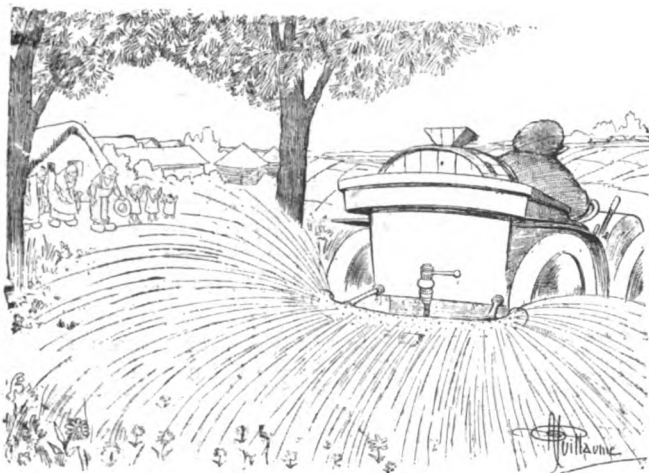
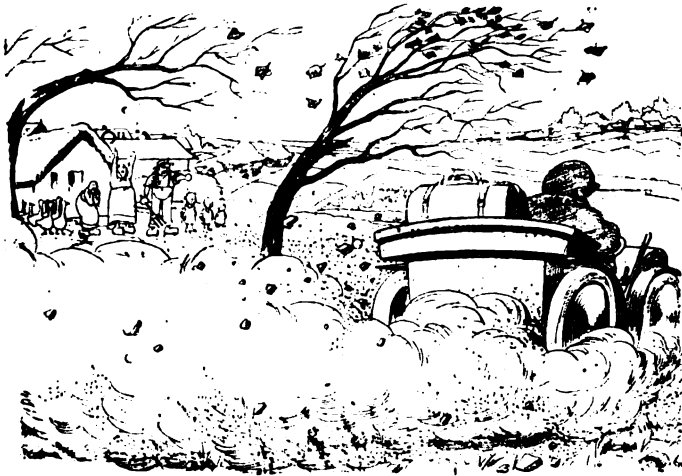
An 1,850 Mile Tour.

COUNT BOOS-WALDECK, an enthusiastic Austrian *chauffeur*, has recently made an extensive tour on his 20 h.p. Austrian Daimler car. Leaving Vienna early one morning in August, Munich (260 miles) was reached the first day. The journey was continued *via* Cannstatt, Heidelberg, Cologne, and Brussels to



MR. C. CORDINGLEY AND PARTY ON HIS NEW NAPIER CAR.

Ostend, which was reached in five and a half days from the time of leaving Vienna. After a short stay at the Belgian seaside resort the tour was resumed to Marienbad, the route chosen being *via* Paris, Chalons, St. Johann, Saarbrücken, Arnstein, and Hundsbad; altogether the tour extended to 2,975 kilometres, or, roundly, 1,850 miles. On another page we reproduce a photo of Count Boos-Waldeck's start from Vienna.



A FRENCH ARTIST'S SOLUTION OF THE DUST TROUBLE.
(*Le Français*.)

Some Sensible Pleas.

IN appearing before the Commissioners in an endeavour to keep them from passing a law making it obligatory for every motor-vehicle in Washington, U.S.A., to be defaced with a large licence number, the Committee of the National Capital Automobile Club recently summed up a very able attack upon the proposed law in these words: "In conclusion we state that from our standpoint the enactment of such a law would be an intrusion upon the rights of citizens, indefensible in its purposes, and wholly unwarranted by any existing condition. The horseless vehicle is a godsend to the healthfulness and cleanliness of the city, in avoiding the noise and jar incidental to the movement of horse-drawn vehicles, and to the heretofore enormous expenditure for city roadway. Could you do away with the horses' hoofs, their sharp shoes, and steel tires, the pavement would last indefinitely when constructed with even a tithe of its present strength and cost. We submit that such section ought not to become a law in anywise affecting motor-vehicles used for private purposes. We hold ourselves in readiness not only to demonstrate the truth and correctness of the propositions set forth, but challenge the supporters of this obnoxious measure to show any good cause or sufficient reason for its enactment."

The Cost of Motor-Cars.

THE demand of the general public is always for lower prices, but the public does not fully appreciate the fact that a lower price must necessarily mean a lower quality of material and workmanship, which will result in untold annoyances and troubles to the user, and, consequently, a higher cost in the end. The duties of an automobile are so severe that satisfaction can only be expected if both material and workmanship are of the best—and these are always expensive. There are, we find, many members of the general public who are hugging the belief that motor-cars at present prices bring their manufacturers a net gain of several hundred per cent. Such a belief, however, is entirely unfounded, the profit is in most cases only a very reasonable one, and manufacturers who are determined to maintain a high standard of quality have been inclined to advance their prices rather than reduce them. It is of the greatest importance to the industry in general that a high standard of quality be maintained. Cheapness of construction will lead to dissatisfaction, and the lasting injury that may be done by dissatisfied customers is certainly a more serious consideration than the loss of a few customers who cannot discriminate between the good and the cheap, or who abstain from buying because prices are too high, according to their ideas.

Photography and Automobilism.

AUTOMOBILISM is responsible for many hundreds of amateur photographers, and must be regarded as a valuable asset to the photographer. Every season thousands of films and plates are exposed from the seats of motor-cars, and an even larger number are directed towards moving motor-vehicles. The automobilist can thus obtain a photographic record of pleasant trips, while the local amateur snapshotter can amaze his friends with his wonderful photographs of cars travelling at any speed from ten to sixty miles an hour. But what startling monstrosities are perpetuated in the name of amateur photography! The hood of the car is often out of all proportion to the head of the driver, and the actual number of really satisfactory photographs is comparatively small. When they know that the glass eye of the camera is upon them automobilists have a habit of "sitting still and staid," so that all sense of actuality is entirely lost. If there is much in automobilism that puzzles the ordinary mortal, there is infinitely more in photography to confound the average automobilist. We once heard of a motorist—who has since developed into a photographic critic—unrolling a roll of exposed films before the electric light in order to see the outlines of the pictures he had taken, and then sending the whole roll to be developed!

Ingenious.

A SUGGESTION has been made in the United States which is characteristically American. The owner of an automobile complained to the makers that it had faults and inconveniences which caused him trouble. They retorted that his was an exceptional case, and hinted that he and not the machine was to blame. That caused him to think, and the result of his ruminations has been the formation of an "Owners' Information Bureau." All owners or users of American automobiles manufactured in 1900 or 1901 are invited to write to him giving their experience (a) with the machine and (b) with the manufacturer. These letters will be classified and printed, each writer forwarding 25 cents with his contribution. In that way it is hoped to get a thoroughly reliable criticism of all American vehicles. The idea is ingenious, and doubtless will be encouraged by the lawyers, who will recognise in its carrying out a splendid source of libel actions.

BOILERS on all steam motor-vehicles in Chicago will in future be subject to inspection, and will fall within the jurisdiction of the City's boiler inspector's department.

A WEEK-END IN FRANCE.

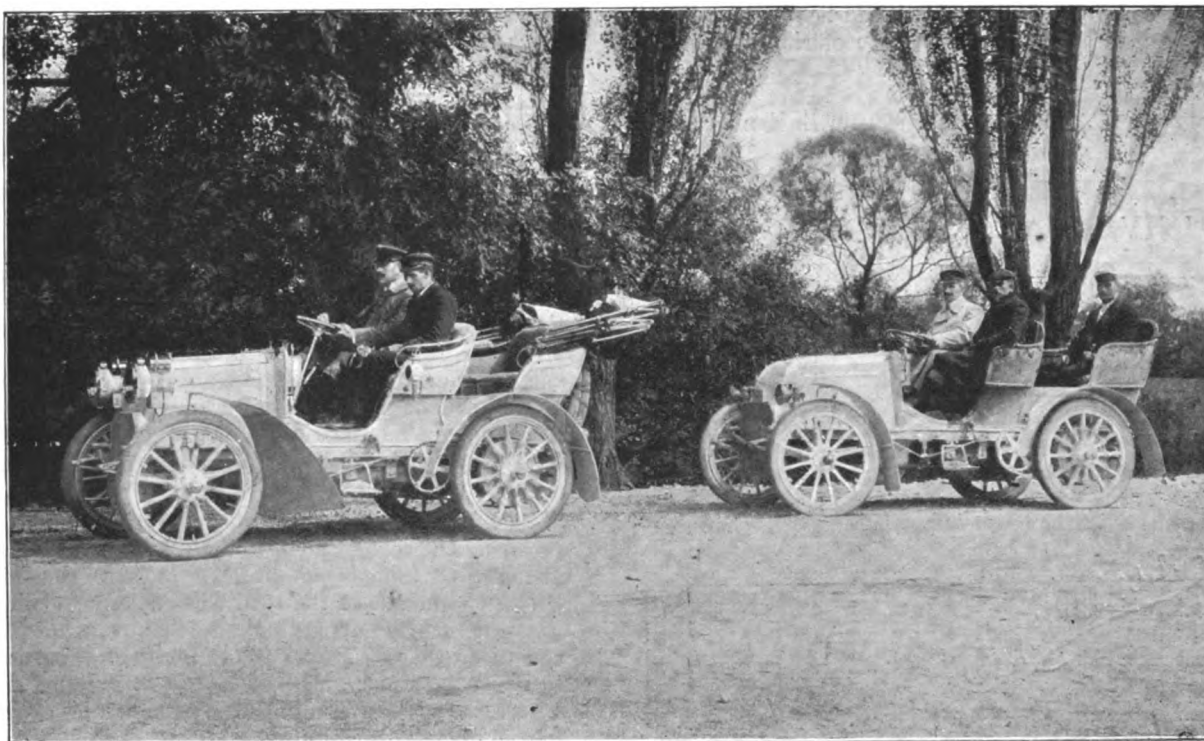


HAVING received an invitation from my brother-in-law to join him in a little run on his $3\frac{1}{2}$ h.p. De Dion voiturette to Caudebec-en-Caux, to see the "Mascaret," or tidal wave of the Seine, I bestirred myself, got through my work, and with a little effort caught the ten o'clock boat train from London Bridge for Newhaven on Friday, the 27th ult. A little under two hours and we were safely on board the Brighton Company's s.s. "France," and had cleared the harbour.

It was about 3.45 p.m. when I had cleared the Customs at Dieppe with my few belongings. This over, I made my way to the street and found my brother-in-law in waiting. It was but the work of a few seconds to stow myself comfortably on the car, and away we went right through the Grande Rue and then to our left up the Route de Rouen, well known to readers of Du Maurier's "Trilby." This stiff gradient negotiated in fine style, we soon found ourselves at St. Aubin-sur-Seie, where we completed our party by taking on board our wives. It would have been impossible to have had finer weather, the sun shone out

we had a clear run down of ten kilometres into Caudebec. The moon was then shining brilliantly, and the scenery of the last stage was something to remember; it equalled in grandeur and picturesqueness the finest Swiss scenery. To attempt to describe it is beyond my pen. It was close upon nine o'clock when we drew up at the Hotel de la Marine, Caudebec. A few minutes served to put "Diana" into the garage, and then we sat down to dinner, which we enjoyed to the full, for our appetites were distinctly keen after the long spin we had had. Saturday opened as fine as the previous day, and we spent the morning exploring the old parts of the town. We found ourselves fully repaid, for there are some quaint old Norman houses hidden away in Rue de la Cordonnerie and the Rue de la Boucherie that must be seen to be appreciated. The church is also interesting and worth visiting. After lunch we went for a short spin along the banks of the Seine as far as St. Maurice, and the opinion formed by us was that the scenery was equal to, if not grander, than that of the Rhine.

Sunday was the day that the "Mascaret" was supposed to be the finest of the year, but it failed them, as the wind was not favourable, consequently it was disappointing; still, the sight was



Cliche de

COUNT BOOS-WALDECK STARTING FOR AN 1,850-MILE TOUR. (See page 579.)

(Allgemeine Automobil Zeitung.)

brilliantly, and, tempered as it was with a pleasant breeze, I do not think it could have possibly been more auspicious for our start. Add to this that the roads were perfection, and I think we had all we desired. The clock was chiming the half hour after four o'clock when we made a start. Our next place was Bacqueville, a distance of thirteen kilometres; we did not stop here, but went right through on to Doudeville (twenty-three kilometres). There we stopped a few minutes to see that all was well, and then off to that quaint old-world Norman village Yvetot, a further eleven kilometres, making thirty-four kilometres we had travelled. Here we rested for about half-an-hour to oil up and water "Diana," as well as to refresh ourselves at the charming old café in the market-place. It was 6.30 p.m. before we had lighted up and were ready to start, having still the greater part of our journey before us. We turned to the left out of Yvetot and took the first road on the right to Bolbec; this we traversed for about twelve kilometres, then on our left we took a lane leading to Trouville (two kilometres). Arrived there, we bore to the left on the road leading to Caudebec for close on two kilometres, then, bearing to the right,

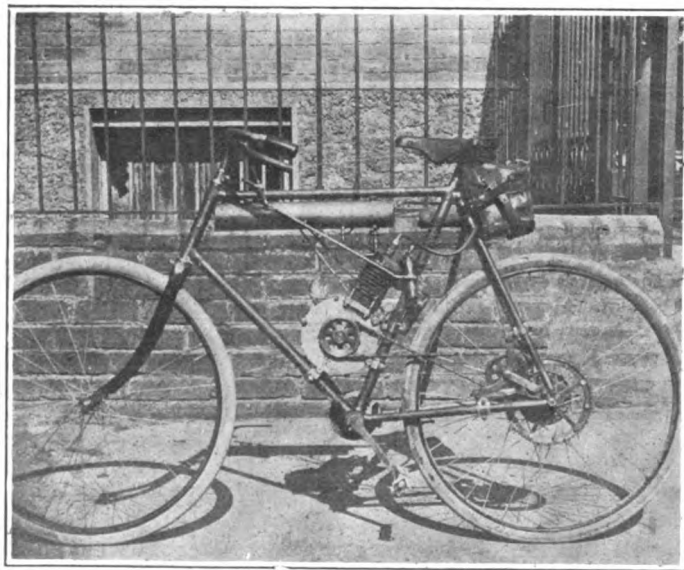
most interesting, and something which we had not seen before. It was now ten o'clock, so we paid our indebtedness, said good-bye, and started on the homeward tack, taking a different route to that traversed on Friday. Our first town of importance was Lillebonne; this we made circuitously to avoid a rather stiff gradient on the national road, taking the route we had followed on Saturday, keeping by the Seine's banks, and then through Fosge, Petitville and Mesnil to Lillebonne (fifteen kilometres), thence to Bolbec (six kilometres). From Bolbec our road lay to Goderville (eleven kilometres), which we reached about twelve o'clock, and passing straight through the town, we kept on to Fecamp. This, as we all know, associates itself with "Benedictine." After lunching at the Hotel d'Angleterre, we decided to restart at three p.m., so, after oiling and watering our trusty "Diana," we kept to our word and left punctually. From this point our next town was Cany (eighteen kilometres); this is the great junction for Dieppe and Havre, the Western Company of France having large sheds here, which are used as depots for produce, etc. On through Cany our way lay to St. Valery-en-Caux (eleven kilometres), a

most charming little watering place and largely visited by English during the summer months. From this point we steered for Veules-les-roses (six kilomètres), where we stayed about an hour, having found an obliging hostess at the Hotel de Rouen. Like St. Valery, this place is also well attended by English visitors in the summer. The only means of reaching it is by diligence from Dieppe three times a week, but, when you are there, it is simply Arcadia. At 5.20 p.m. we drove out of the hotel yard and headed for Dieppe (twenty-two kilomètres), passing through Bourg Dun. We went magnificently, "Diana" answering to our demands like a "Briton," and it was 6.15 p.m. when we drew up at my brother-in-law's house in Dieppe, having completed one of the most charming outings it has ever been my lot to enjoy. Beyond two little minor accidents with the machinery, occupying but twenty minutes in all to adjust, we had no mishap. In conclusion, I can only suggest to those readers of the *Journal* who can afford the time to take this little trip: it will repay them in many ways. They will see in France what we so much want in England, i.e., that in every village there shall be a decipherable indicator giving the name of the town or village, and also on the same indicator the distances to the next village, both from and to. Now that we have District Councils they could well introduce this much-needed improvement, and it could be done at a small cost. We noticed an entire absence of the officious policeman, with outspread arms, and, beyond seeing nailed up in two villages "Automobiles, marchez au pas," we did not come across any vexatious restrictions such as one meets in England.

"SYGOGNE."

THE "UNIVERSAL" MOTOR-BICYCLE.

THE accompanying illustration shows a new motor-bicycle of French construction which has lately been introduced into this country by the London Autocar Co., Ltd., of Gray's Inn Road, W.C. A feature of the machine, which is known as the "Universal," is the novel method adopted of transmitting the power of the engine to the rear wheel. As will be seen, the motor, which is of 1½ h.p., is carried in front of the main down tube of the frame; it transmits its power by a crossed strap to a small pulley carried on a special support on the rear frame. Combined with the latter pulley is a small pinion which



gears with a larger pinion fastened rigidly on the hub of the rear wheel. Although the large pinion is additionally attached to the spokes of the rear wheel, the fact that the power is transmitted through the hub as well as the spokes relieves, it is claimed, the latter of considerable strain. The engine is fitted with an exhaust valve lifter and a spray-type carburettor of small dimensions. We

understand that, in addition to complete machines, the London Autocar Co. are able to furnish the motor and its accessories separately to enable cycle makers to build their own motor-bicycles.

CONTINENTAL NOTES.

BY "AUTOMAN."

THE automobile made its appearance on the Paris stage many years ago, and scarcely any music-hall performance was then complete without some allusion to the new form of locomotion. I remember very well at the "Cigale," some three or four years ago, the amusing scene in an electric brougham, one side of which was cut away to allow the audience to see what went on in the inside, and the passengers, one of whom was, I remember, the renowned Jeanne Bloch, got an electric shock which effectually put an end to the love-making. It is now the turn of the navigable balloon, which appears in the music-halls which are just opening for the season. One peculiar feature of it is that there is a *chauffeur* in the usual fantastic French attire in charge of the balloon.

It seems from the recent balloon ascents and from many other signs of the times, that automobilists are more than anxious to take up this newer form of locomotion, and this is perhaps most suitable, because the petrol motor is likely for a long time to hold the field in aerial navigation, and half the battle with the air will consist in the skill of the navigator in keeping his motor in good condition.

CHARRON and Girardot have returned to Paris after their trip to America, and they fully confirm what has been already the opinion in automobile circles, that is, that the Americans are years behind the times in automobile manufacture and are still experimenting with designs of cars quite unsuitable for the requirements. Charron, however, thinks that the Americans will soon get on the right track and then be able to compete successfully with European makers.

In Belgium the authorities have the most casual way of repairing the roads, and it occurs frequently, when one is driving at night, that one comes on holes, tools or other hidden dangers left in the middle of the road without any warning light. The latest accident occurred to M. Deschamps, whose 12 h.p. motor-car was in the race from Paris to Berlin and was described by me in these columns. M. Deschamps, travelling from Paris to Brussels at night, ran into a heap of stones, his car being smashed up and himself badly injured.

FOR the information of English automobilists who may have the intention of taking their cars over to France, it may be well to give the readers of the *Journal* a few hints as to what they ought to do in order to conform with the new regulations. The latest date for conformation with the arrangement is the 12th November this year, after which time they will be subject to prosecution if they are not in line. In the first place they must send in a declaration certifying whether or not their carriage is capable of doing more than thirty kilomètres an hour on the level. This declaration must be sent to the prefect of police in Paris or in the town where they propose to land. If they have already a permit for France they must send this with their declaration. One month from the 12th November is allowed them, during which time they must have the numbers placed on their cars if they are declared capable of doing more than thirty kilomètres per hour. The address of the prefecture of police where these papers will be received and attended to is, The Second Division, Third Bureau, First Section, Caserne de la Cité, Paris.

ALPHONSE ALLAIS, one of the most amusing of French humorists, who has for years written amusing articles for *Le*

Journal and other papers, is devoting special attention at the present time to the automobile, and he makes some suggestions which "Automan" wishes to recommend to the special attention of some British magistrates badly attacked with "motophobia." Allais' idea is to construct a speed-counter with a dial marked up to sixteen kilometres (say, ten miles for England), which no doubt some people will consider the right speed limit. As long as the needle does not get up to the limit all is well with the motorist, but should he be so rash and commit so heinous a crime as to exceed the limit of speed, bang goes a dynamite cartridge which the duly-recognised authorities have placed under a seal alongside his engine, and there is an end to law-breaker and his unlawfully used motor-car.

MR. SYDNEY H. HOLLANDS is an enthusiastic devotee of aviation, but his enthusiasm has carried him altogether too far, and he seems to be oblivious of the fact that opinions on this subject differ. I am sure he does not mean, in reality, to mislead anybody, but enthusiastic people of this sort are apt to forget that the uninitiated public may take them seriously. I think this must be the case; certainly, as far as I am personally concerned, his judgment is quite at fault. I do not pose as an authority on this controversial question, and I began my comments on his first letter by saying so, but in common with all those who, like myself, have taken a keen interest in this subject, I have followed in the Press the accounts of the experiments made in this direction.

I WAS, I will confess it, startled by his latest letter, because I thought that some wonderful flying-machine must have been constructed which I had never heard of, and my astonishment increased when I carefully re-read his letter, and found that it alluded to the well-known experiments in soaring and steam flight which all the world knows of; but why, or how, Mr. Hollands should call these "practical results" I cannot understand. Why does he not go back fifty years and quote Stringfellow's experiments, which attained nearly the same success as those quoted by Mr. Hollands. I can only repeat that no practical result has yet been achieved in this direction. Professor Langley's Aerodrome was an experimental model carrying no human being, and launched by springs from a high platform. Lilienthal soared down mountain sides until he met his sad end. Chanute glided along from the summit of the sand banks of Lake Michigan, and Hargraves is still in a state of crude experiment. To call these "practical results" is quite misleading to the public, and Mr. Hollands might as well cite the toys that one sees flying up to the roof of the Westminster Aquarium.

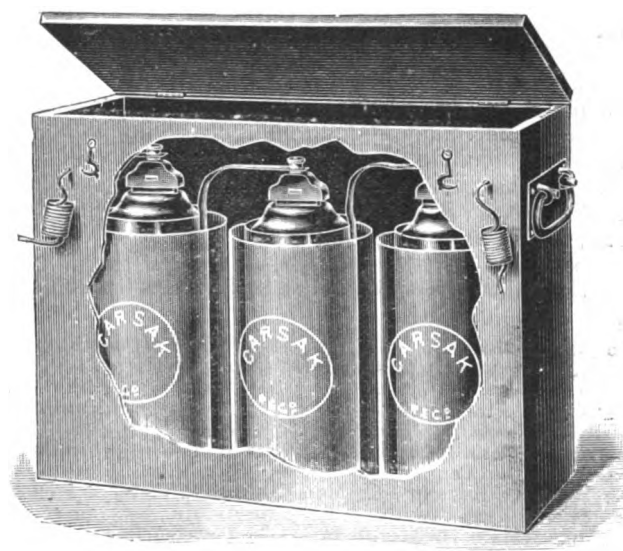
M. SANTOS DUMONT, on the other hand, has repeatedly risen from the ground, made long and complicated flights backwards and forwards, describing curves, rising and sinking, and coming back with perfect ease to the spot where he started from. These are practical results indeed, and though I am far from saying that aeroplanes will never be successful, I hold the opinion, in common with M. Santos Dumont and many others, that a combination of the aeroplane and the balloon is far more likely to be the successful flying machine of the future. Mr. Hollands, however, falls into error again when he ridicules my comparison between a bird's wing power and the power given off by a motor, and asks me where I can find a bird having 1 h.p. per 7 lb. of weight. I cannot find such a bird, nor can Mr. Hollands find such a flying machine, for, instead of comparing the weight of the bird's motive power with the weight of the motor, he compares the whole bird with the motor, which is obviously absurd, and my assertion that man can never expect to make a flying machine without the use of hydrogen, as light in proportion to its power as a bird is in proportion to its wing power, stands good.

MR. HOLLANDS finishes up by protesting against my calling M. Santos Dumont's flying machine a "gravity navigable balloon," and it is quite evident to me that he has never really

realised M. Santos Dumont's principle. As I have already stated in the *Journal*, on the authority of M. Santos Dumont, the young Brazilian is an advocate of the gravity principle, his navigable balloon is heavier than the air and is raised from the earth solely by means of the propeller. Why, therefore, should it not be called a "gravity navigable balloon"? In conclusion, I may say that I respect every man's opinion, including that of Mr. Sydney Hollands, and should be glad if Mr. Hollands would add to his expressed courtesy the same respect for my opinions.

THE CARSAK PRIMARY BATTERY FOR ACCUMULATOR CHARGING.

A GREAT drawback with the use of small accumulators is often the inconvenience of recharging. This difficulty can be overcome by the use of primary batteries, enabling a motorist in the country to be independent of a dynamo current. Among the many types of primary batteries that have been recently put on the market is the "Carsak," made by the General Electric Company, Limited, of Queen Victoria Street, E.C., and of which an illustration is given herewith. One of the chief claims made for the battery is its low internal resistance, and consequent high output, which, moreover,



is steadily maintained. The inactive element consists of a porous cell, containing the necessary particles of carefully selected carbon and manganese packed together, and held in position by a cylinder of sacking. The positive element is a specially constructed cylinder of zinc, of guaranteed 98 per cent. purity, and thoroughly amalgamated.

The electrolyte consists of a patent non-crystallising battery salt, called "salectron," mixed in the proportions of two ounces to one pint of water. When, through evaporation, the level becomes reduced, a little water should be poured in. The battery which is sold for recharging automobile ignition accumulators comprises either four No. 0 cells, or four No. 1 cells, complete in a box, as shown. The No. 0 cell has an E.M.F. of 1.6 volts, and initial current of 14 amperes and internal resistance of .12 ohms. The No. 1 cell has an initial current of 10 amperes and an internal resistance of .16 ohms. To set up the battery place about ½ lb. of salectron or sal ammoniac in each jar, and half fill with water, stir with a stick until the salts have dissolved, then place one zinc and one Carsak element in each jar, and connect the zinc of one cell to the carbon of the next, repeat the process until a zinc at one end and a carbon element at the other end remain unconnected. Connect these two to the accumulator to be recharged—the positive terminal + of accumulator connect to + or carbon element—the zinc to the negative—and so complete the electrical circuit. The battery should be allowed a rest of twelve or fourteen hours after use.

CORRESPONDENCE.

THE SHOW QUESTION.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Mr. Baily in a recent letter stated that the following resolution, passed by the representatives of the trade at the Automobile Club of the 11th June, 1901, was not carried unanimously:—

"That there shall be only one exhibition per annum; that it shall be under the same management as the recent exhibition; that it shall be at the Agricultural Hall at the same time approximately as the recent exhibition, and under the control of the Automobile Club."

Although it may not be so stated in the official minutes, I believe that no one voted against this resolution. Be that as it may, it is officially recorded, and the correctness of the record has never been questioned, that the arrangement referred to in the above resolution was adopted by those present by a unanimous vote on the following resolution:—

"That the Automobile Club of Great Britain and Ireland shall have the right to refuse space at their exhibitions to all who have exhibited automobiles, or their parts, at any exhibition within twenty miles of Charing Cross, which is not recognised by the Automobile Club."

* Mr. Baily endeavours to minimise the importance of the second resolution by saying that it is of a general and philanthropic character, whereas, in reality, it is a resolution by which the trade showed their determination not to permit disloyalty in their ranks to the decision of the majority. This resolution was passed in consequence of the suggestion made by Mr. S. F. Edge at a previous meeting that some such precaution might be necessary. Mr. Baily states that the meeting at which these important resolutions were passed was poorly attended. Permit me to state that all members of, and agents for, motor-vehicles were invited to be present, or, failing that, to fill in proxy forms, giving their votes on the questions to be decided at the meeting.

The following companies and makes were personally represented at the meeting:—

The Daimler Motor Co., Ltd.	The Simms Motor Manufacturing Co.
The Motor Manufacturing Co., Ltd.	The New Orleans Motor Co.
Messrs. Panhard and Levassor.	The Automobile Manufacturing Co. (Delahaye, etc., cars).
The British Motor Traction Co.	The General Automobile Agency (Darracq, etc., cars).
The Motor Power Co. (Napier cars).	Messrs. F. F. Wellington, Ltd.
The United Motor Industries, Ltd.	Messrs. Humber, Ltd.
Messrs. De Dion Bouton, Ltd.	The Petromobile Co.
The Roadway Autocar Co. (Mors and Renault car-).	The British Power, Traction, and Lighting Co. (Serpellet cars).
The Motor-car Co. (Decauville cars)	The Sports Motor Co.
Messrs. Friswell, Ltd. (Peugeot, etc., cars).	The British Electric Traction Co. Ltd.
Messrs. G. F. Milnes and Co. (Berlin Daimler cars).	The British and Foreign Electrical Vehicle Co.
Messrs. Marshall and Co.	The New York Tire Co., and others.
The Locomobile Co. of America.	
Messrs. Brown Bros.	
The International Motor Co.	

It is a question whether there has ever been a meeting of manufacturers of and agents for motor-vehicles in this country at which the trade has been so thoroughly represented. Since the meeting the majority of the firms and companies above mentioned, and many others, have signed an honourable undertaking to abide by the decisions set out in the above resolutions, and many of those who had proposed to exhibit at the National Show and at Mr. Baily's Crystal Palace Exhibition have signified their intention of not exhibiting there, while Mr. S. F. Edge, on behalf of the Motor Power Company, and others, who were originally in favour of the proposed Crystal Palace Exhibition, have from the outset been in favour of the principle of one exhibition per year, and have signified their desire to fall into line with the majority of manufacturers. I understand that all the firms above-mentioned, with, perhaps, two exceptions, have already applied for space at the Agricultural Hall Exhibition of April next, and that over 100 firms have applied for a total of over 40,000 square feet of space at that exhibition.

I am directed to ask you to permit me to take this opportunity of referring to an article which appeared in the *Cycle Trader* of the 13th September, copies of which have been circu-

lated. This article contains many misstatements. There are two misstatements, however, which I am directed to contradict:—
(a) The *Cycle Trader* says, "The Club . . . presumes to dictate to the trade." The truth is that the Club was asked by some members of the trade to call a meeting of the trade, and, at a meeting to which all makers of, or recognised agents for, motor-cars had been invited to attend or to vote by proxy, the resolutions above quoted were passed by the trade. The Club Committee did not vote.

(b) The *Cycle Trader* says:—"The Club for £200 a year has tried to render the trade of the Kingdom powerless in its clutches." The truth is that before the above resolutions were passed it was clearly explained that, in order to avoid the necessity of calling on manufacturers and others who had become guarantors for the Club's Richmond show to pay the deficit on that exhibition, an agreement had been entered into by which Messrs. Cordingley and Company pay to the Club £200 a year in consideration of the Club not organising an exhibition in London and of the Agricultural Exhibition being held under the name and supervision of the Club. The £200 is devoted, not to the coffers of the Club, but to the defrayment of the liability of guarantors. It was emphatically stated at the meeting of the trade that the Club was in a position then and there to terminate this agreement. The trade was given an entirely open choice in the matter, but decided on the policy set out in the resolution above quoted.—Yours truly,

C. JOHNSON.

Secretary, The Automobile Club.

MOTOR-CAR ON FIRE.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Referring to a letter from your correspondent, Mr. Maudesley Brook, in which he acts as champion for pressure feed on motor-carriages, the arguments he advances in reference to the safety of pressure feed are worth attention, but I fancy would hardly be borne out by manufacturers, who formerly used pressure feed consistently, and I think a letter from the Daimler Company in Canstatt or the Daimler Company in England would be interesting on this subject.

If pressure feed is so much better than gravity feed, why is it that there is not a single motor-car of an approved type using it to-day? And if its safety is so much greater than gravity feed, why do not Panhards, Mors, Mercedes, Napier, and other firms, who with their racing carriages must take much greater risks than the ordinary user, use the pressure feed? The answer, I think, is perfectly simple—because they know that gravity feed is much the safest. How would pressure feed have saved the burning of the car in the Uxbridge Road? One of the petrol connections was left loose, and whether the petrol was allowed to escape, either because gravity assisted it to run out, or because pressure caused it to run out, seems to me very difficult to determine. I think it makes hardly any difference how the petrol is fed to the carburettor; if you allow it to saturate the road, and at the same time stand around with a lighted lamp, it will nearly always end in the same way—namely, the burning up of the car.—Yours truly,

A. NOBLE.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—We notice in your last issue that one of your correspondents suggests that if the Napier car which caught fire in Uxbridge Road, the other day, had been fitted with pressure feed the fire would not have happened. A moment's consideration would show how unreasonable this surmise is. If the petrol caught fire after it had fallen on the ground and while the car was stopped, as is reported, then the result would have been just as bad if the car had been fitted with pressure feed, and perhaps worse, as the petrol would have issued from the loose connection more rapidly on account of the pressure in the tank. The fact of the tank being nearer the ground would also have made it so much more likely to receive the heat first and cause the pressure inside to rise and force the petrol out all the quicker.

Although we use gravity feed on our cars, the tank is not

right in the body, but is fitted under the bonnet, where, if it should catch fire, it can do little damage compared with a tank fitted in or under the body, while if a leakage should occur it cannot saturate the woodwork. A reason for fires seldom suspected is the smouldering of particles of refuse thrown by the wheels on to the hot exhaust pipes, which particles are likely to fall off while the car is standing and set fire to any petrol that may be on the ground.—Yours faithfully,

THE WOLSELEY TOOL AND MOTOR-CAR COMPANY, LTD.

CALCIUM CARBIDE.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Referring to the comment on calcium carbide in your last issue, it has evidently been overlooked that acetylene gas engines are already in use in Germany, where reckoning carbide at about £17 per ton, the cost of running is found to be about equal to using ordinary coal gas. The proportion of the explosive mixtures varies, I believe, from 1 to 20 to 1 to 30 acetylene and air.—Yours truly,

W. TERTIUS PRETTY.

REDUCING FRICTION ON MOTOR-CARS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I would like to enable motorists by a few hints to arrive at the proper lubrication for their motors. Thick oil is not always a forerunner of great lubricating properties, and moreover such thick oils are reduced to the viscosity of water when they are subjected to any great heat. Thick oils are also a nuisance in the drop-feed lubricators, particularly in winter time. The best oil to use on water-cooled motors is one of medium viscosity yet possessing a fire test of 470° Fahr., and, what is more important, will stand on the cylinder walls, piston, and rings against the searching, thinning effect of petrol vapour. Ordinary gas-engine oils used on this work are, in the long run, unsuitable, though at the moment they may appear satisfactory; they mean 25 per cent. shorter life of piston rings and cylinder than should be the case. Light-coloured spindle oils, although they may look nicer in the drop-feed lubricators, do not give the results that an oil containing full-bodied hydrocarbons will do. It is ridiculous to pay much more than three shillings per gallon for an oil. If motorists like to pay five, six, and seven shillings per gallon, it is of course their own look out. Moreover, I have reason to believe there are several firms of repute in Great Britain able to produce an oil equal if not superior to any French oil now on the market.

The lubrication of gear boxes is another important matter. I cannot impress the fact too strongly that grease is a bad reducer of friction, and would advise all motorists to have their cars, wherever possible, fitted with tight gear cases suitable for retaining a proper gear-case oil. Any dirty, black oil will not do for this work; to get the best results use only a black, heavy hydrocarbon oil which in price will cost as much as the motor-cylinder oil. Attention to this little detail will save from $\frac{1}{8}$ h.p. on a 6 h.p. car to $\frac{3}{4}$ h.p. on the larger sizes, to say nothing of prolonging the life of the transmission gear.

For air-cooled motors better results can be obtained by the use of a first-class black oil, with a fire test in the locality of 600° Fahr. It is not as nice looking as the semi-transparent oil, but it will be found to be practically indestructible on this class of work, and will lubricate the motor at nearly burning heat. A friend of mine recently did 250 miles; using an oil of this class, on his 2 $\frac{3}{4}$ h.p. De Dion tricycle, with an additional 12 stone on a trailer, on $\frac{1}{4}$ of a pint. On these little motors lubrication is life.—Yours faithfully,

REDUCING FRICTION.

THE ABOLITION OF THE SPEED LIMIT.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—How much longer are we to endure the absurd speed limit of twelve miles an hour? It is fast killing all interest for motoring in England. I know of several cases where gentlemen are getting rid of their motor-cars on account of not being allowed to travel faster than the above speed limit. Twelve miles an hour may be reasonable for crowded thoroughfares and

cities, but on a clear country road it is perfectly ridiculous. This country and especially the rural districts suffer from torpor, which is demoralising in its effect, and a few motor-cars going at, say, fifteen miles an hour, or even twenty, is the best tonic to Messrs. Hodge and Company that could possibly be conceived. But, alas! the chronic conservative grandmotherly element is proving a veritable maggot to progress in this country. I, for one, am waiting to see how long motorists will be content to endure the present regulations.—Yours truly,

“EN AVANT.”

“MOTORIASIS.”

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—The motor season is almost over; retrospectively we mark out various features, technical and social, and none perhaps so prominent as the vigorous action taken broadcast over the country against excessive speed. Much has been said and written on the subject either way, not unaccompanied with wild suggestion; something also has been done by those who use motor-cars, and something by those who do not, nor is there much doubt which pan of the balance hangs lowest.

It would lay heavy stress on the statistician to prove that the number of automobiles and the convictions for driving at excessive speed had increased in direct proportion to one another. To one reviewing the motor “crime list” of the past eight weeks—the police methods, the magisterial remarks, the inordinate fines, by no means free from shadow of imprisonment with hard labour—what but a feeling of breathless astonishment and desire for prompt remedy?

To this end it were well to locate the diseased tissue and treat the same on diagnosis, pharmaceutically or surgically, to the betterment of all members concerned. The police force, with the exception of some few promotion-lusting constables, rusty from disuse and soured by repeated failures to raise a case against the solitary village public-house, is by no means the sower of the irritability—the motoriasis, as we may term it; its actions are controlled by orders, the orders are forced by suggestions of peculiarly offensive nature, which emanate in unlimited quantity from Councillors—Urban, Rural District, County, or what other species exists soever—embracing in their ranks almost every provincial non-stipendiary magistrate that sits on the bench, and it is to this very considerable body of individuals that we owe such a state of affairs as is rapidly becoming intolerable. Nor have therapeutic measures been neglected, for we know that pharmaceutical treatment of councillor in shape of soothing ointment has been adopted with qualified success.

Councillor, if means, or, for the matter of that, condescending inclination permitted, has journeyed by invitation to London for demonstration purposes, and has returned, with some recollection—of eating. Nor has stay-at-home, mountain brother-councillor been neglected—to him has arrived Mahomet, snorting, demonstrating, and retired again—unfed. While subsequently councillor, travelled or untravelled, ruminating at leisure, does evolve from profound abyss of legislative mind the not-altogether-to-be-wondered-at conclusion that he is a personage of even more importance than he himself imagined and launches out forthwith into hitherto unexplored seas of truculent authority, the unpalatable truth being that councillor is not amenable to soothing ointment, of which the effect, if anything, is irritant. And so, failing pharmaceutical means, we turn to surgery; if perchance under that more drastic regimen there may be found some method of relieving this highly-inflamed member of a disease which, albeit to infinite regret, not fatal, is nevertheless of exasperating duration. Nor need we seek long; examination will show a small area in far worse state than the surrounding tissue, where deep down embedded in rapidly expanding halo of morbid growth, lies the source of the trouble—small, but none the matter for that, viciously septic—the speed limit. Do but remove this with the knife and the inflammation subsides;

motoriasis is a thing of the past, and councillor, returning to normal condition of narrow-minded ignorance, will devote his useless energy to matters that need not concern the automobile world. To treat the councillor in manner other than by stern excision of the clause in the Local Government Board regulation, under which he shelters, is fatal; nothing but a determined front will check him from doing irreparable injury to an industry that promises to be one of the first in the land.

The true policy is one of prompt combination, ever growing stronger, for the instant purpose of reframing the speed regulation before the ensuing season; in what form and by what means cannot well be discussed here. The motor world—sport and trade, long since strong enough to stand firm without assistance—embraces far too much talent and genius for that we should await solution of the problem other than with complete confidence; but no time must be lost or so surely the season of 1902 will witness a state of affairs fraught with consequences more serious than now imagined.

Howsoever long it be possible to restrict the speed of motors to twelve miles an hour, so long also will everyone continue to overstep the restriction, for be it remembered that driving at 12½ miles an hour, or for the matter of that twelve and one-thousandth miles an hour, is punishable; and if not, of whom shall we ask at what particular stage of increase it does become so? Let it rest—unworthy of argument—courting deletion. The thing were a miserable farce but that it provides source for one of the most flagrant abuses of petty justice conceivable. It is suicidal to pander to the legislative whims of a class of men who have neither the sense nor inclination to perceive that they are playing with that most dangerous of all edged tools—superior knowledge, and that sooner or later they will be cut. Hard experience alone can teach them, and let us hope, for the sake of many others, than the present motor world that the day is at hand when the lesson will go forth.—Yours truly, KAPTA.

MOTOR-CARS IN JAPAN.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—In your issue of July 27th last there is an article on automobiles in Japan which contains a number of misstatements. Were there not a possibility of the writer having mistaken cycle shops for automobile depôts and bicycles on the streets for automobiles, I should think there was considerable ability shown in these misstatements, for anyone who has been through Japan and had half an eye to the subject will have noticed that the majority of the roads are built for jinrikshas having a gauge of about 3 ft. 6 in. In the old cities, such as Osaka, the roads are only wide enough for two to pass with care, and in these an ordinary motor-car could not be operated at all. The writer took the first steam machine in Japan from Yokohama to Tokyo, and in asking for a permit from the police for operating an automobile met with some delay, as the police wished to see, before granting permission, what such a thing was like. Among the persons very much interested in the car was the chief of police, who investigated my machine to draw up rules and regulations for such traffic. To-day there are two, or perhaps three, cars in Japan, and all of these, with the exception of mine, were brought for the personal use of their owners and not for business. My firm is the first to systematically go into the motor-car trade in Japan. As to its future I think that it will develop, but the Japanese have more use for a machine that can draw loads and can be used for passenger service than for cars built merely for pleasure; but while this will no doubt be the trend of things for some time, later pleasure vehicles will also find buyers, after the industry has been more standardised. As my firm has gone very seriously into the subject and will shortly open a combined store, sale and club room, and as we have been working hard to get up an automobile club, the difficulties in the inauguration of all this have shown us clearly that the movement is very new here yet and will take careful coaching for some time to come.

Kobe, Japan.

F. B. ABENHEIM,
Manager of Messrs. Bruhl Frères.

SPARE PARTS PROMPTLY WANTED.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—At the close of another season of motoring, may I, through your columns, ask for the following advice? (1) Where to get De Dion Ivorine plates for a 3½ h.p. car, without having to wait a matter of eight weeks. An order has been in the hands of a large city firm for this time. (2) Where to get at a few days' notice De Dion spur wheels. I had to send to the makers for one—time occupied, four weeks. During the past season I had new solids put on the rear wheels—time, four weeks.

I have many inquiries from friends, mostly professional, asking as to the advisability of using cars instead of horses. What can one honestly reply? Although I have found De Dion engines reliable, yet, for want of duplicates, my car has been at a standstill for weeks. If these spare parts could be obtained promptly they could be put on by anyone having mechanical knowledge. I have enjoyed riding in my car, when available, as my time was no object, but what of a professional man delayed so long after giving up his horses? If the people and makers interested in a particular make would only see how detrimental these delays are to their trade, surely if they cannot stock all parts, they might arrange an exchange with the different agents, and so help the matter.—Yours faithfully,

AUGUSTUS KENT.

MR. JOHN GOODY writes *re* the comment entitled "Running the Blockade," in our last issue: "I must contradict your statement as to Earl Russell being 'the only other man who ever drove through the historic archway,' as I took two gentlemen, Mr. C. H. Edmunds and Mr. H. M. Edmunds, through, without even being challenged. I have forgotten the date at the moment, but it was in the early part of last year."

THE Automobile Club of France has withdrawn its suspension order against M. Jenatz.

It is reported that the Cannstatt Daimler Company are building a 16 h.p. Mercedes car to the order of the Kaiser.

M. SANTOS-DUMONT was baulked by the weather on Sunday last, and had to abandon his intention of sailing around the Eiffel Tower in his new air-ship.

A DIVIDEND of 8 per cent. has just been declared by Messrs. Benz and Company, of Mannheim, Germany, the makers of the well-known Benz cars, as compared with 10 per cent. in the preceding year.

ARRANGEMENTS have been made for conveying the Russian mails over the Georgian military road across the Caucasus range between Vladicaucas and Tiflis by motor-cars, in place of the former method of post-horses changed every ten miles.

MAJOR SHELDON CRADOCK, of Hartforth Hall, near Richmond, Yorkshire, who, it will be remembered, met with a serious motor-car accident near Doncaster, is, we are pleased to say, now making most satisfactory progress.

It will be remembered that in the Glasgow trials one of the New York tires fitted to the No. 2 M.M.C. car came off the wheel. The New York Tyre Company, never having had one of their tires come off a wheel of its own accord, instituted inquiries into the matter, and send us a copy of a letter from Mr. Iden, the works manager of the Motor Manufacturing Company, Limited, in which that gentleman states that the primary cause of the failure was that one of the nuts had not been properly secured, and this allowed the tyre to begin to creep. As this crept backwards and forwards the nut became gradually looser, until ultimately the tire severed itself from the nut. The creeping where this nut was, and between the nut preceding and following this, became so great as it got more play that it acted as a splendid lever for the second nut, and so on, until four or five of them had been pulled out or broken. No fault whatever could be found with the studs or the threads, and had this one nut been secured as the others were, the tires would have come off with a splendid record in the trials. [Mr. Iden adds that the other tires on the car are in splendid condition up to the present.

FLOTSAM AND JETSAM.

BY "FLANEUR."

FOR those who have eyes to see there is an instructive parallel to be drawn between the recent experiences of the various members of the Royal Family. On the one side we have the Princess Christian, her daughter Princess Victoria, and the Princess Henry of Battenberg driving to Whippingham Church in a pair-horsed carriage; on the other side we have the King and Queen, King George of Greece, the Crown Prince of Denmark and the Dowager Empress of Russia all driving out repeatedly in King Edward's Daimler at Fredensborg. Now which, in the estimation of the "man in the street," is the safer form of vehicle? He would plump for the landau at once. Yet there is not the smallest doubt but that the Royal ladies in the Isle of Wight had an extremely narrow escape last Sunday, and the consequences might well have been fatal. The horse which took fright is said to have broken loose, and the coachman was then able to turn its companion into the hedge. Clearly the first animal must have been wildly restive, and one is forced to speculate how much violence it used before it broke the traces, and what would have happened if that unusual but fortunate contingency had not occurred. Yet this imminent escape from death received no more attention in the daily Press than the petty "mishap" to the then Prince of Wales, when one of the burners of his car blew out while he was being driven to the station from Sandringham some months ago. The papers all but universally appear to regard the horse either as a necessary evil or as no evil at all, despite its waywardness and the enormous lists of accidents that attend its use.

To many professed *chauffeurs*, no doubt, it may seem a work of supererogation to insist upon the inferiority of the horse, upon the fickleness of its temper, and upon the safety of the motor-car. But facts have to be looked in the face, and the conservatism of the British public in this matter is a potent obstacle to the spread of automobilism. Only a day or two ago, for example, a letter appeared in one of the morning papers from a correspondent who bewailed the establishment of the new public service between Putney and Piccadilly, and drew a lurid, if fanciful, picture of the risks the public would incur as the service was increased. This is ludicrous enough *per se*, but the extent to which this view is shared is not a matter on which to dogmatise; as yet one can neither estimate the strength of the undercurrent of hostility against the automobile nor the amount of tacit approval that is felt by those who are nevertheless unable to buy a car.

MEANWHILE the former class may be invited to consider that the King of England would scarcely be likely to jeopardise his safety and that of so many other distinguished personages by the use of an inexpedient means of locomotion. It is satisfactory to note, by the way, that the King's example has borne good fruit in Denmark in the shape of the establishment of a Danish Auto-

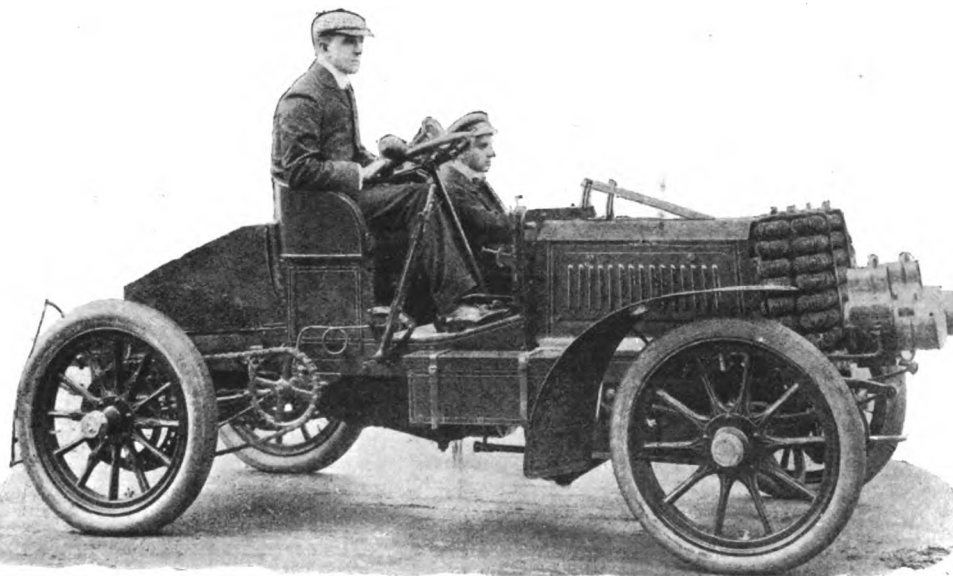
mobile Club, and it was at the formal inauguration of this that the Copenhagen *chauffeur* who had driven the King's Daimler during his stay at Frederiksborg related some interesting details of the ten separate excursions which the Royal car had made. The most gratifying is the fact that His Majesty declared himself to be an ardent automobilist (*un chauffeur passionné*), and though he sat behind the driver and tapped his shoulder at such times as the pace appeared too fast for the ladies in the car, the speed was always "from thirty kilometres upwards" except in traffic. What a hollow farce the British speed limit of twelve miles an hour must appear to our continental *confreres* when even our King does not fear to double it while abroad.

I MET a brother automobilist the other day who had just emerged from a long spell of compulsory inactivity in a hospital. "Another example of the dangers of motor-car driving?" the anti-automobilist might query. No, my dear sir; the gentleman in question was walking towards Waterloo when, being doubtful if he had allowed himself time to catch his train, he hailed a hansom, but specially enjoined the Jehu to drive carefully. The next thing my friend remembers is his waking to consciousness in a hospital ward, suffering from a frightful cut over the eye that left the surgeons a long time in doubt as to whether

his life was safe; and even after that doubt was set at rest there was a contingent remainder in the shape of possible loss of sight. Naturally he is asking himself whether it would not have been better to have missed his train than trust himself, even with a premonitory, but unadopted, caution to the driver of the most carelessly handled and unsafe vehicle on the London streets. I, too, can speak feelingly on this subject, having once been pitched out of a hansom myself, and I can say unhesitatingly that I would rather at any time mount a racing motor-car with a skilled pilot than sit behind the shafts of the so-called "London gondola." What a misnomer, if ever there was one!

THERE is an extraordinary coincidence, by the way, attaching to the accident above described. The victim, as it happened, was an intimate acquaintance of the late Mr. W. B. Beach, the "Father of the House of Commons," who met his death not very long ago by being thrown out of a London hansom. Now, Mr. Beach was in the habit of using a hansom daily, and my friend the *chauffeur*, though at exceptional times resorting to that species of conveyance himself, had spoken to the aged Parliamentarian only a day or two before the accident, and warned him of the risks he ran by this regular employment of his favourite medium. Within less than a fortnight not only had Mr. Beach been killed while driving in his wonted hansom, but the man who warned him had himself become a victim of the very vehicle against which he had raised his voice.

It is refreshing to find that the advantages of the motor-car are gradually commending themselves to municipal and county authorities, despite the amount of opposition that so frequently



MR. C. JARROTT ON HIS 40 H.P. PANHARD RACER.

Photo by]

[Argent Archer.

proceeds from such quarters. Liverpool equipped its borough engineer and staff with first-class automobiles, Manchester followed suit, and Leeds has sanctioned the acquirement of a car at an expenditure of £276. Most surprising, however, is the decision of the Essex County Council to buy a £300 car for the benefit of its surveyor; may the county roads be improved in consequence! The discussion that took place upon this recommendation, however, was somewhat peculiar, as a member enquired whether the surveyor was competent to drive a car, and moved as an amendment that the car should only be hired experimentally for six months. The chairman replied, however, that the men who drove the steam-rollers could drive the surveyor's car when not otherwise engaged. "H'm! Yes!" However, the resolution was adopted, and no doubt the surveyor will soon learn to drive the car himself and be independent of the services of the steam-roller pilots.

If you want to know exactly how you look when driving your car you have only to engage a British Mutoscope Company's operator to turn his camera upon you, and the thing is done. "But how is the effect produced?" you may ask; "the man may take a hundred rapid impressions of my progress, but am I to set up a magic lantern in order to reproduce the movements of my car?" By no means; the thing is ridiculously simple. The prints are pasted in sequence in a tiny book, and all you have to do is to draw your thumb quickly across the edges. The optical illusion is perfect. Mr. Frank Butler, the genial ex-treasurer of the Automobile Club, showed me one day this week a couple of "biographic" reproductions of Miss Vera Butler and her well-known Renault car. In one booklet the car was seen approaching in a straight line, with remarkably realistic effect; in the other the various operations of turning the starting handle, skipping lightly into the car and getting it quickly under way were shown with the perfection of illusion, the number of visible movements of Miss Butler's arms and hands, each intelligible to *chauffeurs* themselves, being really wonderful.

It is reported that the Czar of Russia has placed an order for a motor-car with Messrs De Dietrich and Co., of Luneville, France.

ON Thursday last week Mr. F. Guy Lewin started on an M.M.C. car fitted with New York tires on a run from Land's End to John o' Groat's. On Friday, the 4th inst., we received a telegram from Exeter, stating that the attempt had been abandoned, the explanation of the cause therefor following by letter. It appears that soon after a start was made it began to rain, and kept on unceasingly for ten hours, with the result that Mr. Lewin who was wet through, had to seek medical advice and lay up.

ONE of the desiderata of the driver of a belt-driven car is a belting that will withstand the trying tests to which it is subjected. It must not stretch or slip, it must be flexible and yet proof against "buckling" when thrown off and on, must stand heat and live steam, water and grease, and be of very high tensile strength. All of these qualities are claimed for "Teon," a belt produced about four years ago by the well-known house of Fleming, Birkby and Goodall, Limited, of Halifax. The belt is made up from a specially woven fabric, and "Teon" is the cement used in its construction, which appears to be indifferent to heat up to 220 degrees Fahr., is insoluble in water, and unaffected by oils and acids. The belt is made up without joint or seam, consequently there is perfect evenness in the drive, and in the pamphlet issued by the company it is clearly shown by certificate that the Sheffield Testing Works (who tested to destruction a 7-in. belt of this make) only succeeded in breaking it after the application of no less a strain than 15,600 lb., or, in other words, the belt withstood a ton for every inch of its width. The trade are invited to inspect these belts at the London house of the company, 39, Lime Street, E.C., while for the retail trade a stock is kept on hand at the warehouse of Messrs. C. Lindley and Co., Limited, 34, Englefield Road, N.

EXTRACTS FROM THE "DAILY MOTORIST," THURSDAY, JULY 16, 2000.

(BY OUR SPECIAL CORRESPONDENT.)

PROFESSOR SO-AND-SO'S racing motor the *Flyaway* was forwarded by aerial luggage ship yesterday to America to take part in the Motor-car Challenge Cup race. The Professor follows to-morrow by the White Star Passenger Air-ship.

ALL African motorists are on the *qui vive* in anticipation of the Sahara Automobile Club meeting next week.

THE Paris Motor Gymkhana on Saturday will, instead of the Eiffel-Tower-exterior climb which was so successful last year, include a "greasy-pole" contest, which, it is said, will prove much greater fun. The pole is being prepared, and, although affording not quite so long a run as the tower did, will probably be a little more difficult of ascent, as the pole is round, quite upright, and only 3 ft. 6 ins. in circumference.

DURING excavations on Ampsteadus Eathus last week some workmen discovered what appear to be the remains of one of the old late-Victorian one-horse chariots known as "ansom kebs." It is said to be in an excellent state of preservation.

IT is reported, on good authority, that Count Yankee-Doodle has bought the motor-track round the North Pole, and intends to devote it in future entirely to private sport. In this case the international event will in all likelihood be run at the South Pole track this winter.

PRINCE LONCHI DONCHI has given a splendid specimen of an ancient motorless bicycle said to be 200 years old and in working order, and the skeleton (about the same age) of a horse, to the Chicago Antiquities Society. This gift is a valuable addition to the relics of the museum.

THE Paris-to-Constantinople race, which was to have been held last Monday afternoon, has been postponed for a week on account of the sudden death of Mr. A. T. Doll's *chauffeur*—Ted Slow. A week will be sufficient to reduce Mr. Doll's second driver somewhat to Ted Slow's weight. The latter, whose loss is to be regretted, and who has driven no less than eleven cars to victory in the moting-field, was weighing five stone two ounces at the time of his death. Mr. Doll is confident of doing the distance under the one and a half hours, as against the one and three-quarter hours of the record last year.

THE Colosseum Autodrome is closed for a fortnight for repairs. After that period business will proceed as usual.

ENCOURAGING results have attended Monsieur S—D—'s latest experiment with his "self-acting" motor. It is but a question of time, and the "Crutch Prize" is practically in his possession. On Wednesday, at Damascus, the car was again brought out before large crowds assembled to watch the trial. At 2 p.m. Mr. S—D— released the mechanism, and then retired to the grand stand to await results. The car went slowly round the square once, hesitated a moment apparently to take its bearings, and at once took the route to Jerusalem as indicated by the signpost, keeping well to the left side of the road. Reports say it called at Sidon at 2.30, and at Tyre at 2.56, depositing the mail bags for each place correctly. It followed faithfully the prescribed route on its chart, and was seen passing Safedo at 3.13; but between there and Tiberias a funeral procession got in its way. We presume the brakes did not act effectively, for it took the low road instead of the high road into the latter place, which technically disqualifies it from winning the prize on this occasion. The car arrived at Jerusalem without further mishap at 4.27, went straight to the Bear's Paw motorage, and was there found in perfect condition for locking up for the night. Another attempt will be made by Mr. S—D— next week with his car No. 4 over the same ground.

"ANITA."

FOR the 1902 season the Georges Richard Company, of Paris, are bringing out a light car fitted with a 10 h.p. two-cylinder motor.

THE CRAMPIN-SCOTT MOTOR-CAR.

THE other day we had an opportunity of inspecting a motor-car which has lately been completed by Messrs. Crampin, Scott and Company, of Giltspur Street, Holborn Viaduct, London, E.C. The general arrangement of the car is clearly shown in Fig. 1. The frame is built of channel steel, and as it carries the motor and the whole of the transmission gear any form of carriage body can be fitted. To deal first with the engine, which, as will be seen, is centrally located at the rear of the frame, this is of the horizontal type, and develops 6 h.p. at a normal speed of 750 revolutions per minute. The cylinder, which is water-cooled, is 5 in. in diameter by 6 in. stroke. Both the inlet and exhaust valves, *O* and *P*, are 2 in. diameter on the seat, and are fitted with phosphor bronze caps to enable them to be easily withdrawn. There are no water joints at the cylinder head, and the annular water space is $\frac{5}{8}$ in. wide. The exhaust pipe and ports have a full way clearance of $1\frac{1}{2}$ in. diameter, while the air inlet pipe and port are of $1\frac{1}{4}$ in. diameter. The ignition is electrical, while the water-circulation is on the thermo-syphon system. Two water-tanks are carried, these having a capacity of eight gallons. The engine, of which a general view is given in Fig. 2, is mounted on a rigid phosphor bronze horn plate with bearing stops to take the thrust of the explosion. The exhaust cam is made of large size, and is so

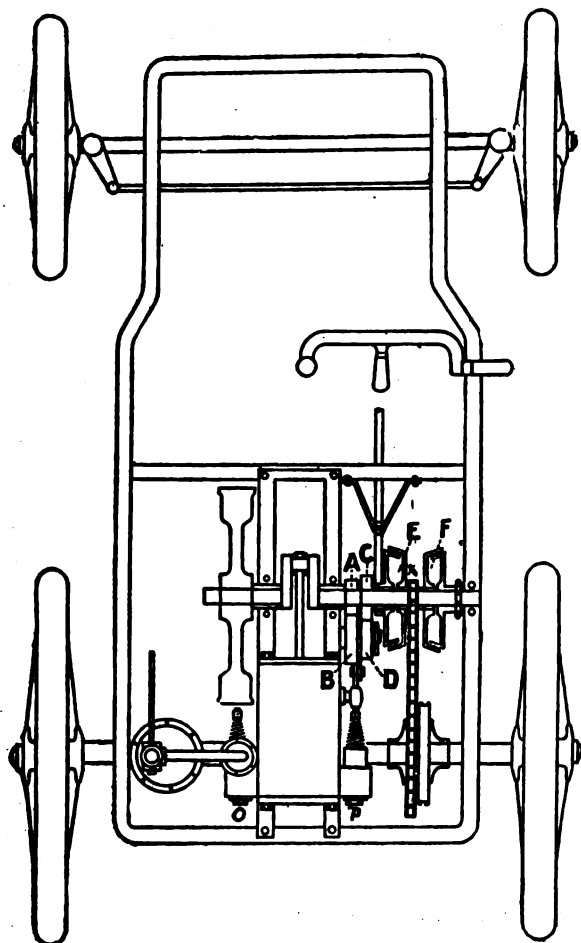


FIG. 1.—PLAN OF CRAMPIN-SCOTT CAR.

formed that, while there is no knock in its action, the exhaust valve is held wide open during the whole of the exhaust stroke.

Coming now to the transmission gear, the car we examined was fitted with two forward speeds only, but we understand that, if desired, a reverse motion can be fitted. The crank shaft projects on the right-hand side of the engine, and carries two cone friction clutches, *E* and *F*. The female portions of these clutches are carried on a sleeve which runs loose on the shaft, and between

the two portions on the sleeve is the chain wheel *X*. The male portion of the clutch *F*, while it can be moved laterally, is so fixed that it must rotate with the engine-shaft, so that when the two parts of the clutch *F* are brought together the power of the motor is conveyed through it direct to the sprocket *X*, and by the single driving-chain to the rear differential axle. This is the high speed. To obtain the lower speed the train of pinions—*A*, *B*, *C*, *D*—is brought into play. The wheel *A* is keyed on the engine-shaft. *B* is keyed on the half-time shaft, and has connected with it the pinion *D*; the latter meshes with the wheel *C*, which is carried on a sleeve on the engine-shaft. On

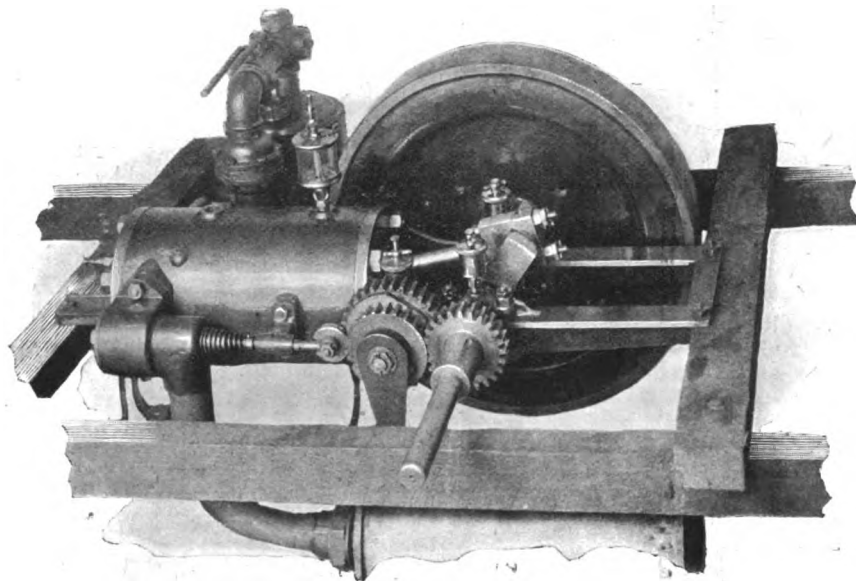


FIG. 2.—THE CRAMPIN-SCOTT MOTOR.

the other end of this sleeve is mounted the male portion of the clutch *E*, in such a way that while it must rotate with the sleeve it can be moved along the latter laterally. Thus, when the two parts of the clutch are brought into contact, the power of the engine is conveyed through the train of pinions and the clutch *E*, the sleeve on which the sprocket is mounted only then running at half the speed of the motor. The engagement of either clutch with its respective parts is brought about at will by a rocking lever, actuated by a handle with ratchet-catch on the steering-column.

In Fig. 1 bar-steering is shown, but in the car we examined the steering was controlled by a horizontal hand-wheel. The road-wheels are of the cycle type, 36 in. diameter at the rear and 26 in. at the front, all being shod with solid rubber tires. A pedal controls a powerful band-brake on the differential gear-box, while a hand-lever at the side actuates shoe-brakes on the rear wheel tires. A starting-handle is brought well up to the driver's hand, so that the engine can be set in motion from the seat. The car weighs, complete, about 12 cwt., and can attain a speed of eighteen miles per hour. In addition to complete cars, Messrs. Crampin, Scott and Company are supplying the motor separately to engineers, and also complete underframes, to which carriage-builders can fit bodies themselves.

A new motor-bicycle is about to be put on the market by the Riley Cycle Company, Limited, Coventry.

MR. V. F. SHMURLO, of Tomsk, Siberia, is at work on a treatise on the automobile, the first of the kind in the Russian language.

MESSRS. SMITH AND MABLEY, of West 38th Street, New York, have secured the United States agency for Messrs. Charron, Girardot, and Voigt, the sales agents in France for Panhard cars. It is stated that Messrs. Charron and Girardot have secured an option on a manufacturing plant in the vicinity of New York, and intend to establish a branch factory for producing motor-cars with American material and labour.

HERE AND THERE.

THE *Field* considers the fixing of a speed limit in connection with motor-cars to have been a mistake.

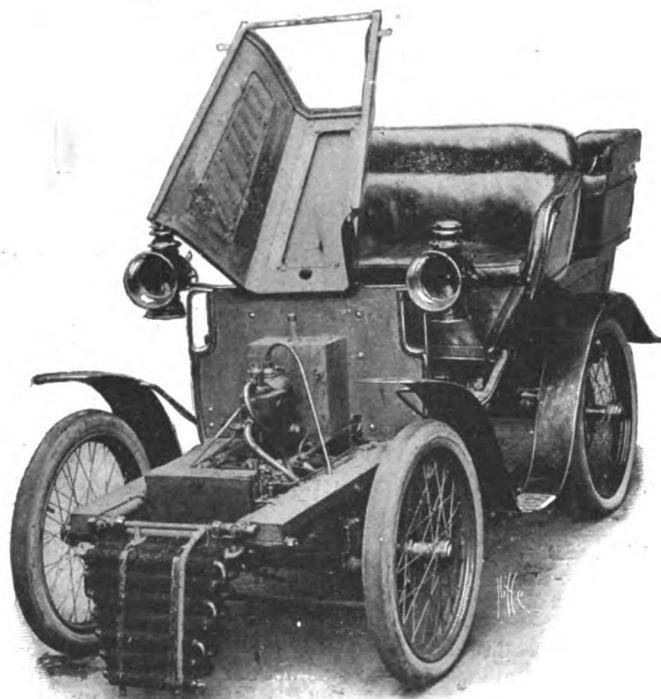
A HILL-CLIMBING competition organised by the Swiss Automobile Club is to be held on Sunday over a 10-kilometre course.

THE 1902 De Dion voiturette will have, as already announced, the motor at the front end of the car. In addition it will be fitted with wood wheels and inclined wheel steering.

MOTOR cars were strongly in evidence in Stranraer one day recently. Three splendid-looking machines were driven through the principal streets and attracted general attention owing to the masterly way in which they were handled.

A MEETING convened by the directors of the Daimler Motor Company, Limited, for the purpose of conferring with their larger shareholders "on some questions relating to the present condition and future prospects of the company," was held on Tuesday. The proceedings were private.

MR. J. C. DENNIS, of Guildford, has twice successfully defended charges of furious driving brought against him. On the last occasion, referred to elsewhere, Mr. Dennis was accompanied by a lady on a bicycle who kept pace with the motor-tricycle for four miles, during part of which the defendant was alleged to have travelled at twenty miles an hour.



THE HUMBER VOITURETTE.—FRONT VIEW, SHOWING ACCESSIBILITY OF MOTOR.

At a meeting of the Kensington Borough Council a letter was read from Professor Hull, F.R.S., calling attention to the serious public danger arising from the reckless driving of motor-cars in the streets of the borough, particularly in Ladbroke Grove, by St. John's Church. The Council was of opinion that it was a matter for the police, and no action was taken.

A KINDLY-DISPOSED individual at Tunbridge Wells, who writes anonymously to a local paper, suggests that "all goggles, veils, oilskins, jackets, etc., worn by motorists should be strictly prohibited. Then identification might be obtained." A man so anxious for the identification of others ought to have signed his name to his own letter.

MR. A. L. BENNETT, of Barnstaple, is an enthusiastic motor-bicyclist. Since he purchased his present Werner, he has driven it over 2,000 miles, and during the whole of the time he has

never had a single breakdown, nor has he either changed a valve, or ground one in. Altogether Mr. Bennett has driven a Werner over ten thousand miles, and reports that his opinion of it grows more favourable every day.

To prevent a crack in a piece of metal from enlarging it is suggested to drill a hole at the end of it and put in a copper rivet. It is not always easy to find the end of the crack, and to find it accurately the surface of the metal should be moistened with petrol and immediately a chalk mark made over it. The petrol which penetrates the crack is at once absorbed by the chalk and gives a clear trace of the crack.

A METHOD of cleaning greasy hands, given in *La Locomotion Automobile*, may be of use to automobilists. The hands are first rubbed with petrol and wiped off twice. Then they are moistened with olive oil or greased with butter and rubbed energetically. They are again wiped off, and the operation is concluded by washing them with soap. The nails can be cleaned with a mixture of petrol and alcohol.

WHILST Mr. Winston Churchill, M.P., and a friend were driving through Rochdale in the Hon. Member for Oldham's motor-car, a boy, about seven years of age, ran from behind a wagon in front of the car, which knocked him down and passed over his chest. When lifted from the ground he was unconscious, and Mr. Winston Churchill carried him in his car to the infirmary. The boy's injuries are not of a serious nature.

WHILE the risk of fire with motor-cars when ordinary care is taken is but small, the recent burning of a car in the Uxbridge Road appears to have somewhat disturbed the peace of mind of some of our readers. It is therefore somewhat of a coincidence that there should be brought to our notice by Messrs. H. W. Warren and Company, of 5, Great Winchester Street, E.C., a handy little fire extinguisher, specially intended to put out inflammable oils, or fires caused thereby. The extinguisher consists of a round canister about two feet long by two inches in diameter, in which is enclosed a special preparation in the form of a red coloured powder, in which is said to be contained a certain proportion of carbonic gas. The powder is forcibly thrown on the fire, which is instantly choked and put out. The extinguisher is said to act equally well with paraffin, petrol, methylated spirits, naphtha, and, in fact, all inflammable oils. We have tried it on paraffin and it certainly seems to fulfil the claims made for it. "Sootene" is the name given to the compound, which is put up, as already mentioned, in neat canisters, containing about 3 lbs. The canister occupies but little space, and can be stowed away in a corner of the car, or hung up in the motor stable. It is an accessory that can well be recommended to motorists.

WE hear so much about the 1902 patterns of motor-carriages from the other side of the water that it may interest our readers to know that British makers are not overlooking the new season's requirements. Thus we learn from the Motor Manufacturing Company, Limited, that their new models and designs are ready, for which they are now booking orders, and that deliveries will be in full swing in about a month or six weeks. For some time past the company have been working with extra hands in order to clear off orders for expensive cars, and on the carriages for the Glasgow trials. Having successfully got through this accumulation, they have decided to organise their works upon a basis to produce for the present their voiturette, which is fitted with $5\frac{1}{2}$ h.p. single-cylinder water-cooled engine, their standard pattern light car, and their trade delivery van to carry up to one ton; to the latter two types of vehicles they are fitting their two-cylinder vertical engine (the same as was fitted to the M.M.C.'s carriages which did so well in the Glasgow trials). Orders for special types of cars will be dealt with in a department entirely separate from the main part of the works. Naturally this arrangement has necessitated some change in the staff, as the company have determined to produce the carriages upon the most economical basis possible, without sparing anything in the way of good workmanship and materials.

MESSRS. COLLIER AND SONS, of Herbert Road, Plumstead, have just put a new motor-bicycle on the market.

WE hear that the Clyde Cycle and Motor-Car Company, Limited, of Leicester, are bringing out a motor-bicycle fitted with a 2 h.p. engine.

THE Preston-Davies Tyre and Valve Company, Limited, Broad Street, Bridgeton Cross, Glasgow, are keeping a large stock of Pratt's motor spirit for motorists.

TWO more public service motor-cars are expected in Scarborough shortly, when a twenty minutes' service each way over the selected route will commence.

WE learn from the Begbie Manufacturing Company that Aster water-cooled engines are now being made in 3, 5, 6½, 9, and 12 h.p. sizes, the last-named comprising two cylinders.

A NEW motor-bicycle has just been put on the market by the Cinque Ports Engineering Company of Hastings. The motor is of 1½ h.p.

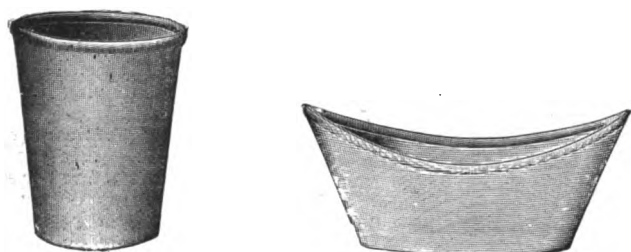
THE Committee of the Wolverhampton Art and Industrial Exhibition of 1902 have already received more than three hundred applications for space, nearly all the iron-masters and engineering and other firms of the district being represented.

AT a meeting of Kincardine County Council in Stonehaven last week, Provost Bisset suggested that the Chief Constable should be instructed to keep a strict watch on motor-car drivers who ran too fast or failed to stop when requested. The suggestion was adopted.

MANY nervous persons, especially ladies, who can hardly drive in a carriage with horses, because of their imaginative fears that "something will happen," sit calmly and unconcernedly in the motor-car going at thrice the pace that their horses would take them, and know no fear.—*Country Life*.

NEW steam motor dust-vans and water-carts on the Thornycroft system were recently tried for the first time by the Hampstead Borough Council, and are reported to be giving every satisfaction. Although the hills of the neighbourhood make traction difficult generally the motor-vehicles have coped with them very well.

AMONG the many novelties introduced by the B. F. Goodrich Company, of 7, Snow Hill, E.C., which will be found useful by motorists, especially those who go a-totring, is a pocket drinking cup. As will be seen from the accompanying illustrations, the cups are made in two shapes—tumbler and canoe; they are made of a pure white odourless rubber which, it is claimed, does not impart any taste to the liquid. The cups are soft, so that they will lie flat or fold, and so occupy but little space in the pocket.



At a recent meeting the Essex County Council agreed to a recommendation of the Highways Committee that the surveyor should be provided with a motor-car for use in highway work at a cost of £300. The order for the car, a 4½ h.p. De Dion voiturette with Mylord body, has, we understand, been placed with Messrs. De Dion, Bouton, Limited. As the car will have to be used in all kinds of weather it will be fitted with a glass shield, hood, and an extension of the hood connecting same with the shield, so that the passengers will be entirely protected, except at the sides of the vehicle.

FURIOUS DRIVING CASES.

IN the Aberdeen Sheriff Court, John Barnet Gow, shooting tenant of Phesdo estate, Kincardineshire, was charged with having driven a motor-car on September 2nd, and on another occasion the same day from Braemar to Ballater Railway Station, a distance of over seventeen miles, at a greater speed than twelve miles an hour. Accused did not appear, but Mr. Stott, solicitor, watched the case on his behalf. After hearing the evidence, the Sheriff said it was now generally known throughout the country that the regulations were in force, and he was inclined to impose a penalty which would put an end to this kind of thing. He found the first charge proved, and imposed a fine of £5, with the alternative of fourteen days' imprisonment; and the second charge he found not proved.

AT the Wigmore Police Court, Ernest Cleveland, Gatley House, motor-car driver, was charged with driving a motor-car beyond the regulation speed. P.S. Rooke stated that on Sunday, September 1st, he posted himself at a milestone outside the village of Aymestrey and sent P.C. Thomas to the next milestone, having first compared watches. Defendant came by with a motor-car in the direction of Kingsland. He covered the distance between the milestones in 2min. 10sec., which worked out at a rate of twenty-seven miles an hour. P.C. Thomas corroborated. In defence, defendant stated that the car could not travel at the speed given by the police, and that morning he was teaching a fellow servant how to drive. The Magistrates decided to convict, and fined the defendant £10, to include costs.

AT Lymington, Robert Howard, of Brockenhurst, was charged with driving a motor-car at a greater speed than was reasonable, on September 13th. P.C. Hebidge deposed that at 12.45 on the afternoon in question he was on duty on the Brockenhurst Road, and saw a motor-car coming towards Brockenhurst at a furious rate. Witness timed the car from where it passed some pipes to where he was standing; it was 882 yards, and the car did it in one minute. Defendant called his employer, who said he could swear they were not going thirty miles an hour, but he would not swear they were not going twenty-five miles. There was no traffic on the road. The Chairman said the Bench considered the case proved, and imposed a fine of £3 and 11s. costs.

AT Southport, Bertram Bell, was summoned for furiously driving a motor-car on September 24th. Mr. Wilmot Hodge appeared for defendant, who pleaded not guilty. P.C. Forbes said that on the date in question he was on duty at the corner of Eastbank Street and Chapel Street, and saw the defendant driving a motor-car at a furious pace. The speed defendant was driving was about fifteen miles an hour. James Ward Maxwell, a visitor to the town, said that he narrowly escaped being knocked down at the corner. Defendant was driving at from twelve to fifteen miles an hour. Mr. Hodge, for the defence, commented on the difficulty of judging speed, and went on to explain that the car defendant was in had been repaired, and was being taken out for trial. It was impossible for him to have driven it at fifteen miles an hour. Defendant was sworn, and said the utmost speed he travelled at would be eight miles an hour. The Chairman said the Bench considered the case proved, and defendant would be fined 20s. and costs.

AT Romford, G. F. Taylor was summoned for driving a motor-cycle to the public danger. Constable Wells said the defendant drove at the rate of sixteen miles an hour through Romford market-place. The occasion was market-day and people had to rush in every direction to get out of his way. A fine of 34s. including costs was inflicted.

AT West London Police Court, Dillon Clarence Willoughby, a gentleman residing in Piccadilly, appeared to answer an adjourned summons for driving a motor-car on the evening of the 28th August last in the High Road, Chiswick at a greater speed than twelve miles an hour. Mr. Pierson defended. It appeared from the evidence of Sergeant Hardy that the defendant, who was accompanied by other gentlemen, was driving at the rate of fifteen to sixteen miles an hour, colliding with a bicycle, causing the rider to fall off. The speed was disputed, and also that the cyclist had fallen off his machine. On behalf of the defendant, Mark Freeland, of Holborn Viaduct, was called, and stated that the speed was a good ten miles an hour. He also stated that the defendant sounded the horn several times, and tried to avoid the cyclist, who was standing in the road. The cyclist, who was re-called, corroborated the defence by stating that he had dismounted from the machine just before it was struck by the car. Ultimately Mr. Lane, K.C., convicted the defendant, and fined him £5, with 30s. costs. Mr. Pierson gave notice of appeal.

AT Chelmsford, Victor Lee, of London, was fined £5 and £1 4s. 8d. costs for driving a motor-car between Ingatestone and Chelmsford at a greater speed than twelve miles an hour. The defendant, it was said, covered five miles in fourteen minutes, but he alleged that he was mistaken for another driver.—Lieutenant Spender Clay, of the 2nd Life Guards, who was alleged to have covered nearly five miles in ten minutes, was fined £5 and £1 3s. costs for a similar offence at the same court.

AT Eastbourne, a motor-car incident occupied the attention of the County Bench. The police evidence showed that the accused, a Folkestone gentleman named Arthur Leslie Bucknall, covered a quarter of a mile in thirty seconds on a road only sixteen feet wide. Defendant was fined £5 and costs.

AT Norman Cross, Harry Livesay, of Trulls Hatch, Rotherfield, Sussex, was fined £5 and costs for driving a motor-car at a speed alleged to have exceeded thirty miles an hour.

At Guildford, J. C. Dennis was summoned for furiously driving a motor-tricycle. According to police evidence defendant had travelled at a speed of twenty miles an hour. Questioned by defendant as to how he ascertained the speed, the constable admitted that he had guessed at the time taken by the motor-cycle in passing a portion of the road afterwards measured. Defendant produced a stop watch and offered to plead guilty if witness could tell within three seconds when fifteen seconds had passed. The challenge was not taken up. Defendant proved to the satisfaction of the Bench that at the time of the alleged offence he was riding in company with a lady on a bicycle, who had for the previous five miles kept up with his motor-tricycle. The case was dismissed.

At Huntingdon Divisional Bench, Allan Wilson, of Newcastle, was summoned for driving a motor-car at a greater rate than twelve miles an hour, at Alconbury, on September 12th. Defendant pleaded not guilty. P.C. Bozeat said about 12.30 p.m. he was at Alconbury Hill when he saw a motor-car coming from the direction of Alconbury at a very fast speed. He timed it from a cottage, and it was thirty-five seconds coming from the cottage to where he stopped it, a distance of 376 yards, which was at the rate of twenty-one miles 1,714 yards an hour. Defendant offered witness a drink and put money in his hand. Defendant said it was impossible for him to get up that rate of speed, because he had just started from a breakdown which happened at the cottage mentioned by the policeman. Fined £3 and 8s. costs.

At Godstone J. M. Gorham, of Westminster, was summoned for driving a motor-car at a greater speed than twelve miles an hour at Pebble Hill, Limsfield, on 22nd September. P.C. Taverner said defendant's car covered 176 yards in fifteen seconds, or at the rate of twenty-four miles an hour. Mr. Hans Hamilton, barrister, appeared for defendant, and made a point of the fact that the constable timed the car with a watch having only the ordinary small seconds hand, which, he contended, even an expert could not do satisfactorily. Defendant said he had travelled from Tonbridge on the day in question, and his average speed from Tonbridge to Limsfield was about eight miles an hour. Within 200 yards of the bottom of the hill his speed was only two miles an hour. Mr. Soper: If you take it that the constable's time should be eighteen seconds, it still made the speed twenty miles an hour, and even if 50 per cent. were allowed, defendant would exceed the speed allowed by the Act. Fined £5 and costs, 10s. 6d. Notice of appeal was given.

At Godstone, J. Dotteridge, of Bickley, Kent, was summoned for driving a motor-car, on the 15th September, at Limsfield, at a greater speed than twelve miles an hour. P.C. Taverner stated that the defendant covered a distance of eighty-eight yards in seven seconds, working out to about 25½ miles an hour, on the road between Westerham and Limsfield. Defendant pleaded that it was impossible for the car to travel the pace. The Bench inflicted a fine of £5, and costs 10s. 6d.

At Bearstead Police Court William Crawley, of London, was summoned for driving a motor-car at a greater speed than twelve miles an hour. Superintendent Jessop said the defendant covered more than 300 yards in less than thirty seconds. The Bench imposed a fine of £5 and 15s. costs.

At Peterborough, Edward Dyer, of Fathingstone, Suffolk, was summoned for travelling on a motor-car at a greater speed than twelve miles an hour at Wansford and Upton on September 13. Defendant denied the offence. P.C. Perkins stated that he timed the defendant from the turn to Upton to the milestone at Ailsworth, a distance of half a mile, and he covered it in just under a minute. P.C. Cole, who met defendant on the day in question, stated that he was going over twenty miles an hour. Fined £2 and 6s. costs.

At Norman Cross (Huntingtonshire) Police Court, John Parrott, a motor-car driver, of Croxton Park, St. Neot's, was fined £2 and costs for driving his car at twenty-two miles an hour.—Edwin Midgeley, of London, similarly summoned, was fined £3 and costs. Defendant was stated to be travelling at the rate of twenty-three miles an hour.

Reported above are 17 prosecutions for furious driving. In 1 case the summons was dismissed, while in 16 cases fines amounting to a total of £68 without costs were inflicted.

A COMMISSION CASE.

In the Aberdare County Court, Mr. W. Parker Thomas sued Mr. D. J. Ryan, artist, Treorky, to recover £27 15s., being alleged agreed commission of £7 10s. per cent. upon £370 purchase money of a motor-car sold by plaintiff for defendant. Mr. W. D. Phillips appeared for Thomas, Ryan being represented by Mr. W. Howell. It appeared from the evidence that by plaintiff's intervention defendant was on July 5th last introduced to two men named Melville and Rusbatch, who entered into an agreement to purchase the motor-car for £370, and paid thereon a deposit of £5. The balance of the purchase money had not, as a matter of fact, ever been paid, but Melville had since purchased a car elsewhere, and was now a licensed driver. Mr. Phillips contended that plaintiff had fully completed his obligations to Ryan by finding purchasers, with whom defendant entered into an agreement, and cited several authorities in support. Mr.

William Howell, in a lengthy argument, submitted the claim for commission could not succeed until the agreement was carried into effect and purchase-money paid; Melville and Rusbatch were unknown to his clients and seemingly were never in a position to complete the contract. He quoted several cases, and insisted the law required actual transfer before commission became payable. In giving judgment, his Honour said the present case was, to his mind, on all fours with that of *Passingham v. King*, in which the Court of Appeal held that the commission was payable if the agent found a purchaser whom the vendor was willing to accept and who would accept the latter's terms. Here the plaintiff had produced men who, in his (the judge's) opinion, were able to carry out their contract, and consequently there would be judgment for the amount claimed with costs. Stay of execution was granted, with a view to an appeal.

A PROMOTER'S FAILURE.

A SITTING of the London Bankruptcy Court was held last week before Mr. Registrar Linklater for the public examination of Alfred William Mason, one of the promoters of the Reyrol Motor-Car Company, Limited. The debtor, who applied to pass upon accounts showing liabilities £4,395 against assets £25, stated that the greater part of his liabilities related to the promotion of the above-mentioned company. The scheme was initiated in May, 1900, when he consented to join in the promotion and to provide a portion of the expenses of the flotation. The Reyrol Motor-Car Company, Limited, was registered in December, 1900, but never went to allotment, and the subscriptions were returned to the applicants for shares. That was his only experience of company promotion, and he attributed his insolvency entirely to the failure of the flotation of the Reyrol Motor-Car Company, Limited. The examination was concluded.

ON THE WRONG SIDE.

At Southport F. J. Gillibrand was summoned for driving his motor-car on the wrong side of the road on the 18th September. Defendant said he was not aware that there were any special regulations. He was crossing from London Street into Nevill Street, and had to go on to the right side, as there was traffic in the way. He did not notice either of the police-officers. At the time he would be going about five or six miles an hour, and was not aware of any special regulations. The Chairman said they did not think defendant had done it wilfully, and he would be fined 5s. and costs.

PANHARD AND LEVASSOR v. MONTAGUE HAWNT AND COMPANY.

BEFORE the Lord Chief Justice, Vacation Judge in Chambers, the case of *La Societe Panhard and Levassor v. Messrs. Montague Hawnt and Company*, was heard. After hearing the solicitors for the plaintiffs and the defendants, and upon reading the affidavit of Emil Adam Merkel, the Lord Chief Justice ordered the defendants, their managers, servants, and agents be perpetually restrained from using or advertising the name "Panhard" by the title or description of "Miniature Panhard," "M.M.C. Panhard," "Panhard Fittings," "M.M.C. Panhard Motors," or either of them or any other title or description containing the name "Panhard" in connection with the manufacture, sale, or use of motor-vehicles, or parts, and from carrying on their business in a manner calculated to deceive the public and lead them to believe that the goods manufactured or sold by the defendants are those manufactured or sold by or on behalf of the plaintiffs, and that the defendants do pay to the plaintiffs their costs of this action to be agreed or taxed.

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COMMENTS.

PARTICIPANTS in last year's run of the Automobile Club to Southsea will learn with interest that another visit to that hospitable resort is being organised, and will take place on the 16th prox. This is the fifth anniversary of the coming into operation of the Locomotives on Highways Act of 1896, and from all we can learn the run is likely to attract even more attention than the popular event of last November. This year the route will be

via Whitehall, Richmond Park, and Staines to Egham Hill, on the top of which the vehicles will be drawn up and restarted. From Egham to Winchester—where lunch will be taken—the route will be via Bagshot, Hartford Bridge Flats, and Basingstoke. Passing through Twyford, Bishop's Waltham, and Fareham, the vehicles will draw up at the seventeenth milestone from Southampton before entering Cosham, where a procession will be formed. Proceeding in regular order the cars will go to Southsea Common, where they will disperse.

Non-Stop Diplomas.

IN the evening a dinner will be held at the Portland Hall, Kent Road, Southsea, at which it is hoped the Hon. J. Scott Montagu, M.P., will preside, and at which there will be a very representative gathering of motorists. It is the intention of the Automobile Club to give non-stop diplomas in respect of vehicles completing the journey from London to Winchester and from thence to Cosham without a stop—except, of course, for restive horses—and at a moderate speed. This latter condition should convince even the most prejudiced person that motorists have no desire to be unreasonable. In fact, the regulations which the Automobile Club proposes to enforce are conceived in the most conciliatory spirit, and drivers are specially besought to avoid driving at unlawful speeds. Not only that, but vehicles arriving too early at their destination are liable to disqualification. We hope the Press will give full publicity to the Club regulations as showing in the clearest possible way the desire of motorists to show every consideration to other users of the road. Claims for the non-stop diplomas will have to be made on the Monday following the trip, and we hope to be able to publish a list of these in our issue of the following week.

More Post Office Experiments.

AFTER a lapse of two or three years the Post Office is again making experiments with motor-cars. This time it is the Milnes' one-ton petrol van, built on the lines of those which did so well in the Liverpool trials, which has been selected for service, and which is now carrying the Parcels Post between Mount Pleasant Post Office, E.C., and Redhill. The distance is

24½ miles, and the car is timed to leave London at 10.27 p.m. and reach Redhill at 1.30 a.m. The first run was made on Wednesday evening of last week, when the lorry left Mount Pleasant at 10.30 p.m. partially loaded, and running through the City to the parcel post office at London Bridge, there made up its load to twenty-one baskets of parcels averaging 60 lb. apiece, or a total load of 11 cwt. 1 qr. Notwithstanding a stop of 5 mins. in Streatham to shed the officials of the department, and another stop of 10 mins. in Croydon, the lorry ran into Redhill 1 min. before the scheduled time. After discharging the down cargo a load, not quite so heavy as that previously carried, was taken on board for Mount Pleasant, and an uninterrupted run home was made in the small hours of the morning. Five o'clock was set down for the arrival, but the petrol van ran in at 4.45 a.m., 15 mins. in hand, with an average speed to its credit of over ten miles per hour. The lorry will essay to repeat the above service every night, except Saturdays and Sundays, for three weeks, and the contractors are sanguine of success, also of inducing the Post Office to put many such vehicles upon the road in lieu of the slower and more expensive horse-drawn vans employed at present. Up to the time of writing we learn that the car has met with unqualified success, most of its runs having been of the non-stop order.

Motor Mail Vans in America.

IN connection with the foregoing it is interesting to note that the United States Post Office Department at Washington has just invited tenders for furnishing and operating five motor-vehicles of a mail-carrying capacity of not less than 1,000 pounds each, for transporting the mails at Minneapolis, Minn., for the period from January 1st, 1902, to June 30th, 1903. The vehicles are to be operated by the contractor with a running time not exceeding sixteen hours each day for each vehicle, divided into such runs as may best meet the requirements of the service. The contractor will be required to have a sixth motor-vehicle on hand as a reserve, so that the service may at all times be performed in the kind of automobile accepted by the Department. The operators are to be provided by the contractor and will be required to operate the vehicles in such a manner as to secure the utmost expedition practicable in reaching the points at which mails are to be received or delivered.

Motor Omnibuses for Birmingham.

ON Friday last the members of the Birmingham Watch Committee, Chief Constable and other officials took part in the trial trip of a motor-omnibus, of the kind employed by the Corporations of Southampton and other provincial towns for the conveyance of passengers. The bus, which holds sixteen or eighteen passengers, is roofed and open at the side. It started from the police station in Newton Street, and in the course of the trip traversed the route which it was suggested some time ago should be worked by motor buses, by way of Broad Street and Five Ways. The vehicle ran smoothly and steadily, and the trial was regarded as satisfactory.

A New Use for Tube Ignition!

A WRITER in *The County Gentleman*, in discussing the question of tube v. electric ignition for petrol motor-cars, remarks:—"There is also another very important (though secondary) advantage in having tube ignition as an auxiliary—even if one could be perfectly positive that nothing would ever go wrong with the electric system—and it is this, that by merely letting the bonnet of the engine down on its hinges, and temporarily substituting a stout wire tripod for the detachable cowl of the little chimney, one has not only a very ready and economical, but also very speedy way of boiling kettles or cooking chops respectively, as the exigencies of travel may require. This can, of course, only be done when the car is at rest, but is of much value; indeed, it is a matter of considerable regret that the oven-like boxes in which the burners are usually placed have not hitherto been made of sufficient size to also permit of comestibles being at the same time baked therein." After reading the foregoing extract, we had to glance over the other portions of the article from which it is taken to ascertain whether it was written jokingly or not, but apparently the suggested new uses for tube ignition are put forward in all seriousness.

The Eccles Motor Fire Tender.

WE are this week able to publish an illustration of the motor fire tender that has lately been built for the Corporation of Eccles, near Manchester, by the Protector Lamp and Lighting Company, Ltd., of Eccles. The tender is arranged to carry five men, three hundred yards of hose, two double-headed



stand pipes, four branches, set of scaling ladders, jumping sheet, bucket and pump combined, ceiling hook, etc. It is driven by a 7 h.p. double-cylinder water-cooled engine fitted with variable electric ignition. The motor is carried at the front horizontally with the frame, and its power is transmitted by means of chains to the countershaft, on which the clutches are actuated, and thence to rear axle. Two forward speeds only and reverse are fitted. The machine handles full load anywhere in the borough on the high-speed gear, varying with ignition, and can attain a speed of fourteen to sixteen miles an hour on the level. Solid tires and tangent wire wheels are fitted. The whole of the body is arranged to slide or lift off, so exposing every part of the engine to view and doing away with the necessity of a pit. The machine was delivered at the beginning of September, and has been running about every day since to give it a thorough testing before the Committee decided to dispose of its horses, which were sold three weeks ago. The idea of a motor fire tender for Eccles originated with the present Mayor, Mr. F. Smith, to whose credit should be placed the introduction of this class of vehicle for First Aid Fire Brigade service.

The Liverpool Self-Propelled Traffic Association.

A MEETING of the council of this Association was held on Monday under the chairmanship of Mr. Alfred L. Jones, J.P. There were also present Mr. John A. Brodie (vice-president), Professor H. S. Hele-Shaw, F.R.S. (vice president), Messrs. S. B. Cottrell, W. Beckett Hill, Arthur Musker, William Oulton, J.P., Henry H. West, and E. Shrapnell Smith (hon. secretary). A letter was read from the Judges of the recent heavy-vehicle trials, intimating that their report would be ready about the 24th inst., and it was resolved to present the report to members of the Association that day. The Chairman announced that Mr. Walter Long, President of the Local Government Board, had consented to receive a deputation from the Association and the commercial associations of Liverpool, with reference to the present limit of tare upon motor-wagons—viz., three tons, which it is sought by the Association to have increased. It was arranged that the presentation of the report should take place at the same time as the deputation to Mr. Long, which will be at 11.30 a.m. on Thursday, the 24th inst., at the rooms of the Liverpool Incorporated Chamber of Commerce.

The 1902 De Dion Light Car.

WE are able to publish on page 599 an illustration of the light car which Messrs. De Dion Bouton and Co., of Puteaux, are bringing out for the 1902 season, and about which there has been a good deal of speculation. The most notable change is, of course, the placing of the engine—a single-cylinder one of 8 h.p.—under a bonnet in the fore part of the frame. For the moment we can but briefly mention that the car is provided with two speeds forward and a reverse motion, the differential and change-speed gear being contained in a single oil-containing case. Inclined irreversible hand-wheel steering and a powerful hand brake on the differential gear drum, in conjunction with which is a device acting on the governor, and so slowing down the engine, are other points of the new vehicle about which we hope to have more to say in an early issue.

Official Education of Horses.

AN idea which we commend to the notice of all rural and district councillors was mooted at the Sculcoates (York) Rural Council the other day when Dr. Wilson-Barkworth moved that the Local Government Board should be asked to sanction the hire of a motor-car by the Council for the purpose of getting horses in the locality accustomed to such vehicles. Such a notion deserved a better fate than to be rejected; but the fact that it was made is notable, and we would suggest that some other local body might make such an application to the Local Government Board. Private owners of automobiles have already done much in this direction; it is about time some representative bodies did similar service.

The Scottish Automobile Club.

ON account of the uncertainty of the weather prospects and the comparatively limited number of members of the Western Section of the Scottish Automobile Club who were free to engage in it, the proposed run to Lanark for Saturday last was postponed. A number of members and friends, however, who had left themselves disengaged for the proposed function, at the invitation of Mr. John Stirling, ran out from Glasgow to Fairholm (three miles south of Hamilton), the residence of Mr. Stirling. During the early part of the afternoon rain fell heavily, but by four o'clock the weather had improved, and by the time Fairholm was reached had entirely cleared. After tea had been served the friends strolled through the picturesque grounds and gardens, and the return journey commenced at six o'clock. Our illustration on page 597 shows the party drawn up in front of Mr. Stirling's residence.

Tram-lines near London.

TRAM-LINES are regarded with aversion by cyclists and motorists alike, and evidently owners of automobiles in the London district are likely to be surfeited with them. A few months ago complaint was made that the main avenues of traffic in the City were "up" and that the streets resembled barricades; now the way of the motorist is threatened in the suburbs, and his progress out of London is harassed by tramway extensions and the like. The Uxbridge Road as far as Hanwell and Southall is now a thoroughfare with tram-lines that threaten the unwary driver; the same company that is responsible for this development is also promoting a similar service on the Surrey side of the river to extend as far as Epsom. A little further afield a proposal is being discussed to connect Farnham with Haslemere, by way of Headley, Grayshott, and Shottermill. In other districts near the Metropolis plans for electric trams are "in the air," and their realisation in actual fact on the roadways is a bad look-out for the Metropolitan motorist anxious to have short runs into the country. The effect of all these projects will be to remove the country further from the City.

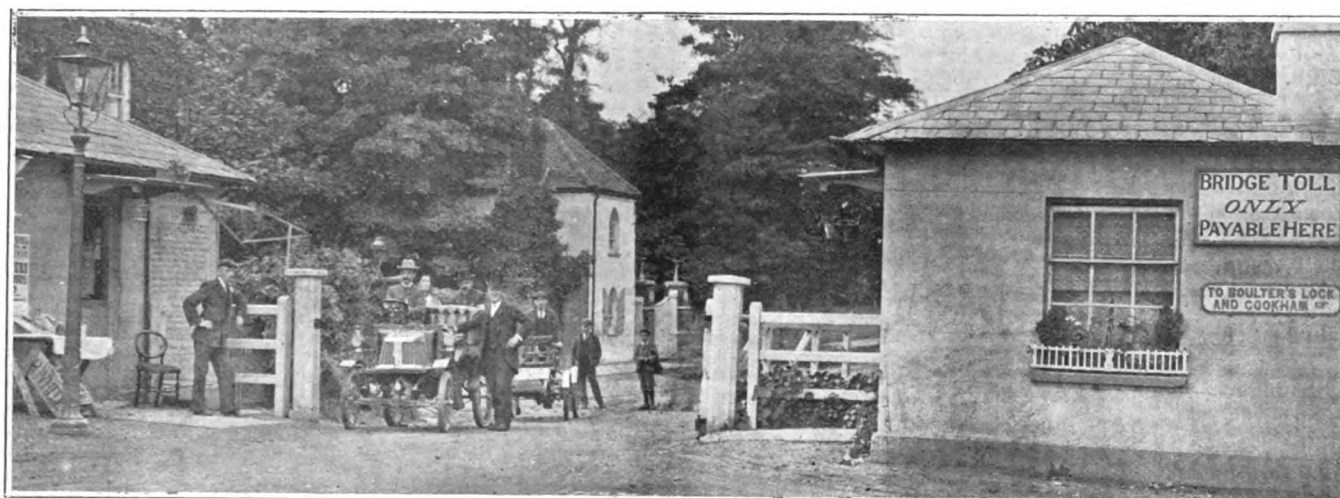
A Broken Shaft.

SAD is the plight of the Rev. W. D. H. Armstrong, who is a member of the Yeovil Rural District Council, which has just passed a resolution in favour of the numbering of motor-cars. He told his colleagues at their last meeting that "my horse was frightened the other day, and I had a shaft

when it was ready, delivery of the tires of the size required could not be obtained from the Clement-Gladiator Company, and, as Mr. Phillips wished to spend his vacation abroad, he asked for ordinary Michelin tires to be fitted at once so that he could use the car on the Continent. Having spent some time away, he returned for the Glasgow trials and got into telephonic communication with the Clipper Company, asking them to license the tires on the car (which was still in France) by marking them on payment of the difference between Michelin's price and theirs—or any sum they desired. Mr. Phillips was referred to the Dunlop Company, to whom a similar request was then made.

The Dunlop Company's Action.

IN reply the Dunlop Company wrote that the importation of the Michelin tires would be an infringement of their patents, and Mr. Phillips was warned against such action. He replied, pointing out his position as a private owner who had failed to obtain tires from the Clement-Gladiator Company because of their inability to supply the required size, but the only response was a request for the delivery of the alleged infringing tires and an undertaking not to again import such tires. Still anxious to avoid annoyance and trouble, Mr. Phillips sent to the Clipper Tire Company for a new set of tires to be sent to Newhaven ready to be put on the car when it was brought from France. They, however, had not the size required in stock. The further correspondence disclosed nothing new, but Mr. Phillips, in his letter to us, significantly adds, "It is, to my mind,



THE MAIDENHEAD BRIDGE TOLL-GATE—THE LAST REMAINING TOLL-GATE ON THE BATH ROAD.

Photo by

Luff, Slough.

broken." We fail to see how numbering a motor-car would have minimised the breaking of the reverend gentleman's shaft. "Apart from this," he went on to say, "people's nerves are being upset from the sudden and unexpected appearance of motor-cars on the roads." In addition to blowing horns to announce their coming, motorists will have to telegraph or telephone to all the nervous people fifty miles ahead—or the Rev. W. Armstrong will be on their track. Really someone should take this distinguished member of the Yeovil District Council for a ride on a motor-car, especially as he is suffering from a broken shaft.

Michelin Tires.

ANYTHING that tends to restrict the sale of motor-cars is not likely to find favour with enthusiasts. Hence the attitude taken up by Mr. Robert E. Phillips in sending to us copies of a correspondence in which he has recently been engaged with the Dunlop Pneumatic Tyre Company, Ltd. Some months ago he ordered a car in Paris, giving instructions that, when finished, it was to be fitted with licensed Michelin tires to be obtained from the Clement-Gladiator Company. But,

open to question whether it is not a restriction of trade to refuse to license tires fitted to the wheels of foreign cars before their importation into this country on payment of a sum equivalent to the loss of profit that would accrue from the sale of such tires in this country."

Maidenhead Bridge Tolls.

IN our issue of the 5th inst. we referred to the movement which has been started to free Maidenhead Bridge from toll. This is the only toll-gate now remaining to obstruct the great Bath Road, and, according to the prime movers of the agitation, the Maidenhead Corporation since 1836 have had no right whatever to levy any toll, and they have therefore since that date been acting illegally. Our illustration shows the toll-gate at Maidenhead which it is now being endeavoured to remove. In the picture are seen the three gentlemen who have taken the matter up seriously—Mr. J. Fulbrook being at the wheel, Mr. Howlett in the car, and Mr. Taylor at the side.

The Automobile Club and Electromobilism.

MR. THEODORE CHAMBERS sends us a copy of a long letter he has addressed to the editing committee of the Automobile Club *Notes and Notices*, which limitation of space prevents us from dealing with at length. We may mention, however, that Mr. Chambers is at pains to show that the electric car cannot be said to have received that consideration from the Automobile Club of Great Britain and Ireland which has been bestowed on other forms of carriages. In conclusion, he remarks that "once again the necessity has been demonstrated of the formation of a special committee in connection with the Club to deal with electric cars and their requirements, and to superintend trials in which they are engaged."

Motor 'Buses for Portsmouth.

PORTSMOUTH is moving with the times, and a company has been formed with the object of providing Portsmouth, Gosport, and the surrounding districts with an efficient and regular service of motor-cars. At first, the company intend chiefly to ply upon roads not served by the Portsmouth Corporation Electric Tramways. The new company—Portsmouth and Gosport Motors, Limited—has purchased a car (with a seating capacity for nine persons only, including the driver), which has been plying daily between Clarence Pier and South Parade Pier for some time past. It is intended, as soon as the needful capital has been subscribed, to acquire additional vehicles.

A Motor-Cycling Club.

As a result of a suggestion made in these columns by Mr. T. Underwood, a meeting convened by that gentleman was held in London on Thursday last week, to discuss the advisability of forming a Motor Cycling Club. Mr. Hunt took the chair and Mr. A. J. Wilson opened the discussion with a speech in which, after giving a humorous account of the clubs he had been connected with, he strongly urged those present to join the already existing English Motor Club, rather than to embark upon the troubles of forming an entirely new club. It appeared evident, however, from the speeches of other speakers that what was desired was a motor-cycling club, and that cars should be vetoed. A vote was taken, which showed that eighteen were in favour of forming a distinct club and four against. It was then decided that the club be called "The Motor-Cycling Club," with a subscription of one guinea, and that the first fifty members enrolled would not be called upon to pay the half-guinea entrance fee. Afterwards a provisional committee was appointed to draw up the necessary rules, etc., and Mr. T. Underwood and Mr. G. Tripcony were elected hon. secretary and hon. treasurer *pro tem.* respectively. About twenty-five attended the meeting, but it was announced that letters had been received from thirty-two prospective members. Any motor-cyclist desiring particulars of the objects of the new club should communicate with Mr. T. Underwood, the hon. secretary, at 13, Colville Mansions, Talbot Road, Bayswater.

Danger Boards.

THE Committee of the Automobile Club propose to erect boards cautioning motor-car drivers at points where special caution is necessary. Owing to the great brake power with which motor-vehicles are provided, their drivers are in the habit of paying little or no attention to the cyclists' warning boards. It is not proposed to erect danger boards at every steep hill, but only at such hills and at such points as demand that motor-car drivers should proceed with the utmost caution. The County Surveyor of the Gloucestershire County Council advises that a danger board should be erected by the Club at Tutshill, as there have been several accidents at Chepstow Bridge. If any motorist knows this district it would be a convenience if he would send to the Secretary his opinion with reference to this suggestion. The Gloucestershire County Council have given permission for the erection of a danger board at the top of Birdlip Hill, and arrange-

ments are now being made for the board to be placed in position. The permission of the Surrey County Council has been asked to erect a special danger board on a very dangerous part of the Hogsback at the Farnham end.

Persecution in Surrey.

"NEVER contradict a policeman and never question a witness against you" is the advice which might be tendered to motorists after watching the proceedings at the magistrates' court at Reigate. On Saturday forty-seven cyclists and thirteen motorists appeared before the Bench charged with riding at a pace that was more rapid than the comprehension of the authorities. Not a single man—or woman—escaped; all were fined, and those who attempted to justify themselves fared the worst. In the case of one motorist, whose mechanic was a Russian speaking no English, the constable, of course, had an uncontradicted course, but not so when Mr. Moffat Ford stepped up to answer a charge of driving at the rate of twenty-three miles an hour. The policeman read the pace from a paper, but Mr. Ford suggested he should read from the note-book in which he took observations at the time—a very proper thing for him to have done. But for his curiosity Mr. Ford was ordered to behave himself, and his case was put back till all had been dealt with. The Surrey police are rendering some service in showing the absurdity of the present situation, and helping to make it clearer than ever that the only satisfactory solution of the present difficulties will be to alter the law so that it is criminal to drive to the common danger, and not to make it an offence for driving rapidly on a lonely country road with few people about.

Allotments of Space at the Automobile Club Exhibition.

"At the last meeting of the Club Committee of the A.C.G.B.I. a letter was submitted from Messrs. Cordingley asking the approval of the Allotments Committee of the Club to the allotment of space at the Agricultural Hall Exhibition to a number of firms who had applied for space. It was recommended by the Standing Committee that Messrs. Cordingley be informed that, in pursuance of the resolutions of the trade, the Committee cannot approve of allotments of space being made unless the notice of allotment be accompanied by a statement in writing that it is made on the understanding that the exhibitors do not exhibit anything connected with motors, other than parts of motor-cycles and accessories to motor-cycles, at any other exhibition within twenty miles of Charing Cross prior to the Automobile Club's Exhibition of 1903, and that if an exhibitor infringes this arrangement he shall forfeit the moneys paid by him on account of space taken at the Agricultural Hall Exhibition. It was further recommended that Messrs. Cordingley be requested to submit, for the approval of the Sub-Committee, a copy of a contract embodying this arrangement for transmission to applicants for space. The recommendation of the Standing Committee was adopted by the Club Committee."

Helping the Horse.

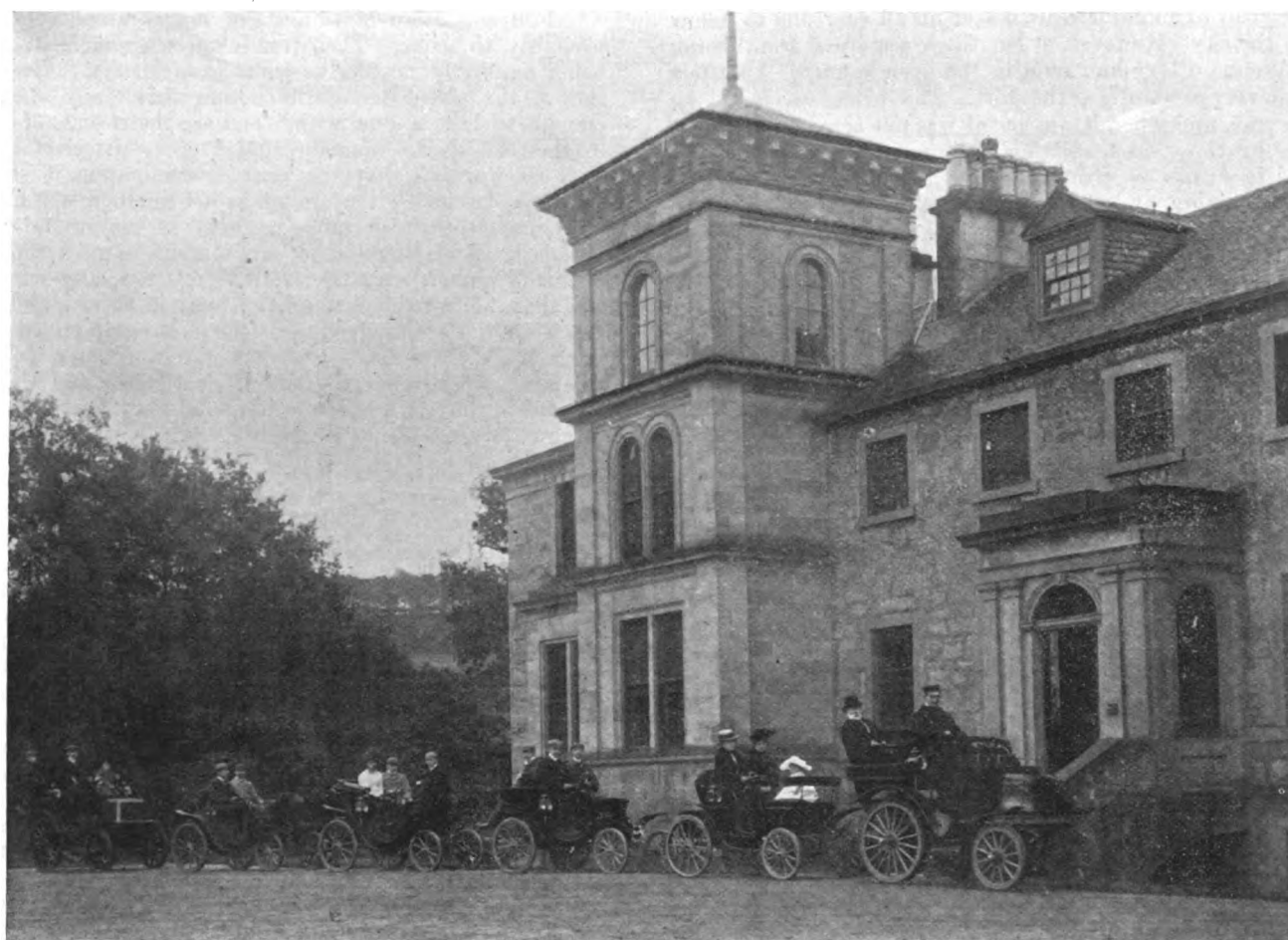
WRITING to a Liverpool journal, Mr. Archibald Ford ventures on prophecy, predicting that "before very many years have gone it will be declared by law to be criminal for horses to be used for any purpose whatever on any public highway." Mr. Ford is unnecessarily sanguine. Of course we recognise how much the public is at present at the mercy of animals of uncertain temper, but it must be remembered that, since the world began, the horse has been a recognised help of man in pleasure and in business. Automobilists do not seek the obliteration of the horse, but they do desire the lessening of his burdens.

THE Piccadilly to Putney motor-bus is well patronised, as no doubt would be a more frequent service. At present the solitary motor-cars are not sufficiently in evidence, and thousands of passengers who would gladly avail themselves of its advantages are compelled to adhere to the time-honoured if slower means of transport.

A WINTER RUN IN 1900.

EVEN at the present time it is not everyone who has had the opportunity of a spin upon a powerful car, still less of a run of sufficient length to enable him to gain a true idea of what such a carriage really is and can do. So I am putting down a little account of a delightful week during which almost the entire hours of daylight were passed upon a 12 h.p. car, or in mending its tires. The more powerful vehicles are, of course, not uncommon now, but I am sure that in a touring carriage for not more than four persons no larger engine is needed; while the inconvenience in some respects even of this size—its noise, its enormous consumption of petrol, and so on—would certainly disincline one from desiring anything bigger. I decidedly formed the opinion myself that we had in the car

nature's arrangement in this matter into the art of tailoring; but there seems to be no doubt that as far as warmth goes, and the quality of resisting rain and dust and the various disturbing influences of serious motor work, it is a mistake to put the cloth outside and the fur in. I had already procured in London the only additional garments which I intended to wear—i.e., a tarpaulin cape and knee rug, exactly such as are used by omnibus men, and also what I believe they call a "tool strap" to act as a belt and keep the different layers of clothes and rugs in position. These worn over an ordinary fur coat answered very well, and we intended to be prepared for extreme cold and to put on every kind and sort of apparel, congruous or otherwise. Perhaps I may be allowed to recommend to others what I have found most comfortable myself—a pair of long-cloth gaiters covering the feet like spats,



A PARTY OF THE WESTERN SECTION OF THE SCOTTISH AUTOMOBILE CLUB AT MR. J. STIRLING'S RESIDENCE AT FAIRHOLM. (See page 594).

which was used in this trip a carriage exactly suited to such a purpose, in power and in comfort hitting the happy mean. Of course I was delighted to accept the invitation of my old friend to go with him. The car had been sent on a few days before to Paris in charge of the skilled and, fortunately, bilingual *mécanicien*; it was to have had a second radiator fitted under the frame at the back, for the coils in front of the motor bonnet were in this case at any rate insufficient except when running at a high speed; but there was not time to get this done. We found, however, on our arrival in Paris that the engine had been considerably improved by the orifices of the sprays having been slightly enlarged. My friend and I reached the Ritz Hotel on Monday evening, February 12th, having travelled most of the journey through a snowy landscape. We provided ourselves with the most approved kind of goggles, and my friend with a skin-outside fur coat. An Englishman has a prejudice against carrying

reaching well above the knee, and laced up the sides with hooks. These I had used some years before during a winter in Switzerland for tobogganing, and now routed out again. I consider the knees the most vulnerable parts, and that if they are kept warm the rest of the body remains comfortable. We took with us also several Instras, and both for the driving and as a protection against damp sheets in disused rooms, I think them worth the trouble of carrying.

It took a few moments, as may be supposed after this catalogue, to pack ourselves and our belongings into the car next morning. The luggage went in first—two fair-sized bags and a square leather case; the latter had not been contemplated, and was of some trouble at first, only mitigated by the fact that it contained an ample supply of cigars. While experiments were being made as to the disposal of our goods, I had time to look at the car, which I had not seen before. With what different eyes we

and the general public regard an automobile! They look upon the machinery as a disfigurement, and we as a glory. The lines of a Panhard may not be beautiful in the abstract, but they certainly possess that beauty which consists in suitability; and I am disposed myself to think that those makers who resist the public demand for hidden mechanism, and construct cars which are frankly light locomotives, have the processes of evolution in their favour. Nothing, certainly, could strike one as more perfectly adapted for a thousand kilometres journey than the Twelve Horse in all its simplicity and solidity—with its oilers and grease-pots all brought into a row on the dash, its glass-water filler-cap, its three great Bleriot lanterns that make daylight in the darkness a hundred and fifty yards ahead, and with its enormous reserve of strength betokened by the four almost simultaneous explosions, and the intervals of several seconds, alternating under the restraint of the *ralentisseur*.

At last we were all packed in and the real thing began. We took the road to Fontainebleau, not at all an easy one to follow through the city. However, at length we were past the turning to the Avenue d'Ivry and soon in the open country. Matters did not go very pleasantly at the start. The surface was for a long distance *pavé*, and when it was not it was cut across at frequent intervals by those deep gullies which make many of the best stretches in France so treacherous. Then it began to rain, at first threateningly, and then as if it really meant it. Next the luggage began to get adrift and had to be fixed up in a new way. Have not old cyclists the recollection that the first half day of every tour was occupied in getting "multums" to stick on the topside of the backbone, handle-bar rolls to keep out of the way of the knees, knapsacks on the shoulders, and brown paper parcels on the machine in any way at all? Then as the morning wore on and the rain kept at it, everything and everybody, specially the party on the backseat, became almost unrecognisable with mud. Then the near-side tyre went down, and gave us a foretaste of what was to come. The forest looked thoroughly dispirited and as if its attractiveness were completely washed away. Places with a reputation can afford I suppose, like people, to resign themselves at times to their miseries, and everyone knows that Fontainebleau really does offer the finest woodland scenery in France. We made no stop, but quickly passed through Nemours and Montargis to Briare, where we thought that we had been soaked long enough and decided to stay the night. The canal of Briare was, I think I am right in saying, the first with double slope cut in Europe since Roman times; and the three or four water-ways hereabouts are examples of the admirable system which exists throughout France. They intersect this neighbourhood so as to put the largest river in the country, and the busiest, into mutual communication (the Loire and the Seine), and thus, though the Loire is in places difficult of navigation owing to shifting sand-banks, constitute a thoroughfare running in a great sweep through some of the most active towns and most productive regions in the north-west corner of France, between the busy seaports of Havre and St. Nazaire. The inn at Briare was of the simplest, but Madame made us welcome—even to her kitchen to dry our clothes; what English empress of the range would allow such a liberty?—lit fires in our rooms, and soon served us with a nice meal. Even an old traveller does not cease to be surprised at what is done in this way in the roughest of *auberges*. None of us rested very well for the creakings and crashings which went on continuously. A gale had been raging all night, and when we came down in the morning it was to a scene of devastation. The whole of the windows in the front of the *café* were blown in, and so were most of the windows along the street; slates were still dropping from the roofs, some of the Louvre shutters had been carried away, and the entire chimneypiece had been thrown on the floor of the *mécanicien's* room. ARUNDELL WHATTON.

(To be continued.)

A FRENCH engineer, of Vitry-sur-Seine, is said to have made successful experiments with a motor-plough, and hopes shortly prove its practical utility.

FLOTSAM AND JETSAM.

BY "FLANEUR."



"RUTHLESS and reckless" is the only possible description to apply with accuracy to the organised campaign of persecution which the authorities of several counties have set on foot against the automobilist. Within quick succession we have been treated to the following choice displays of police maladministration:—Timing the speed of a motor-car with a common watch without a seconds hand; guessing pace without any watch at all, and then swearing to a given number of miles per hour on oath; professing to measure a stretch of road, basing speed calculations accordingly, and then confessing in court that the alleged distance was hopelessly inaccurate; amending entries in a note-book to make them tally with those of another constable, and then swearing that no erasure had been made.

FOR this state of things the magistrates themselves are primarily to blame. Their treatment of automobilist defendants being uniformly hostile, as countless arbitrary convictions have shown, the police derive the notion that "any stick is good enough to beat a dog with," and are the reverse of scrupulous in their efforts to summon almost every driver of a car whom they can waylay. Not the least discrimination is shown as to the type of vehicle; they would as lief summon a 3 h.p. Benz if travelling at thirteen miles an hour as they would a 40 h.p. Panhard. And, singular to say, the magistrates support them in this tyrannous crusade, despite the universally acknowledged fact that the twelve-miles-an-hour limit is absurd, and that the motor-car is acknowledged to be the most easily pulled-up vehicle in the world. As usual, moreover, the word of a policeman is accepted in preference to that of gentlemen, and the administration of justice at places like Reigate, where another big batch of automobilists and cyclists were fined last Saturday, is brought into supreme contempt.

POLICE and magistrates alike, however, are hugging a vain delusion if they imagine that senseless persecution is going to put an end to driving in excess of the ridiculous legal limit. No power on earth will persuade the owner of a slow car that he is doing harm by travelling at sixteen or twenty miles an hour on the open road, while those who have really fast cars are simply being forced to defy the law on every possible occasion. They gain nothing by going slowly, nor even by stopping and being civil to a policeman who holds up his hand. If they attend a court their word is not believed, and they are fined, in most cases, the maximum amount which the law allows. What earthly inducement is there to the owner of a fast car to drive with moderation when he meets with precisely the same treatment as though he went "all out"? The immediate result, indeed, of recent prosecutions has been to make the victims generally resolve to "have their money's worth" out of their cars, and, instead of fast driving being suppressed, it will henceforth show a marked increase.

THE irony of the situation is curiously displayed, where the hypothesis of "twelve an hour" being the limit of safety is concerned, by the action of the police themselves when seeking to stop a car. They think nothing of planting themselves directly in its path, knowing full well that the automobile driver has a reserve brake-power which reduces the "legal twelve" to an absolute farce. The mere fact that the policeman dares to stand in front of the car at close quarters *ipso facto* proves that the driver has his vehicle under control. Either, therefore, he is not exceeding the legal limit, or, if he is, the legal limit is palpably absurd, for the car is manifestly under control. Yet in these circumstances a fine of £10 and costs appears to many magistrates a positively benevolent way of treating the "offender."

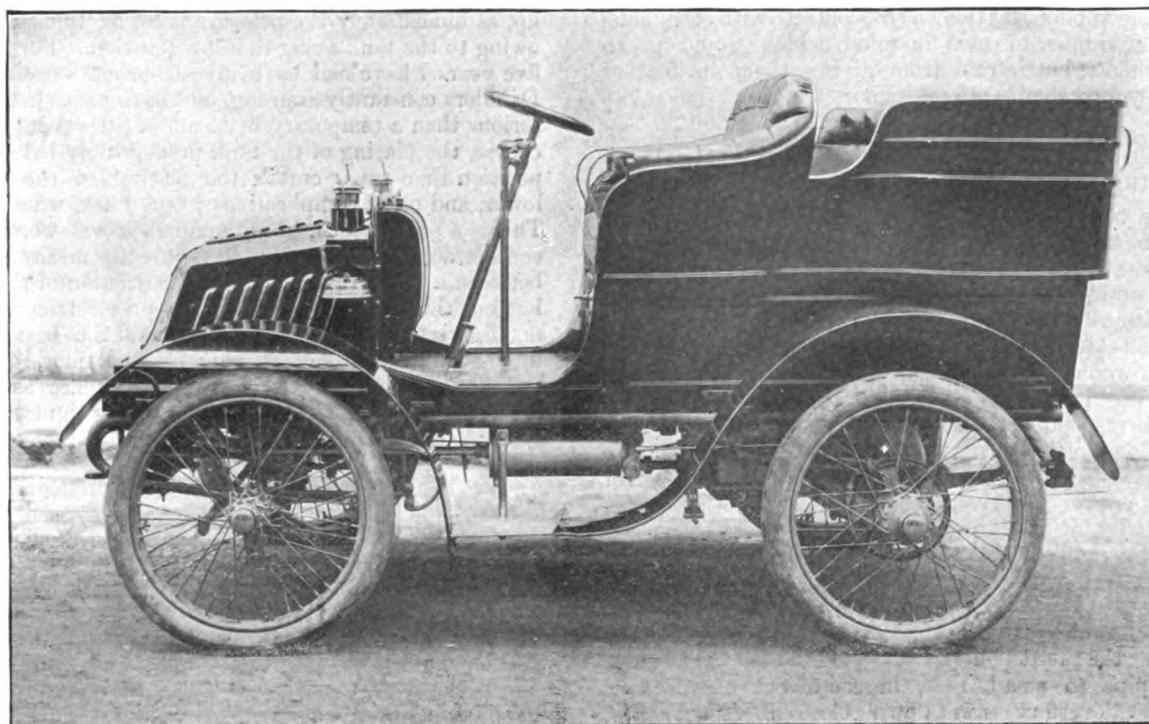
THE word has now been passed round among the Surrey constabulary that they must enforce the proviso as to the showing of a red light from the rear of a motor-car, and they are making themselves extraordinarily officious in consequence. So

solicitous have they suddenly become upon the subject that they have in more than one instance demanded names and addresses before lamp-lighting time has arrived. It may not be out of place to point out, in this connection, that some interesting arguments may arise as to what constitutes conformity with the Act. Many drivers do not carry a special red lamp in the rear of the car but have a small red lens in the back of each of their front lamps. The brackets, however, on which these are hung are placed at varying distances from the sides of the car, and it will probably be contended by the police, wherever possible, that the projection is insufficient to allow the red lights to be visible from the rear. This is the more likely to occur in the case of a car with a *tonneau* which has a pronounced "swell," with the result that the back of the vehicle is much wider than the front, and the lamps are obscured accordingly.

A GOOD point is made by *Country Life* in calling attention to the fact that the great majority of people have no opportunity of knowing how well a motor-car can behave. They see it at slow speed in traffic, and may even be witnesses of sundry stops, but have no means of knowing how far the car has run without giving any trouble. Comparatively few people, on the other

and, on questioning the mechanic in charge, discovered that nothing more was wrong than a broken exhaust valve. But he had stupidly come out without a spare one, and there was a fine car, which otherwise could have been set going in a very short time, exposed to the gaze, if not derision, of a London crowd while messengers were scouring in search of a spare valve—a longer process than usual because the incident had happened just after office hours, and when I left it was even problematical whether the valve would be obtained at all.

UNIVERSAL surprise has been expressed at General Buller's sweeping condemnation of the cycle for military purposes, but no one seems to have made a correct interpretation of the apparent enigma. Without for a moment agreeing with the general that a bicycle is "cumbrous"—a transparently ridiculous description of the lightest vehicle made—I venture to imagine that I have an inkling of what was in his mind when he proceeded to refer to what could be accomplished 'with a better means of transport.' Is it already forgotten that General Buller was driven about in Mr. J. R. Hargreaves's powerful car at the Aldershot manœuvres, and that the behaviour of this and other automobiles during the field operations greatly impressed the



Cliche de]

THE 1902 DE DION LIGHT CAR (see page 594).

[La Presse Automobile.

hand, see automobiles in the country, for the all-sufficient reason that the country is much less populous than the town. And even when a car is noticed on the high road, no one can know either how far it has come or how far it is going. As a striking case in point an instance is given by the *Country Life* man of a car having run over a hundred miles without a stop, and then momentarily failing near the Marble Arch, in the presence, of course, of great numbers of people, none of whom could have the faintest idea of what the horseless vehicle had actually done. The fact that no spectator can follow a motor-car throughout its progress is really one of great importance, and is materially detrimental to the spread of automobilism. Facts and figures as to actual everyday performances are what are required, and the more automobilists take the trouble to tabulate the performances of their cars and publish the results for the benefit of others, the quicker will be the conversion of the public at large.

SOMETIMES a bit of pure carelessness may give the public a wrong impression at a very unfortunate time and place. I saw one evening, for example, a big car stranded in Trafalgar Square,

military authorities? Why, then, may we not assume that, in General Buller's eyes, at all events, the motor-car has put the cycle's nose out of joint?

THE London Auto-Car Company, of 182, Gray's Inn Road, W.C., in issuing their large and well illustrated 1901-1902 catalogue have done the work thoroughly. Parts and accessories for motor-cars and cycles are the main feature. Motor-cycles complete, of which a large variety appear, will appeal to many, whilst castings for such machines will no doubt attract many makers, who should find during the winter months ample opportunity for putting the same together, and so constructing that complete machine for which there is every probability of a big demand next spring. Luggage carriers, toolbags, batteries, lamps, and a swarm of accessories, for both motor-cars and cycles, also receive their due share of attention, whilst the whole car, ready to take the road, occupies a conspicuous place. Motor traders should write for a copy of the new list, for which a charge of 6d., post-free, is made.

CORRESPONDENCE.



MOTOR-CAR ON FIRE.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I have read with interest the two replies to my letter. I am aware that some of the pioneer makers fit gravity feed, and am of the opinion that they were manufacturing on this principle previous to the introduction of pressure feed by Daimler, and, obtaining good results, they would naturally be reluctant to go to the cost of new patterns and experiments. Panhard, too, being generally looked upon as the leading manufacturer, having adopted it, others blindly followed.

I have it on good authority that one of the leading manufacturers in this country fit gravity feed because they get better results; but this need not be so, as the method of maintaining the pressure in pressure-fed cars has been at fault and not the pressure feed itself. I am still of opinion that the Napier car would not have been burnt up had it been pressure fed. Petrol vapour is heavier than air, and falls; this being the case, I cannot see how the driver discovered the leak by the smell. There seems to be doubt, however, that the body became saturated and the vapour was blown in contact with the side-lights. I have a number of cases in mind which would go to prove my arguments, but refrain from giving them in fear of encroaching on your valuable space.—Yours truly,

MAWDSLEY BROOKE.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I see your correspondents who are in favour of the gravity feed miss one point—the vapour of petrol is much heavier than air, and had the whole of the petrol that escaped got to the ground there would have been no fear of vapour rising to the lamps; the driver would not have detected the leakage by smell—as it was stated he did. The only thing likely to happen would be—as I have had happen to myself when all the petrol was lost on the road—the stoppage of the motor. One of your correspondents also mentions that all pipes and connections of some of the gravity-feed cars are below the floor; but the tank *must* be above. I once had a serious leak in a petrol tank owing to one of the rivets being loose. Another correspondent asks why it is, if pressure feed is safer, that such firms as Panhard and other well-known makers use gravity feed. Pressure feed was not invented when Daimler designed the Phenix motor. It was some stupid arrangement of the English Daimler Company, which discharged the overflow from the feed on to the foot-board and made the overflow pipe so small that, in the event of the float not acting, the overflow ran down close to the lamps, which caused some flares and won an evil reputation for the pressure feed. As Messrs. Panhard acquired such a deservedly good reputation, most makers followed them in using the gravity feed. For six years I have used the first pressure-feed Daimler motor imported into this country, and during that period have never had the least sign of a flare up; because, even as far back as six years ago, Daimler made his float and fixed his overflow in such a manner as to carry away any overflow to a place of safety. I feel quite convinced that pressure feed is much the safer. The difference in pressure is very little; and a joint that will not stand, say, from 2lbs. to 4lbs., is not safe at 1lb. In case of any indication of a leak it is always easy to let off the pressure, and one then knows that all pipes and connections are empty.—Yours truly,

E. ESTCOURT.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I have followed the correspondence re "Gravity and Pressure Feed" with interest. I have carefully thought this matter over and come to the conclusion that it is not so much a question of "pressure v. gravity" as "Where shall the petrol tank be placed?" in order to ensure the greatest amount of safety from fire in the event of anything occurring to the tank itself or

its immediate connections. I take the matter up on the point of safety only, as I think it is generally conceded that after the petrol has once reached the float the conditions are the same in the working of the motor, under either system.

I contend that in the case of the Panhard, Darracq, and other cars where the petrol tank is placed just behind the dash an absolutely wrong idea is carried out. In this system the only result of a leakage occurring near the bottom of the tank is the flooding of the flooring with petrol, which, if ignited, can only result in the destruction of the car. In other cars I could mention where the petrol tank is carried inside the body I think this is simply madness. As an illustration of the above I may say that the only car I had in my place last week with gravity feed (and made by one of the eminent firms named above) had the petrol tank placed in the usual position, just behind the dash, and whilst one of my men was giving it a final test on the road, after a thorough overhauling, the flange or union at the bottom of the tank gave way, the flooring was saturated with petrol, and almost before he could dismount it was in flames, and the car was totally destroyed.

Had the tank been fitted in a lower position, such as is usual in pressure-fed Daimlers, and a pipe or connection broken, what would have been the result? Simply a momentary flare up, as immediately the pressure is let off the supply must stop, owing to the tank being in a low position. For the past four or five years I have had as many as seven or eight pressure-fed Daimlers constantly running, and have never had anything more serious than a temporary blaze and a little paint blistering. Of course, the placing of the tank in a gravity-fed car in a lower position than usual entails the placing of the carburettor also lower, and other complications; but, I ask, what is to be done? This is a point which, in my opinion, is well worthy of the serious consideration of all, as it very frequently means all the difference between a slight blaze and total destruction of the car. I have left out the relative safety of tube or electric ignition and confined myself entirely to the question of the best position of the tank, so that in case of it, or its connections, giving way, the escaping petrol shall not fall in such a place as to mean total destruction in the event of its becoming ignited.—Yours faithfully,

FRANK MORRIS.

AERIAL NAVIGATION.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—As "Automan" has been good enough to express his respect for my opinions, I readily reciprocate by saying I feel all due respect for his. Moreover, I give him due credit for having detected the weak point in my comparison of the weights and power of birds with those of artificial flying machines, about which, however, there is this to be said. The bird may almost be regarded as a winged motor, or at any rate, if we deduct the weight of the external wings (but not their muscles, of course), the head and the legs, with their muscles, which together will not exceed forty per cent. of the bird's total weight, the mutilated remains—all conducive to flight—may fairly bear comparison with the motor (and all accessories) of an "aviator," or bird-like flying-machine. Now, most birds can carry an excess load equal to half their own weight, which must be taken into account and which more than compensates for the foregoing reduction. This obviously reduces their ratio of power, for a given weight, from that which is apparent when this factor is neglected—i.e., it effects a reduction of 33½ per cent. in the actual maximum power-ratio. This is what we really have to compete with in a flying-machine.

Careful experiments with the pigeon have shown that its power-ratio (with the surplus load) is only 1 h.p. per 60 lb., and even this is a much higher power-ratio than the large birds have, which depend more on "aspiration," or soaring phenomena, indicating clearly which of these systems we should adopt. I will now amend my figures from 7 lb. weight of motor and accessories per actual h.p. to 28 lb. total weight of "aviator" and freight per actual h.p., which is now practicable, and I still say we are far ahead of the birds in ratio of power for a given weight.

It has been well said that "the absence of intelligent

control in a working model aerial machine places it at a disadvantage compared with a larger machine carrying one or more passengers, and therefore the efficient action of models should be very encouraging." They certainly are practical results, although admittedly not on a large scale. The valuable experiments of Mr. Hargrave, with whom I am in regular correspondence, are beyond the model stage, and further advanced than "Automan" thinks. Dr. Lilienthal prosecuted his admirable and useful soaring flight experiments for about two years successfully before, unhappily, meeting his end; and then in consequence of a perilous new departure.

As to "Automan's" implied question, I can assure him that I intend to be taken seriously. "Automan" talks about my "misleading" the public (although unintentionally) in my enthusiasm. If that is so, how about the opinions—I may say the convictions—of some of the most eminent engineers of the age, with whose views and advocacy mine are identical? That remark of his is certainly not warranted. I hope that "Automan" will see that it is inconsistent with a respect for my opinions, and withdraw it.—Yours faithfully,

SIDNEY H. HOLLANDS.

REDUCING FRICTION ON MOTOR-CARS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I have read with much interest the remarks of your correspondent "Reducing Friction" in your last issue, and can endorse them with much pleasure. It may be of interest to your readers to know that experiments and tests of lubricating oils for motor work have been in progress at Ipswich for the last three years, with a view to determine the best oils for the work at a moderate price, viz., 3s. to 3s. 6d. per gallon; with the result that shortly, oils will be put on the market embodying all the good points as stated by your correspondent.

The oil for water-cooled engines has a flash point of 480 deg. F., and is a pure hydrocarbon of medium viscosity, the fire test of which is about 540 deg. F. For air-cooled engines, oils are being prepared having a flash point of 610 deg. F. and which maintain their lubricating properties when the combustion chamber attains a dull red heat. For gear cases, etc., a thick, heavy black oil is prepared at a cost of about 2s. per gallon which will fulfil all reasonable requirements.

I have tested these oils for flashing points, viscosity, etc., and found them free from all impurities and acids. I have also tried them on various types of cars, and have proved them to be splendid lubricants and free from all deposit. Arrangements are being rapidly made for placing the oils on the market; the proprietors hoping to be able to supply the public at large in a few weeks.—Yours faithfully,

J. STRUTT.

THE ABOLITION OF THE SPEED LIMIT.

TO THE EDITOR OF *The Motor-Car Journal*.

DEAR SIR,—It is, I think, an unarguable fact that we rather pride ourselves on living in an advanced stage of civilisation and progress, moreover priding ourselves on being always in the front rank as regards engineering and our machinery. Should this be, as I hope it is, admitted, why, then, when all the greatest engineering brains of our country are striving to further the advancement of their country and benefit its people by perfecting means of locomotion and traction by motor vehicles, should the dictators and representatives of the law be so narrow-minded as to endeavour to strenuously defeat the aims of its manufacturers, by imposing absurdly heavy fines on those who are broad-minded enough to demonstrate the capabilities and advantages of the automobile over horse traction?

If one, by law, may gain no time or advantage by automobiles, how is England to keep up in the race of other civilised countries whose legislation is the first to do all in its power to render help in the introduction of any progressive method of locomotion calculated to improve and accelerate transport? Where nowadays competition is so keen and time is money, surely our legislators cannot be so dense to the welfare of the country as to insist on the speed limit. I cannot personally see what the speed limit is for, otherwise than to protect the public from danger.

If this is the only argument, then let the law be framed that any automobilist causing injury to any person shall be fined, and there let it rest. I think the result would be very few fines, as, take the majority of men who drive motor-cars, they are men of steady, cool heads, well fitted for any sudden emergency, and are the last class in the world to cause injury wilfully. If there are those amongst them who habitually drive recklessly, it will be only a matter of time before they are either fined or killed. If the former, they will only have received their deserts; if the latter, they will not be greatly missed. No man would be more cordially hated amongst automobilists than a confirmed reckless driver.

Let the fine be a heavy one, sufficiently heavy to act as a deterrent to even a rich man. This, I fancy, would be a thoroughly satisfactory law, both as regards the safety of the public and the pleasure of the owner of a motor-car.—Yours truly,

RATE.

A FRENCH cycle manufacturer is said to have constructed a two-seated motor-tricycle which weighs less than sixty kilos., and which will cost from 800 to 900 francs.

ACCORDING to a Reuter's telegram, Fournier, accompanied by W. K. Vanderbilt, junior, broke all automobile track records from one to six miles on the 11th inst., covering the whole distance in 6min. 47sec. The time for the fastest mile was 66 4-5sec.

THE Milwaukee Automobile Company, of Milwaukee, U.S.A., inform us that all orders for Milwaukee steam cars for this country must come through their sole agents, Messrs. Shippey Bros., Ltd., King Street, London, E.C., to whom all English enquiries sent direct are referred.

WE learn that a firm of electrical engineers at Cork is about to start a public service of motor-cars between Middleton, near Cork, and Ballycotton, a seaside resort on the south coast of Ireland. There is no direct railway connection with Ballycotton, so that the new service should be a popular one. The distance between the two places is eleven miles.

THE United Motor Industries, Ltd., of 40, Holborn Viaduct, E.C., have sent us a sample of a new sparking plug which they are on the point of introducing to the English market, and which will be known as the U.M.I. cementless plug. The feature of the new plug is that there is not a particle of cement used in it, the packing being done entirely by asbestos, so that the common cause of a sparking plug giving out—namely, the cement in the porcelain blowing out—cannot possibly occur in this plug, there being no cement to blow out. It is a very strong plug, having good terminal points and giving a good spark; it is especially claimed to be suitable for the larger high-speed motors. It is sent out complete with washer and protecting wooden cap, and will retail at 5s. 6d. The United Motor Industries Company informs us that they have not adopted the plug without very careful testing.

HERR MAX CUDELL, whose name automobilists will remember in connection with the De Dion voiturette, for which he was the principal German buyer, has in hand a project to cross Europe and Asia in a motor-car. Dr. Lehweiss is associated with him in the scheme and proposes to be his companion. The idea is to leave Paris in a 20 h.p. Panhard car similar to the one in which the Baron von Zuylen accomplished the Paris-Berlin journey in the tourist section. Messrs. Lehweiss and Cudell propose to have sleeping accommodation and also food and a cooking stove in the car, and with the long wheel base of this car there will be plenty of room. They propose to travel *via* Berlin, Warsaw and Moscow, and to cross the Ural river, thence they will take the military roads *via* Irkutsk, to the Lake of Baikal, and from there run either through Mongolian or Russian territory to the Pacific Ocean. They affirm that from reports from the consuls they find that the roads are practicable. It is a daring scheme and will be watched by automobilists with much interest. There are two serious difficulties in the way—petrol and tires. Then again the car is a very heavy one, weighing quite two tons, and it will be very difficult to run it over sandy or muddy roads.

THE LILLIPUT MOTOR-BICYCLE.

It is not only in England that the motor-bicycle is receiving increasing attention. Even in Italy, where automobilism has made great strides during the past two years, motor-bicycles are springing up at a rapid rate. This week we are able to publish an illustration of an Italian-made machine—the Lilliput, built by Sig. Emanuel di A. Rosselli, of Via Nizza, Turin. As will be seen, the engine is of the single-cylinder air-cooled variety, the radiating ribs being larger than usual, and extending round the inlet and exhaust valve chambers. The battery is carried under the saddle, while the coil is supported from the top bar of the frame. The engine is clipped below the lower tube of the frame, somewhat closer to the bottom bracket than usual; the power of the engine is conveyed by a twisted strap to a light pulley on the rear-wheel. The motor is made in two sizes—1 h.p. and 2 h.p. respectively; the 1 h.p. engine will, it is claimed, drive the machine at a speed of twenty-two miles per

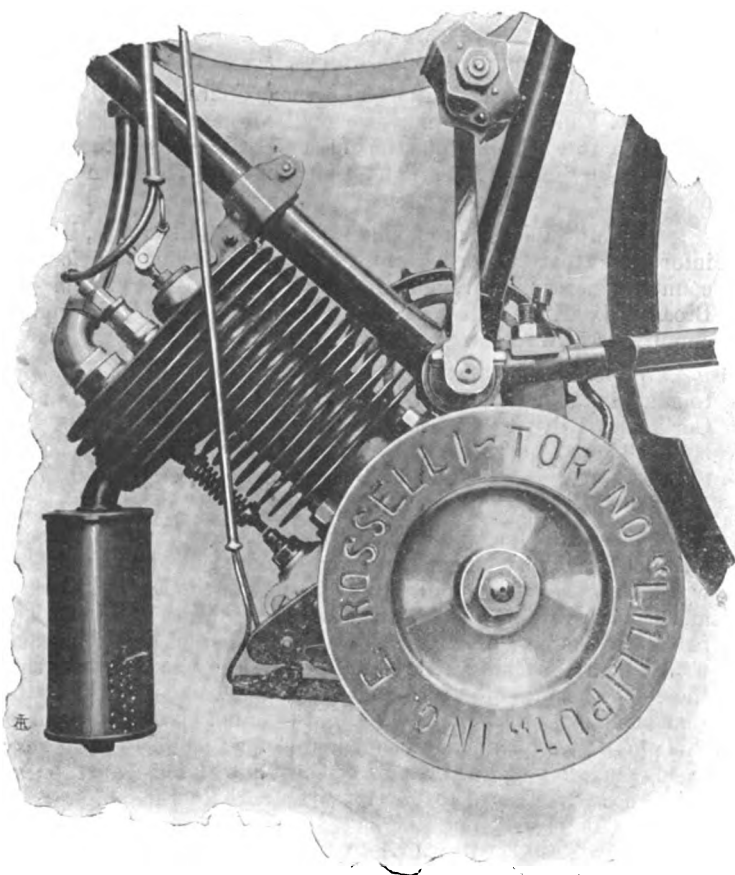


FIG. 1.—VIEW OF "LILLIPUT" MOTOR.

hour on good roads; while the 2 h.p. motor will give a speed of thirty-three miles. As to the capabilities of the Lilliput motor-bicycle, Signor Rosselli informs us that one of them successfully went through the recent 1,000 kilometre tour of Italy. The motor and its accessories are adapted to fit any roadster bicycle, and can be obtained separately.

MESSRS. FELL BROS., of Waltham Cross, Herts, inform us that they stock all motor accessories and undertake repairs of every description.

THE Humber Cycle Supply Company have acquired further premises in Cambridge, at 5½, Pembroke Street, which is on the main road to London. A competent repairer is in constant attendance, there is also an inspection pit and storage accommodation for a large number of cars; grease, petrol, oils, and spare parts can also be obtained. We may add that the Humber Cycle Supply Company are official repairers to Messrs. De Dion Bouton and the Motor Manufacturing Company.

CONTINENTAL NOTES.

BY "AUTOMAN."

ON the 17th November next the A.C.F. proposes to hold the usual hill-climbing trial on the Côte de Gaillon. There will be seven categories, including motor-bicycles up to 50 kilos, motor-cycles up to 250 kilos, quadricycles with two on board, voiturettes up to 400 kilos, light carriages up to 650 kilos, carriages weighing more than 650 kilos with two passengers, and carriages with four passengers. Petrol, steam, electricity, and combined motive power will be represented. Amongst the entries already to hand I notice the names of Reith, Osmont, Bardin and Cormier.

THE Nice races, organised by the A.C.N. and A.C.F., are advertised to take place on the 8th of April, 1902, over a course of 462 kilometres. It remains, however, to be seen whether the authorities will give the necessary sanction. The following competitions in speed contests are projected:—Series A—Vehicles of any description weighing less than 250 kilos. Series B—Vehicles carrying at least two passengers and weighing more than 250 kilos and less than 400. Series C—Vehicles weighing more than 400 kilos and less than 650 kilos, and carrying two passengers. Series D—Vehicles weighing more than 650 kilos, and carrying two passengers. There is also a tourist section, with the following sub-divisions:—The first three sub-divisions similar to those of the speed contest; the fourth sub-division, for cars weighing more than 650 kilos and less than 1,000 kilos, and carrying at least four passengers; the fifth series is for cars weighing more than 1,000 kilos, and carrying six passengers. There will be a kilometre race on the 11th of April along the Promenade des Anglais, and a mile race for the Rothschild Cup; on the 12th of April a race up the Nice-La Turbie Hill. Altogether the programme for the contest is most complete, and it is to be hoped that the authorities will give the necessary sanction.

THE Union Automobile, which was organised in France in opposition to the Automobile Club, and which brought out a manifesto against racing, has come to the end of its tether, and has issued another manifesto, which will be its last. The Committee, wishing to put an end to a misunderstanding which was the cause of injury to the trade, has decided to call the members together for the purpose of liquidating the Union, leaving the A.C.F. the sole recognised authority in France in automobile matters. All true lovers of the sport will be glad of this result, which is clearly in the best interests of the trade. The success which has attended the efforts of the A.C.F. in France should be a lesson to those on the other side of the Channel to uphold the authority of the A.C.G.B.I., and not to allow the show question or any trade rivalry to raise an opposition, which would only have the result of injuring the prospects of all concerned.

DECIDEDLY the motor of an automobile must be placed in front. One by one the makers are all coming to it. Peugeot has been the most stubborn to convince. This great firm, with enormous powers of production, has stuck to its own models with the motor behind, and has certainly sold large quantities of them. I am told, however, by one of their agents that at last they have been obliged to abandon this principle, and that in the near future all their cars will have motors in front.

THE nomenclature of automobilism seems to be a perplexing problem, and crops up in every country. In France there was a fight about the gender of "automobile," and most people made it masculine until the Academy decided that it must be feminine. In England "garage" seems to offend the susceptibilities of our northern friends, and now in Germany there is a prize competition for an automobile word. The prize has been accorded to a Berlin architect named Will, who proposed the word "aut" for the noun and "auten" for the verb. It may go down in German, but I tremble to think of the consequences if it should come into vogue in English—a moment's

reflection will convince the readers of the *Journal* what an endless series of puns would be the result.

THERE is already some talk of an automobile race from Paris to Vienna next year, and it seems that the Austrian Club has mooted the question to the A.C.F., which is inclined to receive it favourably; should the French authorities not sanction it, then the idea is to go to the legal limit as far as the frontier, and then full speed ahead to Vienna. The Baron von Zuylen, interviewed by *Le Velo*, is very strong on the subject, and says that a great annual event is essential and necessary for the trade. Whether such an event should take the form of a road race or not, there is no doubt that an annual competition is necessary from the point of view of the manufacturer as well as from that of the buyer. It is the only way the buyer can safely judge, and it is the only way the maker can get his goods officially tested.

M. SANTOS-DUMONT is gaining plenty of experience, and Parisians are becoming familiar with his flying machine. On Thursday last week he set out at 1.45 for Longchamps, and sailed round the course for an hour or more, and then adjourned in his

ON Monday M. Santos-Dumont was in the air again above the Longchamps race course. It was three o'clock when he set out, flying the red, white and blue flag at the stern of his air-ship. For an hour and a-half he continued his evolutions, which were gone through without any hitch and to his entire satisfaction, so much so that he again summoned the Committee for the Deutsch prize to assemble for an attempt at 2 p.m. on Tuesday to gain the £4,000. Punctually at the hour all the members had assembled. Everything was in readiness for a start when some drops of rain began to fall, so it was put off in the hope that the weather would soon clear. This it did after a time, and then the balloon was brought out of the shed. Presently the air-ship arose amid cries of encouragement, but the workmen never relaxed their hold of the ropes, and after throwing out some ballast M. Santos-Dumont descended. These tactics were repeated several times, and finally, as the atmosphere was too heavy for a serious attempt to double the Eiffel Tower, he decided on taking a turn in the direction of Longchamps. Another light shower, however, came on to spoil even this modest effort, so at last the balloon was placed back in its shed, and the company departed rather disappointed at the collapse of the programme. The aeronaut was himself distressed at the fiasco,



FIG. 2.—THE LILLIPUT MOTOR BICYCLE. (See opposite page.)

flying machine to the Restaurant de la Cascade, in front of which he alighted without the least difficulty. After having partaken of refreshments he sailed back to the grounds of the Aero Club, which he reached before his men had time to arrive there, and instead of waiting for them he sailed his flying machine unaided into its shed. On the following day he made two attempts to win the Deutsch prize, and was twice baulked by the breakdown of his steering gear. The day was fine and the air quite still, a fog hanging over the ground. The start was made at two o'clock, and almost immediately the light rod which supports the steering rope snapped. As a result the ship got out of control and fluttered down into a field, from whence it was taken back to its home. The steering gear was repaired, and a fresh start was made, but it went wrong again and the air-ship landed on the racecourse, where it was again repaired, and, rising easily, made a pretty flight back to the Aero Club.

ON Saturday there was a strong wind, so that it was not deemed advisable to attempt a free flight, but with the guide ropes held from the ground he flew backwards and forwards for the benefit of the photographers employed by the American Biograph Company. On Sunday a short captive ascent was made in the afternoon, but as the wind was still blowing strong it was wisely decided not to tempt providence.

as he was longing to repeat his attempt to win the prize, and is well aware that there is no time to waste.

A CROP of false automobile accidents are going the rounds of the French papers; first from one quarter and then from another arrive stories of women and children run over and killed, with circumstantial details of the minutest kind. The *Auto-Velo* is investigating them all, and is making some startling discoveries. The latest is a telegram from Lille stating that at Loos, at the corner of the Rue Merou, a woman and a child, named Bumez, had been run over and killed by a red car containing two men and a woman. On making enquiries the *Auto-Velo* has found that there had been no accident, that there was no Rue Merou and no woman named Bumez in the village of Loos.

THE Swiss Automobile Club held on Sunday last at Trelex-St. Cergues a 10 kilometres hill-climbing contest. The following were the winners in each section:—Motor-bicycles, C. Dufaux, 21 min. 20 sec.; Voiturettes (400 to 650 kilos), Brollet, 18 min. 19 2-5 sec.; Cars over 650 kilos, Barbey, 17 min. 10 sec.

THE GLASGOW RELIABILITY TRIALS.

JUDGES' REPORT AND AWARDS.

THE Judges' Committee of the Automobile Club of Great Britain and Ireland beg to recommend to the Council of the Glasgow International Exhibition that they should award medals as shown hereunder. The Judges' Committee, in arriving at their decisions, have relied not only on the numerical results of the Trial, as shown by the marks for reliability and hill-climbing, but have taken into consideration the following matters:—

- | | |
|---|---|
| (a) Price. | (m) Quality and sufficiency of speed gear. |
| (b) Weight. | (n) Easiness of adjustment. |
| (c) H.P., shown by performance. | (o) Steering gear. |
| (d) Persons carried, or load. | (p) Brakes and brake gear. |
| (e) Price in proportion to seating capacity occupied. | (q) Ignition arrangements and apparatus. |
| (f) Price in proportion to power of motor. | (r) General design, mechanically. |
| (g) Power in proportion to seats occupied. | (s) General design, appearance. |
| (h) Power in proportion to weight. | (t) Workmanship, especially of machinery. |
| (i) Mechanical efficiency as shown by Hill-climbing Trials. | (u) Condition of car at end of Trial. |
| (k) Simplicity of transmission. | (v) Breakages and defects not previously mentioned. |
| (l) Accessibility of mechanism. | |

The Judges' Committee attach to the Report an appendix in which are shown the marks gained by each vehicle for reliability and hill-climbing, and an analysis of the causes of stoppages on the road. As regards Class A, Section 1, the Judges' Committee found that a complete comparison could not be made between two types of vehicles so different as steam cars and cars driven by internal combustion engines. The disadvantages of the one system do not appear in the other, and one system has advantages which cannot be claimed by the other. For instance, the steam car is comparatively noiseless, vibrationless, and runs extremely smoothly. The internal combustion engine, however, is highly economical in fuel as compared with that of the steam engine using the same fuel. Vehicles driven by internal combustion engines can run long distances without the stops for water which at present are necessary in cars of the Locomobile type. The Judges' Committee, therefore, recommend that in Class A there should be awarded two gold medals, one for cars with internal combustion motors, and one for steam cars. Of these they recommend that one should go to car No. 9, the 5 h.p. Wolseley, and the other to car No. 20, the Locomobile steam car.

Of the other classes, the Judges recommend the award of medals as shown hereafter. A gold and silver medal were offered for pneumatic tires. A set of tires was entered by the Dunlop Pneumatic Tyre Company, and was run throughout the trial on a vehicle weighing, without its four passengers, 22 cwt. As is shown in the appendix, the tires behaved well. The treads of the tires were found to be in good condition at the end of the trial. On examination of the tires, however, and in consideration of the fact that the experience with tires made in this country for heavy motor-vehicles had been far from satisfactory, the Judges' Committee are not prepared at present to recommend the award of a medal in respect of these tires. The Judges' Committee suggest, however, that a certificate should be given to the Dunlop Pneumatic Tyre Company, stating the behaviour of the tires during the trial, and the condition of the treads at the finish. In view of the importance of encouraging makers who honestly strive to produce satisfactory tires, the Judges' Committee further recommend that the Dunlop Pneumatic Tyre Company should be given an opportunity of submitting a set of tires for a vehicle weighing over 21 cwt. for a prolonged trial of (say) 3,000 miles, the trial to be free of cost, except for the tires, to the Dunlop Company, and that should they, in the opinion of the Judges' Committee, be in a satisfactory condition at the end of this trial, the Council of the Glasgow International Exhibition should award a medal to the Dunlop Company.

The Judges' Committee desire to put on record their satisfaction with a system of trial which provides that the cars should be under continuous observation, inasmuch as the results are

eminently more satisfactory than can be the case in trials in which no record is kept of the duration and cause of stoppage on the road, and repairs.

AWARDS.

SECTION I.—(Cars entered by Manufacturers or Agents.)

Class A.—Cars declared at a selling price of £250 or less:—Gold Medal—Car No. 9, 5 h.p. Wolseley, entered by the Wolseley Tool and Motor-Car Co. Gold Medal—Car No. 20, Locomobile Steam Car, entered by the Locomobile Co. of America. Silver Medal—Car No. 16, 7 h.p. New Orleans, entered by the New Orleans Motor Co., Ltd. Silver Medal—Car No. 30, 4½ h.p. De Dion Voiturette, entered by the De Dion Bouton, Ltd.

Class B.—Cars declared at a selling price of more than £250 and not more than £350:—Silver Medal—Car No. 2, M. M. Co.'s 6 h.p. 2-cylinder light Carriage, entered by the Motor Manufacturing Co., Ltd.

Class C.—Cars declared at a selling price of more than £350, but not more than £500:—Gold Medal—Car No. 10, 10 h.p. Wolseley, entered by the Wolseley Tool and Motor-Car Co. Silver Medal—Car No. 3, M. M. Co.'s 6-seated car, entered by the Motor Manufacturing Co., Ltd.

Class D.—Cars declared at a selling price of more than £500:—Gold Medal—Car No. 14, 16 h.p. Milnes C.P.C., entered by George F. Milnes and Co., Ltd. Silver Medal—Car No. 13, 10 h.p. Mors, entered by the Roadway Autocar Co., Limited. Silver Medal—Car No. 23, 9 h.p. Napier, entered by the Motor Power Co., Ltd.

Class F.—Delivery Vans:—Gold Medal—Car No. 4, M. M. Co.'s 1-ton van, 6 h.p., entered by the Motor Manufacturing Co.

SECTION III.—Parts of motor vehicles entered by their manufacturers or by their authorised agents.

Class B.—Tires:—Diploma of performance and condition of the tires at the finish of the trial, and the opportunity for a more extended trial, with a view to the award of a medal. P 1, Set of tires affixed to 12 h.p. car, weighing 22 cwt. and carrying four passengers. Entered by the Dunlop Pneumatic Tyre Company.

Class G.—Ignition Apparatus:—Gold Medal.—No. P 4, Simms-Bosch Magneto-Electric Ignition and Interruptor-Timing Gear. Entered by the Simms Manufacturing Company, Limited, 55A, Southwark Park Road.

J. H. A. MACDONALD,	DUGALD CLERK,	} Judges' Committee.
W. WORBY BEAUMONT,	BRYAN DONKIN,	
D. S. CAPPER,	H. S. HELESHAW,	
	H. C. L. HOLDEN,	

Automobile Club, 4, Whitehall Court,
October 8th, 1901.

A LIGHT car fitted with a four-cylinder motor of 14 h.p. has just been put on the market by Messrs. Cottereau, of Dijon.

MESSRS. JAMES GRACE AND COMPANY, of Christchurch, New Zealand, write us that they are open to take up the agency for one or two reliable types of motor-cars.

THE *Morning Leader* remarks that motorists, it appears, are unable to agree among themselves as to the most suitable word with which to describe the "stable" of a motor-car. "Motor shed," "motable," "motor den," "motor barn," "motorium," have been suggested, but none seem to meet with satisfaction. "Why not call it 'The motory'?" asks our contemporary.

WE learn that Mr. J. H. Adams has been appointed sales manager of the business of the Motor Traction Company, Ltd., of Walnut Tree Walk, S.E. We understand that this company has secured the agency for this country for the "F. N." vehicles of the Fabrique Nationale d'Armes of Herstal, Belgium, and of the Daimler Motoren Gesellschaft of Cannstatt. A new light car with 9 h.p. engine, the first turned out at the Cannstatt works, is expected over at an early date.

HERE AND THERE.



THE membership list of the Automobile Club now comprises a total of 1,038 names.

A NUMBER of improvements are being introduced in the 1902 patterns of the Minerva bicycle motor set.

A NEW light car, fitted with 8 h.p. De Dion, is, we hear, about to be put on the market by Messrs. Renault Frères, of Billancourt, Paris.

GEN. THE RIGHT HON. SIR REDVERS BULLER, V.C., G.C.B., K.C.M.G., and Mr. Winston Churchill, M.P., have notified their willingness to serve on the General Council of the Automobile Club.

THE manager of the Acetylene Stores, 92, Charing Cross Road, London, W.C., asks us to mention that they keep a large stock of the prepared (French) carbide of calcium which is used in the Bleriot motor lamps.

THE County Councils of Cheshire and Denbighshire are being urged in the local press to take action against the speedy motorists who are said to be delighted with the excellent condition of the road between Chester and Wrexham.

AT a meeting of the Automobile Mutual Protection Association, Limited, held at 88, Chancery Lane, London, on the 9th inst., Mr. J. S. Crichtley, of Donnington House, Norfolk Street, Strand, was elected a member of the Executive Committee.

ONE of the first acts of Mr. Roger W. Wallace, K.C., Chairman of the Automobile Club, on the publication of the awards in the Glasgow Reliability Trials, was to send congratulatory telegrams to the recipients of the medals.

AT a meeting of the Dublin County Council last week, the secretary was directed to write to the Commissioner of Police, calling his attention to the fact that the regulations with regard to speed of the Local Government Board were being violated.

THE annual dinner of the Automobile Club will be held at the Whitehall Rooms, Hotel Métropole, on Thursday, November 14th. It is hoped that members will, if practicable, attend the dinner and introduce to it as their guests friends who are likely to become automobilists.

THE Earl of Ilchester and his son, Lord Stavordale, were riding in a motor-car, near Abbotsbury, on Wednesday, when the vehicle overturned and its occupants were thrown out. Lord Stavordale had an arm and some fingers badly injured, but Lord Ilchester escaped with nothing more serious than a shaking.

WE are informed that the Electric Ignition Company, of Highgate Square, Birmingham, have made arrangements in the wholesale selling agency of their E.I.C. sparking plugs for the United States of America, with Mr. J. W. Jackman, of Victoria Street, London. We understand that they are open to negotiate for the selling agency of their plugs in France, Belgium, and Germany, in which countries the company hold patents.

ON this page we give an illustration of the electric parcel delivery cart which has lately been put on the market by Messrs. Shippey Bros., Limited. The vehicles are made in two sizes, to suit all trades—one to carry loads up to two cwt., and a larger one for loads up to three cwt. On one charge of the batteries they are able to cover a distance, on ordinary roads, of from 25 to 30 miles.

SPEAKING at the shareholders' meeting of the Rover Cycle Co., Limited, at Coventry last week, Mr. J. K. Starley, the managing director, said that, with regard to the question of the company undertaking motor-car making, he had already made a car for himself, and found the work was so intricate that he had come to the conclusion that it would not be wise to combine it with cycle manufacture. He did not think there was at present in existence a motor-car out of which anyone could make a profit, and the changes in construction—mostly relating to the wish for greater and greater speed—were so rapid that much work was rendered useless.

A MEMBER of the Automobile Club having inquired as to the Customs' proceedings in Holland and on the German frontier

in connection with a motor-car, communications on the subject were addressed to the British Consuls at the Hague and at Cologne, and the following information obtained:—
“When an automobile is imported into Germany duty has to be paid on it, which will be refunded when the car leaves that country again; and for the purpose of identifying the car, leads are put on it. In Holland permission must be obtained from the Minister of Waterstaat, Handelen, Ny verheid, at the Hague, which will probably necessitate a visit to the place before commencing the journey.”

AT the last meeting of the East Riding Standing Joint Committee the Chairman referred to an allusion made by the

Chief Constable to the necessity of legislation to facilitate the identification of motor drivers. They all knew that there had been many complaints made as to the excessive speed at which motor-cars had been driven in the Riding. He did not think that the Committee would do anything to cripple what he thought was a very thriving industry in this country. He meant the motor-car, with all its possible developments. He believed they would see the day when a service of motor-cars would be found to be more economical and just as efficient as the light railways, of which they had heard so much.

WE have received from Messrs. John Marston, Limited, of Wolverhampton, a pamphlet descriptive of the “Mabley” car, a detailed account of which we published recently. The main feature of the car is its shape, which is of that curious, but comfortable and convenient piece of furniture found in many drawing-rooms and known as a “cosy corner.” The advantage of such an arrangement is, of course, that the width of the car is much reduced, whilst driver and passenger partially face each other. A 2½ h.p. water-cooled engine is used, speeded from four to twenty miles an hour and the approximate weight of the complete car is 4½ cwt.



THE SHIPPEY ELECTRIC PARCEL DELIVERY CART.

MESSRS. ROBINSON AND PRICE, Limited, of Liverpool, are about to put a new motor-bicycle on the market.

SUTTON BRIDGE, on the road from King's Lynn to Spalding, is at last to be freed, the county authorities having now decided to provide the money necessary to abolish the tolls.

ONE day last week Mr. Thomas Shaw, of Dundee, who is local agent for the Wolseley motor-car, had the pleasure of giving the Lord-Advocate, Mr. Graham Murray, a drive on a vehicle of that make.

WE understand that the Central Motor Company, of 46a, Tottenham Street, Tottenham Court Road, W., are now in a position to let out motor-bicycles and tricycles on hire, either by the day, week, or month.

AMONG the larger vehicles recently turned out from the works of the Daimler Motor Company, Ltd., are a fifteen passenger char-a-bancs, with 18 h.p. motor, and a 12 h.p. van for Messrs. Hugh Stevens and Sons, of Manchester.

THE Bucks Standing Joint Committee has decided to place the police stations in the county in telephonic communication. It was urged by some members that this would enable the police to deal with drivers of motor-cars who rushed about the county at a terrific speed.

AN alteration in the route followed by Eastbourne buses has robbed the inhabitants of Upperton of their direct communication with the sea front and one of the principal thoroughfares of the town. As a result an agitation is now on foot to replace the withdrawn service with motor-cars, which it is believed would be extensively supported.

MESSRS. JOY AND COMPANY, Stoney Stanton Road, Coventry, have now taken up the manufacture of all kinds of sheet metal work, such as carburettors, petrol and water tanks, battery and lamp boxes, etc. For a considerable time they have confined themselves to the manufacture of carburettors only, but have now made arrangements to extend their business.

ONE of King Edward's 12 h.p. Daimler cars has been in the workshops of Mr. Frank Morriss, of King's Lynn, for the past few weeks undergoing a thorough overhauling of engines and gear. After passing its final test, it has now returned to Sandringham in readiness for His Majesty's use early next month. It reflects great credit upon Mr. Morriss, and his staff, that they are able to satisfactorily serve His Majesty, practically on the spot, in such important work.

AT the last meeting of the St. Albans Rural District Council the Mayor drew attention to the furious driving of motor-cars in the streets. The violent driving was shocking and dangerous in the extreme. He hoped the Rural District Council would do all they could to see that motor-cars shall not go through their villages at such high rates of speed. The Chairman endorsed the sentiments expressed by the Mayor, but it was pointed out that the Council had no jurisdiction.

AT the last meeting of the Club Committee of the A.C.G.B.I. a letter was submitted from Colonel FitzGeorge recommending the establishment of a school for motor drivers. The Standing Committee recommended that Col. FitzGeorge should be informed that the Committee have already had the suggestion under consideration, but that, owing to many important matters which they have had on hand, they have not been able to deal with, but hoped to do so as soon as an opportunity is afforded.

A NEW motor-bicycle is about to be put on the market by Messrs. Fell Brothers, of Waltham Cross, Herts. The motor, which is of $1\frac{1}{2}$ actual horse power, is placed inside the frame, near the head, of the machine. The power is conveyed to the rear wheel by a belt, a jockey pulley being fitted on the main down tube. The petrol tank has a capacity sufficient for a run of 100 miles, and any speed from five to thirty-five miles per hour can be attained. For the frame they are using heavy gauge tubing, the fork stem, fork sides, and crown being specially constructed and heavily reinforced.

THE AUTOMOBILE CLUB'S QUARTERLY 100-MILE TRIAL.

THE quarterly 100-mile trial of the Automobile Club was held on Tuesday, the 1st instant. The usual route was followed, viz., from the second milestone from the Marble Arch, via Ealing, Uxbridge, Beaconsfield, High Wycombe, and Stokenchurch to the fifty-second milestone (outskirts of Oxford), and back. Total, 100 miles. The roads were greasy for the first eight miles, very loose at the foot of Astor Hill, but otherwise very good. The weather was fine with a light wind. The hills on which hill-climbing trials took place were:—(a) The steep portion of Dashwood Hill, commencing at 33rd milestone and ending at danger board at the top—1,180 yards, having an average ascent of 1 in 16.0 and including 352 yards of 1 in 10.9; (b) One mile including Dashwood Hill, commencing at the 33rd milestone and terminating at the 34th milestone, having a total rise of 241 feet in 1 mile, including 275 yards of a gradient of 1 in 27.7 and 600 yards of a gradient of 1 in 11; (c) Aston Hill on the return journey; distance 1 mile 1,100 yards, having a total rise of 316 feet and including 1,910 yards of a gradient of 1 in 21.

Only three vehicles took part in the trials as follows:—

A Simms four-seated voiturette (the Simms Manufacturing Company, Limited, Bermondsey) fitted with 6 h.p. Simms single-cylinder petrol motor, water-cooled, having Simms-Bosch magneto ignition and timing gear. The complete weight, with four passengers, was 15 cwt. 3 qrs. The following are the results as given by the observers:—Quantity of petroleum spirit used on the journey, 4 gallons 1 pint; quantity of water used on journey, practically nil; speed, up to the legal limit of twelve miles per hour; number and cause of stoppages, no stops. Hill-climbing speeds:—(a) The steep portion of Dashwood Hill:—Took four passengers up all the way. Time to Danger board, 4 mins. 33 secs. = 8.8 miles per hour. (b) One Mile including Dashwood Hill:—Took four passengers up all the way. Time for the mile, 5 mins. 31 secs. = 10.8 miles per hour. (c) Aston Hill:—Took four passengers up all the way. Time, 9 mins. 9 secs. = 10.6 miles per hour.

A four-seated Teras (Gobron-Brillié) car (W. T. & S. E. Botwood, Ipswich), fitted with 14 h.p. "Gobron-Brillié" water-cooled, two-cylinder motor with electric ignition. Weight, with four passengers, 23 cwt. 1 qr.; quantity of petroleum spirit used on the journey, 8 gallons 2 quarts 1 pint—(Petrol pipe leading from tank to carburettor was broken before the start and was leaking badly throughout; the water pump was also leaking slightly throughout.)—quantity of water used on journey, 2 quarts; speed, up to the legal limit of twelve miles per hour; number and cause of stoppages, one, for 15 secs., owing to the driver missing the change of speed on running on to a patch of loose stones in the dark. Hill-climbing speeds:—(a) The steep portion of Dashwood Hill:—Took four persons up all the way. Time to Danger board, 3 mins. 29 secs. = 11.5 miles per hour. (b) One Mile including Dashwood Hill:—Took four persons up all the way. Speed up to the legal limit of twelve miles per hour. (c) Aston Hill:—Took four passengers up all the way. Time, 8 mins. 55 secs. = 10.9 miles per hour. General remarks:—The start was delayed owing to defective porcelain sparking plug, and owing to the end of the exhaust box being blown out on starting the engine.

A four-seated C.P.C. car (George F. Milnes & Co., Limited), fitted with 16 h.p. Daimler, water-cooled, four-cylinder motor with Simms-Bosch magneto ignition and timing gear; weight, with four passengers, 29 cwt.; quantity of petroleum spirit used on the journey, 6 gallons; quantity of water used on the journey, 3.15 quarts; speed, up to the legal limit of twelve miles per hour; number and cause of stoppages, no stops. Hill-climbing speeds:—(a) The steep portion of Dashwood Hill:—Took four passengers up all the way. Time to Danger board, 3 mins. 45 secs. = 10.7 miles per hour. (b) One Mile including Dashwood Hill:—Took four passengers up all the way. Speed up to the legal limit of twelve miles per hour. (c) Aston Hill:—Took four passengers up all the way. Speed up to the legal limit of twelve miles per hour.

ACTION FOR DAMAGES.

AT the Bungay County Court, Robert Murton, farmer, of Carlton Colville, near Lowestoft, sued the Hon. John Mulholland, of Worlingham Hall, Beccles, for the sum of £19 in respect of damage done to his horse and cart by reason of the alleged negligent and furious driving of a motor-car, defendant's property. The horse and cart were passing over a narrow bridge across the Waveney at Oulton Broad, when the defendant, who was in a motor-car with two ladies and a little girl, being unable to pass the other vehicle, sounded a horn twice. Plaintiff's horse was frightened broke away from the driver, and collided with the gateway of the Wherry Hotel, upsetting the cart and injuring the horse. For the plaintiff it was contended that the speed of the motor-car was excessive, that the blowing of the horn was an unreasonable act, and that the defendant did not use proper care and caution in the circumstances. Mr. Staplee Firth, who appeared for the defendant, subjected witnesses to a searching cross-examination and denied defendant's liability. Without calling upon the defence, Judge Eardley Wilmot gave judgment in favour of the defendant, remarking that motor-cars were now recognised by the Legislature and had as much right to the use of the highway as any other vehicle. Horses had to get used to them. It was quite clear that the horse was frightened by the warning of the horn, but sounding the horn was exactly what the law said drivers of motor-cars must do and he failed to see any evidence of negligence. The judgment carried costs for the defendant.

OVERLOADING.

At Bournemouth, George M. Dorey, a motor-car driver, pleaded not guilty to overloading his motor-car on the 17th August. Mr. James Druitt, jun., appeared to prosecute on behalf of the Bournemouth Corporation. Patrick Byrne, Hackney Carriage Inspector to the Corporation, said the car, which was the property of the Bournemouth Motors, Limited, was licensed to carry eight persons in addition to the driver. On the night in question, shortly before half-past ten, he saw the car in the square, and it then contained twelve passengers, three being on the box seat, where only two should have been, two standing on the step of the car behind, and seven in the car itself, which only had seating accommodation for six. The defendant said he remembered nothing about it, but he dared say that the people behind were the two inspectors and the engineer. The Bench fined the defendant 13s. and 7s. costs.

FUTURE AUTOMOBILE TRIALS.

A MEETING of manufacturers and sellers of electrical motor vehicles will be held at the Automobile Club on Wednesday, November 20th, at 5 p.m., to discuss details of a proposed trial of motor vehicles. Probably shortly afterwards manufacturers and sellers of the lighter class of motor vehicle, propelled by other power than electricity, will be called upon to consider what, if any, trial similar to the 1,000 Miles Trial of 1900 and the Glasgow Trial of 1901 should be held in 1902. No schemes have yet been discussed. It appears that the expense of the trial might be reduced if the daily runs were made longer, and if the trial were to consist of, say, six runs of about 120 to 160 miles per day, having London as a centre, thus:—

	Miles.
Monday.—London, Oxford (54 m.), Gloucester (102 m.), Worcester (128 m.), Birmingham ..	153½
Tuesday.—Birmingham, Stratford-on-Avon, Oxford (61½ m.), Buckingham, Bedford (112½ m.), London ..	163½
Wednesday.—London, Huntingdon, Peterboro' to Lincoln ..	134
Thursday.—Lincoln, Peterboro' (52 m.); Huntingdon (75 m.), Cambridge (90 m.), London ..	142½
Friday.—London, Kettering, Melton Mowbray, Nottingham ..	125
Saturday.—Nottingham, Leicester, Northampton, London ..	124
	842½

By this means, three starts would be made from London, and three finishes would be made in London, thus stimulating the interest of the London Press and people. The other three nights would be spent in the centres of the Midland, Lincoln, and Nottingham Automobile Clubs, where there is an ever-increasing number of people adopting automobilism.

A suggestion has been made that as soon as the trade find time to give to the important subject of motor delivery vans for loads of a ton or under, the Automobile Club should organise a really serious trial of such vans by enlisting the sympathy of the big firms in London, such as the Railway Companies, Whiteley, Barker, Maple, Swan and Edgar, etc., and inducing them to offer handsome prizes for the best delivery van, and to test the vans submitted for trial by running them in actual work under Club observation for, say, three months or more, and thus to ascertain the cost per mile, and particularly how far the vehicles suffer from wear and tear. If traders can once be convinced that a reliable, economical delivery van is obtainable, there can be no doubt but that orders for such vans will be forthcoming by the hundred. Probably the wishes of the automobile trade in this matter will be ascertained by a conference at the Automobile Club.—*Automobile Club Notes.*

FURIOUS DRIVING CASES.

At Settle Petty Sessions, Fred. W. Thomas, of Halifax, was summoned for driving a motor-car above the legal limit of twelve miles an hour. Police-sergeant Topham said that on the 1st ult. he was on duty with Police-constable Matson in plain clothes in the township of Long Preston for the purpose of timing the speed of motor-cars. Defendant came along in the direction of Settle, and witness in conjunction timed him over a measured mile. He did the mile in three minutes—that is, at the rate of twenty miles an hour. Defendant said he did not know he was exceeding the legal limit. If he was, he did it unintentionally. A fine of £2 and costs was imposed.

At the same court, Henry Gardner, of London, was fined £2 and costs for a similar offence on Sunday, the 8th ult. Police-constable Matson and Police-sergeant Topham said defendant did the mile in 2 mins. 55 secs.

At Bristol, Edward Rickham was summoned for riding a motor-bicycle at a furious rate in Park Row on 29th September. The police evidence was to the effect that the bicycle was travelling at the rate of about sixteen miles an hour. The defendant said he did not know he was going so fast. He was fined 10s. and costs.

At Retford County Police Court, Amédée Lestrade, employed by Captain J. F. Laycock, of Wiseton Hall, appeared to answer a summons charging him with driving a motor-car at a greater speed than twelve miles an hour, between Everton and Wiseton, on Sunday, the 29th ult. Mr. A. P. Williamson prosecuted, and Mr. R. A. H. Tovey, Doncaster, appeared for defendant. Dr. W. J. Johnson, of Bawtry, deposed to driving with his groom from Drakeholes to Everton on the Sunday in question

about mid-day. On mounting the hill he met a motor-car being driven from ten to twelve miles an hour. This he considered a reasonable speed. The next thing he saw was a cloud of dust, and another car coming at a much faster rate, and making a noise. His groom drove to the side of the hedge. Witness had just time to press his hat on his head and catch hold of the side of the carriage as the car passed. The speed of the second car, he should judge, was between thirty five and forty miles an hour. When it had passed him he turned round, but it was almost out of sight. The distance of three-quarters of a mile was covered under the minute. Cross-examined by Mr. Tovey, witness said he was a fairly good judge of speed. He had driven a horse and trap for thirty years, and generally travelled from eight to ten miles an hour. Mr. Tovey, in his speech for the defence, said that Captain Laycock wished it to be understood that if defendant was guilty, he did not wish to get him out of a scrape, but he (the captain) was not responsible for his drivers, so that if the Bench should fine defendant they would bear in mind that they were not fining Captain Laycock. The defendant stated that he was driving a motor-car from Bawtry Station on the day in question. He started from Bawtry at eight miles an hour. The first car was in front of him. He saw a gentleman's trap and a load of straw. The first motor-car stopped on the left side of the road soon after he had passed the trap. He slackened up as he passed the doctor's trap, and was travelling at from seven to eight miles per hour. He could not go at thirty-five miles the hour if he wished. Cross-examined by Mr. Williamson, defendant said he had been in England about three months. Captain Laycock had told him not to travel too fast, and therefore he did not do so. The captain had never complained of his driving. At Doncaster, when he was said to have stated that he rode fifteen and a half miles an hour, kilometres were mistaken for miles. The Chairman, after a few minutes' deliberation, said the Bench had considered the case carefully, and imposed a penalty of £10, including costs.

At the Hythe County Sessions, Percy Morgan, of Folkestone, was fined £1 and 12s. costs for exceeding twelve miles an hour with a motor-car, on September 8th, at Newington. Defendant declared that his car only had two speeds—one seventeen miles an hour and one ten miles, and that he was travelling at the latter. The magistrates, however, accepted the evidence of Police-sergeant Stevens and Police-constable Honey, who asserted that 440 yards were traversed in fifty seconds, giving a rate of eighteen miles an hour.

At Norwich Shirehall, John Reginald Hargreaves, Cawston, was summoned for driving a motor-car at a greater speed than twelve miles an hour at Horstead, on 25th September. Mr. E. Reeve represented defendant, who was unable to attend. The first witness called was Sir Edward Birkbeck, who stated that on the day in question, about half-past four in the afternoon, while he was in a field about 200 yards from the road leading from Horstead to Buxton, he heard a motor-car coming from the direction of Buxton and going towards Horstead. It was travelling at a great pace. There was a lady by the side of the driver, and no one else in it, as far as he could observe. The witness continued: "About three-quarters of an hour after I was standing at a gate with Sir W. Dyke, M.P., and Mr. G. Daniels, farmer, of Buxton, when I heard the horn of a motor-car coming from the direction of Horstead village. It would be, I should say, 200 yards to 250 yards off when the horn was sounded. It dashed past close to where we were standing, but I could not see the motor-car more than four yards from the direction it was coming on account of a very high fence and the road being curved at the place in question. It appeared to me to be the same car I had seen before, and was going at a very great pace, certainly over twenty miles an hour. Other witnesses having sworn to seeing the car in question travelling at twenty miles an hour on the same date, Mr. Reeve, for the defence, said he apprehended the Bench must convict, for it was perfectly clear that Mr. Hargreaves was driving more than twelve miles an hour. But he hoped the Bench would judge the case by its surroundings—there was no reckless driving on the part of Mr. Hargreaves, he had the motor-car under perfect control, the road was a broad one, and there was very little traffic about. The Bench would not, he was sure, deal with what might have happened, as Sir Edward's conjectural evidence suggested, but with the facts of the case. No one was hurt, no one was annoyed by what had happened. The Chairman, after a brief consultation with his fellow-magistrates said the Bench were agreed that Mr. Hargreaves was driving beyond the limits of pace laid down by law. In fact, they quite believed he was travelling at twenty miles an hour, but it was not over a part of the road which was much frequented, and they therefore thought a fine of £5 would be sufficient to check him. They hoped that would be the last time he would have to answer a summons of this sort. He would also have to pay the costs, 16s. 6d., or in default, seven days.

At Leeds, Percy Cradock, of Wakefield, was charged with furiously driving a motor-car. Defendant did not appear, and was not represented. Police-sergeant Vaughan's evidence was to the effect that on a recent Sunday afternoon defendant and a lady passed through Garforth on a motor-car at a rate which he estimated at from twenty to twenty-five miles an hour. The defendant did not sound any alarm nor slacken speed when passing a conveyance on the road. The Chairman remarked that "magistrates up and down the country are doing their best to stop this, and we shall do the same." The full penalty of £10 and costs was imposed.

At Ramsgate County Police Court, Laurence Hubert Greig, of Kingston-on-Thames, was fined £5 and costs for driving a motor-car at an excessive rate. Police-constable Ashby saw defendant approaching from the Prospect Inn, Minster, towards Sarre, and he covered a distance of two miles in four and a half minutes. Inspector Stanford stated that numerous complaints had been received in regard to the high speed motor-

cars travelled along the roads, and in giving the decision of the magistrates the Chairman expressed a hope that this fine would be a warning to drivers to moderate their speed.

At the Petty Sessional Division of Penge, Arthur Wood, of Streatham Hill, was summoned for driving a motor-car at a greater speed than twelve miles an hour. It appeared that while he was travelling along the Thickett Road, and just as he passed the end of Lullington Road, a mounted policeman called to him to stop. He pulled up, and the constable informed him that he had been driving at sixteen miles an hour. Witness stated that when he accused the defendant of going sixteen miles an hour, he said, "I was not going sixteen, I was going fourteen. I am very sorry," and that he apologised. This Mr. Wood absolutely denied, and said that the charge was a fabrication from beginning to end. The officer was put through a searching cross-examination by Mr. Staplee Firth, who defended, and he admitted that the rate of speed was simply an opinion, but that he was satisfied he was right, because he knew the speed at which he had to gallop his horse to overtake the car. He was then tackled as to the speed of his galloping horse, and again admitted that it was an opinion, whereupon Mr. Firth set up for the defence that the opinion of a policeman as to speed was inadmissible, and that the magistrates could not take cognisance of it. The Chairman of the Bench, however, said that they should treat the policeman as an expert witness, and should certainly take cognisance of his opinion, upon which Mr. Firth protested that they had no power to do so, as it was establishing an absolutely wrong principle. The magistrates conferred with the Clerk, who evidently advised them that they were making a mistake, and they dismissed the case on the ground that the evidence of the policeman was unsatisfactory.

At Reigate Police Court, Mr. Wotton, of Thornton Heath, was summoned for driving his motor-car through Merstham on September 29th at a speed over twelve miles an hour. The police stated that defendant was going twenty-three miles an hour—a declaration at which he seemed astonished. The Bench wanted prompt evidence to justify this implied contradiction of the police; but there was a difficulty. The only person whom Mr. Wotton could call was his mechanic, who was a Russian unable to speak a word of English. Fined £2 and costs.

For travelling on the same day and at the same place at the rate of thirty miles an hour, Mr. Turner, of Cavendish Square, London, was also brought before the Reigate Court. Mr. Henry Strakosch, solicitor, who appeared for the defendant, said the motor-car was not of sufficient power to attain that speed. Fined £5 and costs.

In the next case, called at the same Court, the motorist had given the policeman who stopped him a card purporting to bear his name and address. A summons was accordingly issued against Mr. Cheesright, of Queen Victoria Street, for driving his car furiously through Horley on September 20th; but, although Mr. Cheesright is guilty of keeping two motor-cars, both of which were out of order, upon the date mentioned he was at the time on his way to Canada. It appeared that the car did not pull up when ordered to do so, and a constable thereupon ran after it and boarded it while still in motion. He was then given a card bearing Mr. Cheesright's name. Mrs. Cheesright, who attended with her son, produced a telegram and letters showing that her husband could not possibly have been one of the six occupants, of whom, to use the policeman's expression, "four were in the car and two in front of it." The case was dismissed.

ANOTHER gentleman appeared to answer a charge of driving his motor-car at Merstham about eighteen miles an hour, on September 29th. Defendant said he certainly did not know he was travelling at a dangerous pace, or he would not have gone so fast, for there was a person with him in the car who was dearer to him than anyone else in the world. The Bench was not in a mood to appreciate the sentiment, and imposed the usual fine of £2 and costs.

A SUMMONS was also issued against Mr. H. Halford, of Kensington, for driving his car too rapidly near Horley. Mr. Halford admitted the charge, but was very indignant at being classed with the scorchers. "Did we," he asked the inspector who gave evidence, "look like the scorchers? Had we goggles on?" The Constable: No, I can't say you had. His Worship: That is not to the point. £2 and costs.

At Portsmouth, Charles Parker, of Chelsea, London, was fined in all £3 7s., including costs, at Portsmouth for furiously driving a motor-car along Clarence Parade, Southsea. Mr. Thomas Cousins, one of the borough magistrates, said the car passed his house at quite twenty miles an hour. Some tram horses were frightened, one being seriously injured in falling.

MR. MOFFAT FORD, Managing Director of the Motor Car Company, Limited, 168, Shaftesbury Avenue, appeared before the Reigate Bench on Saturday last to answer a summons for driving a motor-car at a greater speed than twelve miles an hour at Merstham, on the Brighton road, on September 28th. The summons was for eleven o'clock in the morning, and the case not having been called on by 1.30 when the Court declared its intention to adjourn for lunch, Mr. Ford rose to protest against being summoned for the morning instead of the afternoon. The Chairman, however, cut short Mr. Ford's remarks by saying that he was only wasting the lunch time, and that he had better go and get some lunch. The case, however, was not called until four o'clock, when, on appearing at the table, Mr. Moffat Ford protested against being summoned for eleven o'clock when there was such a large number of cases to be dealt with which could easily have been divided into morning and afternoon batches. The Chairman of the Bench: "If you think you have come here to teach us, you are making a great mistake." Defendant: "I have not come here for the purpose; that is purely incidental. I shall be quite satisfied if the Press will make a note of my protest." The information was then read, and an

inspector went into the witness-box, and commenced reading from some notes on a paper he was holding. Defendant questioned this procedure. Witness then laid the paper down on the desk, but he was afterwards distinctly observed to glance again at the paper on the desk below him. Defendant (heatedly to the Bench): "Witness is still referring to notes made since the occurrence."—The Chairman of the Bench: "Behave yourself. The case will be put back and not heard till last." Mr. Moffat Ford (sharply, and sitting down): "Oh!" (Loud laughter.) After all the summonses had been heard Mr. Ford's case was again called, and, upon stepping forward, he once more protested against being kept from eleven o'clock in the morning until five o'clock in the evening doing nothing. The information was then read, and the inspector gave evidence to the effect that on the day in question he and another police officer were on the Brighton road dressed in plain clothes, and saw the defendant driving his car at twenty-four miles an hour. He had five uniformed policemen stationed out of sight about 100 yards away. As the defendant passed him on his car, he blew his whistle, and the uniformed policemen then showed themselves and stopped defendant's car. Mr. Moffat Ford: "How do you know I was travelling at twenty-four miles an hour?" Witness: "Because you travelled over a measured distance of 176 yards in sixteen seconds, and that works 'hout' at between twenty-three and twenty-four miles an hour." Defendant: "Who measured the ground?" Witness: "I didn't. My brother officer did." Defendant: "What did he measure it with?" Witness: "A tape." Defendant (addressing the Bench): "Then I claim on a point of law that you are not in a position to give judgment against me upon the evidence before you, because neither the measure nor the watch have been produced." The witness then handed the watch to Mr. Ford, but before doing so, looked at it, put it up to his ear and then shook it. Here the Chairman remarked to defendant, "You are not doing yourself a bit of good, you know." Defendant: "I don't suppose I am, but I am fighting this case to the best of my ability, and I intend to continue doing so." After further discussion the Chairman of the Bench said: "You will pay a fine of £5, or go to prison for a month." Mr. Moffat Ford: "I will do neither. I appeal on a point of law." Chairman: "Of course you can appeal if you like." Defendant: "I know that. That's why I have done it."

Reported above are 16 prosecutions for furious driving. In 2 cases the summonses were dismissed, while in 14 cases fines amounting to a total of £54 10s. without costs were inflicted.

TO CORRESPONDENTS.

All communications intended for insertion in this Journal or relating to Editorial matters should be addressed to THE EDITORIAL DEPARTMENT, MOTOR-CAR JOURNAL, 39 and 40, Shoe Lane, London, E.C., and must be written on one side of the paper only. Letters must in all cases be accompanied by the name and address of the writer, as no notice will be taken of anonymous communications.

The Editors cannot undertake to return MSS. or drawings, although every effort will be made to do so in the case of rejected communications. Where such are regarded as of value, correspondents are requested to retain copies.

The Editors do not hold themselves responsible for the opinions expressed by their correspondents, or for statements and facts which do not appear in the editorial columns.

The Editors and publishers beg also to state that they will accept no responsibility for unsolicited contributions, even if used, unless payment for same is directly specified in forwarding, and the terms arranged before publication.

To insure insertion communications and contributions must be in the Editor's hands by Wednesday forenoon of the week in which the same are intended to appear. Disappointment may be caused by non-compliance with this rule, and to avoid this earlier receipt, if possible, is necessary.

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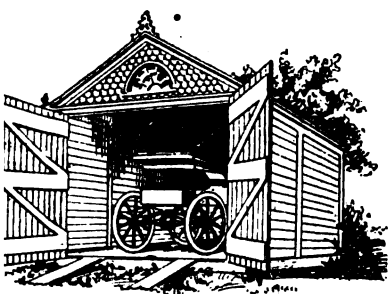
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COMMENTS.



THE Automobile Club Committee have decided that on the occasion of the run to Southsea the vehicles taking part in the run shall be identified by names instead of by numbers. Those who enter for the run will be supplied by the Club with cards bearing the names selected for the vehicles, and these cards must be attached, one to the front and one to the back of the car during the run. The names may be selected by the owners of the cars. They must not, however, consist of more than ten letters. Owners who have entered vehicles are requested to communicate to the Secretary as soon as possible the name selected for their car. In order to assist owners in selecting names, the Committee call attention to the list of Greek and Latin names which appears in Nuttall's and other dictionaries, but reserve to themselves the right to refuse a name selected by an owner. The Committee of the Automobile Club have also decided that the entrance fees for the anniversary run shall be as follows, the choice of whether their vehicles be entered for a non-stop certificate or not resting with the owners:—(a) Entrance fee for non-stop certificate, including storage for one vehicle for two nights at Southsea (November 16th and 17th), and identification cards, 10s. per vehicle. (b) Entrance fee, including storage at Southsea and cards of identification (but not non-stop certificate), 5s. per vehicle. (c) Entrance fee, including cards of identification (but not non-stop certificate nor storage at Southsea), 2s. 6d. per vehicle. We may add that all motorists, whether members of the Club or not, are invited to take part in the run, and that entries are already being received at a satisfactory rate.

Lessons from the Glasgow Trials.

THE enormously-increased value given to automobile competitions when they are carried out under a rigid system of observation is well brought out by the judges' report of the Glasgow trials. There may have been room for criticism of minor details of arrangement, and it is almost impossible that such events should be carried out so as to satisfy all competitors; but it is not too much to say that the mass of facts presented in the report before us is of a scientific value never before attained in the annals of automobilism. The difficulties in the way of ensuring a careful and accurate record of the behaviour of competing vehicles are obvious, while the fact that a mere point-to-point race is far more to the taste of most drivers does not increase the cordiality of their co-operation; but the utility of the results amply justifies the labour of obtaining them, and suggests the desirability of further and more purely scientific

tests of motor mechanism being undertaken in a similar manner. In this country, unfortunately, manufacturers are seldom alive to the value of research, as not immediately and certainly productive, and such work has usually to be looked for from the laboratories of public educational centres, whose facilities for it are at best limited, and by no means able to make up for the lack of industrial interest as shown in more progressive communities.

Some Comparative Figures.

TURNING to the details of the report, they will, of course, appeal to the majority of readers as factors to assist them in the choice of next year's car, though—with the new recruits at least—the question of "smartest turn-out" will probably be accorded an entirely undue prominence. Entirely apart, however, from the point of view of individual merit, the figures obtained by the cars may be considered as data from which some instructive averages can be drawn, so far as is possible having regard to their somewhat limited number. It will be seen, then, that in the course of 500 miles run by thirty-seven vehicles, giving a possible mileage of 18,500, a total loss of time of 26 hrs. 23 min. was due to more or less easily reparable accidents. Assuming an eighteen-mile average, this corresponds to about one-forty-fourth of the running time, or a minute and a half for repairs in every hour. In addition to this, though, there were nine mishaps serious enough to necessitate withdrawal from the runs, three being due to piston failure, three to gear fracture, and one each to broken crank, carburettor, and ignition. The behaviour of the "steamers" is not here included, their conditions being somewhat different. Of the total loss of time, *pannes* excluded, pump troubles account for 528 minutes, or 33·35 per cent.; ignition comes next, with 23·75 per cent.; brakes, 6·63 per cent.; carburettor ailments, 4·99 per cent.; lubrication, 2·59 per cent.; and miscellaneous repairs make up the remaining 28·69 per cent. No account is here taken of stops merely to fill up or start engine.

Points for Attention.

IT is noticeable that while the amateur drivers had more than their share of carburettor troubles, and quite their allowance of those due to water circulation, they were singularly happy with their ignition, eight cars only losing eleven minutes from this cause, while twenty-nine of their professional brethren lost 365 minutes by it, which may fairly be attributed, at least partially, to electrical knowledge being scarcer with the latter, as well as to the fact that many otherwise good cars are flimsy in their electrical arrangements, a point worth the makers' attention, being so easily obviated. Regarding pumps, the figures are suggestive enough without comment, and should be appreciated by designers. The stoppages from broken gears deserve more than casual consideration, it being probable that the enormous strain on the bevel gear of a live axle has hardly received sufficient attention or allowance for the increase therein due to its position when chains are abolished. Taken on

the whole, however, the results are a most satisfactory proof of the reliability of the modern car, run under the severest conditions as regards attention permitted, though favourable as to weather.

Poor Reigate.

POLICE zeal against motorists is but sorry sport for the hotel-proprietors and tradesmen of Reigate and other Surrey towns in which the persecution of motorists has been carried to excess. Since the recent great motor day in the local court, hundreds of motorists who were wont to frequent that road have gone to "pastures new," and the loss must amount to a few hundred pounds every week to such a town as Reigate. Motorists are profitable to innkeepers, and anything that sends them in other directions cannot be welcomed by tradespeople—as the Surrey police will find out if they continue their persecuting tactics much longer.



THE RT. HON. SIR J. H. A. MACDONALD ON THE "GOOD GIRL"

The Speed Limit.

WE are pleased to find the dailies coming round to our way of thinking as regards the speed limit. The *Daily Telegraph* the other day remarked: "Are not the Reigate magistrates wasting a lot of time over the furious driving cases of cyclists and motorists? Surely the best plan would be when sending the summons to mark on it the amount of the fine—there would be no difficulty about this, the scale seems to be fixed—and add: 'Your prompt remittance will oblige.' This would save time and trouble to the cyclists and motorists, and would also prevent the magistrates from being exposed to the horror of hearing the expert accuracy of the police put in question. It must not be thought for a moment, however, that we advocate the removing of all restrictions. Quite the contrary. Admittedly there is a great deal of reckless and inconsiderate cycling and motoring, which we would gladly see stopped. But make the question of "endangering" someone the touchstone, and apply the rule equally to riders and drivers of horses, cyclists, and motorists. Those who ride or drive fast round corners or past cross-roads, who cut it fine in passing one another or persons crossing the road; who stop or turn off to the right or left without signalling their intention to those behind; who will not allow the pedestrian room for peaceful walking, but prefer to scrape by his elbow—these we would gladly see fined. Let us have those who endanger the public punished according to their demerits, but let us have no more of the farce of measured miles on country roads, where no one is about but the trap-setting police."

Somerset and the Speed Limit.

OUR advocacy of the abolition of the speed limit with regard to motor-vehicles has found support in many unexpected places, and we are glad to see that, on the motion of the Marquis of Bath, the Somerset County Council has approved of the idea. Everyone must recognise that a speed which would be dangerous in a crowded thoroughfare would be safe and reasonable in a deserted country lane. In connection with the debate at the Somerset County Council Mr. H. Carver organised a little motor-car demonstration which impressed the people of Wells and influenced many Councillors. Unfortunately the County Councillors showed themselves in favour of numbering motor-vehicles, but the important point of the discussion was that all agreed it was practically useless to impose a speed limit. Mr. Thring said there were about 10,000 motor-cars in England, and in speaking against the numbering proposal Mr. Neville Grenville, who said he had been thousands of miles on motor-cars, pointed out that a number could soon become obliterated with mud and dust. If County Councillors would content themselves with the abolition of the speed limit and the infliction of penalties if life is endangered they would be acting more wisely than in attempting to number cars.

The Speed of Motor-Cars.

AT a meeting of the Executive Council of the County Councils Association, at the Westminster Guildhall, on Wednesday, Mr. W. W. B. Hutton brought up a resolution declaring that the existing law, if scrupulously observed and rigorously enforced, is sufficient to secure public safety, "provided that every driver should be required to obtain and carry a license of competency to drive a motor-car, and that each motor-car have fixed to it some identifying number." Mr. Hutton also proposed a resolution in favour of caution boards being fixed at dangerous places on roads requiring drivers of all vehicles to drive slowly. On the motion of Lord Northbrook, it was agreed that both resolutions should be printed and circulated at next meeting.

Automobiles and the Late U.S. President.

LITTLE more than passing notice was accorded to the part played by the automobile at the time of the assassination of President McKinley. Now that the popular feeling with regard to that sad event has somewhat abated, it may be of interest to recall that the President was carried to the hospital at the Buffalo Exhibition on a motor-ambulance; several motor-vehicles were sent in hot haste for the best surgeons in the city; on an automobile Dr. Rixey went to tell Mrs. McKinley of the occurrence; the nurses arrived on motor-cars, and finally the President was borne to the house of Mr. Milburn on the motor-ambulance. Without any delay or hesitation everyone seemed to turn to motor-vehicles as the most reliable and speedy conveyances available, and they certainly proved their capacity without a single mishap.

At Worthing.

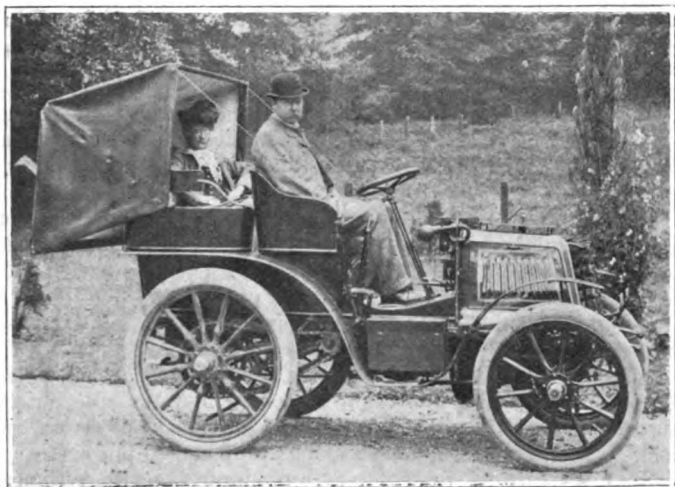
A NUMBER of prominent motorists have lately been staying at Worthing, and we hear that it is the intention of Mr. A. F. Warne, a local hotel proprietor, who is also a member of the Automobile Club, to entertain the members of that institution to dinner in a short time. "The larger number of the cars" lately seen in the town, says the local paper, "were by Panhard-Leverson, and they have a running capacity of from twenty to eighty miles an hour." How earnestly do the representatives of provincial journals strive to become learned with regard to motor matters. Panhard Leverson, Esq., motor-car maker, is almost as novel as the "Damecar" car about which Yorkshire people were informed during the 1,000-mile Trial, or the "Lowcoalmobile" on which a cockney journalist once waxed eloquent while passing rapidly over the London streets.

"Freedom" in the Press.

REALLY we are surprised at the apparent neglect of some editors to adequately revise their correspondence columns. Evidently some letters are only admitted to newspaper publicity because of their extreme tone, or why is such a sentence as the following allowed to appear:—"Motor-cars are an unmitigated nuisance, and likely to cause many deaths and fearful accidents. Twice I have had to seek shelter in a lane off the main road, and several ladies dare not drive out for fear of meeting them." Such absurdities are admitted in the columns of respectable journals, and we really wonder where some editors draw the line.

The Friend of the Horse.

A WRITER in the *New Liberal Review* says "It is quite certain that the motor-car will not oust the horse any more than the bicycle has." Of course it won't. Ousting horses is not the function of the automobile. But it will reduce their burdens, and by taking up heavy loads lessen the cases of cruelty that are too frequent in some districts—especially hilly localities, where one or two horses are often required to struggle up elevations that should be encountered by teams of three or four animals. The motor-car is becoming the horse's best friend.



Highways and Locomotives Amendment Act of 1878. The question rests on article one. The definition of "light locomotive" states that the expression "light locomotive" means a vehicle propelled by mechanical power, etc., and is so constructed that no smoke or visible vapour is emitted therefrom, except for any temporary or accidental cause. The case was heard at Kingston, on Thursday, when Mr. Staplee Firth, on behalf of the Motor Union, appeared for defendant, and we learn by telegraph that all three charges were dismissed. The J.P. proved to be Mr. Thomas Weeding Weeding, the Clerk to the Surrey County Council, who publicly announced in court that he had been instructed by the County Council to lay the information and prosecute.

A Solution of the Dust Problem.

AMONG the many motorists who have suffered from the dust nuisance, and who are devoting their energies to the question of obviating the same, is Mr. E. C. F. James, of Knockdrin Castle, Mullingar, Ireland, who has sent us the accompanying illustrations of the cowl-hood he has patented, and fitted to his 8 h.p. Panhard tonneau car. Mr. James writes:—"It is the first I made, and is only a rough pattern. It acts like a cowl, creating a draught of air, which entirely prevents the dust coming into the car. When it rains it can be



THE DUST NUISANCE.—THE JAMES COWL HOOD IN AND OUT OF USE.

An Important Case.

MR. ARTHUR SHARP, of Byfleet, was driving a Locomobile at Walton, when a person, who happened to be a J.P., followed on a bicycle, and shouted out to him, "What's wrong with your condenser." Mr. Sharp rather resented this interference by a person whom he did not know and told him to mind his own business. This angered the J.P., who followed the motorist for some distance and told him that if he knew his name and address he would summons him. On this Mr. Sharp handed his card to the J.P., with the result that the latter caused to be issued three summonses, one charging Mr. Sharp with being a person in charge of a locomotive passing on a highway who failed to employ two persons in driving or attending to such locomotive; another summons charged Mr. Sharp that he, being the driver of the locomotive, did drive the same along a certain highway there situate (meaning Walton) at a greater speed than four miles an hour. The charge in the third summons was that he, being the person in charge of a locomotive, did use the same in a highway within the administrative county of Surrey, such locomotive not being licensed according to the statute. The first and second summonses were taken out under the Locomotives Act of 1865, which deals with traction engines and so forth. The third summons was taken out under the

reversed, or if not wanted can be folded or removed. It can be made to suit any kind of car, and what I claim for it is that it is a simple, cheap, and effective way of preventing dust coming into a motor-car. It may be contended that the device catches the wind; this, of course, is true to the extent that it catches the wind less the amount two people catch; which is, however, very small." We understand that Mr. James is open to arrange with some firm for the placing of the device on the market.

Favoured Motorists.

NOT often does the law favour motorists, but they appear to have exceptional treatment so far as Sunday traffic is concerned. A deputation of Bournemouth ministers recently waited upon the Town Council of that delightful town to oppose the running of omnibuses and motor-cars on the Sabbath. The mayor having heard their views said the corporation had done what they could to stop omnibus traffic, but counsel's opinion was against them. At the same sitting of the Council a recommendation of the Horse Committee compelling the drivers of omnibuses to walk the horses when passing churches on Sunday was adopted. In the course of the discussion the question was asked what was the walking pace of a motor-bus, and it was explained that the Town Council Clauses Act—

under which the recommendation was made—only applied to vehicles drawn by horses, so that motor-vehicles could not be restrained from going their own steady pace outside ecclesiastical buildings on the Sabbath day.

Motor Delivery Vans.

DESPITE the contradiction of the rumour as to the amalgamation of the two largest carrying firms of the Metropolis, "for the present," we believe the combination will shortly take place, and that the introduction of motor-cars into the carrying trade of London will be a strong point in the appeal to the public which will be made by the amalgamated concerns on their transformation into a limited liability company.

Up Ben Nevis on a Motor-Bicycle.

AN attempt was made last week to ride from Fort William to the summit of Ben Nevis on a motor-bicycle by Mr. Grierson, of Coventry. On reaching the halfway house, Dudley—an elevation of about 2,000 feet—the attempt was abandoned owing to punctured tires. We understand that Mr. Grierson will make another attempt to reach the highest point in the British Isles.



M. TESTE ON HIS PANHARD RACER TRAVELLING AT 47 MILES AN HOUR.

L'Avenir de

[L'Automobile.

France since the Racing.

VERY remarkable has been the condition of things in France since racing has been a prohibited sport. Motorists seem to have been at a loss for a subject of conversation, and the current excitement has been maintained by alcohol trials and aërial navigation. There has been a breathing time in France, and not having been bothered with racing excitements makers have been able to look to their business and perfect their machines in many minor details.

Reaction in Manchester.

It is rather surprising that so enlightened a body as the Watch Committee of the Manchester City Council should pay heed to the intolerant suggestions of prejudiced horse owners. Such, however, seems to be the case. The Watch Committee are seeking Parliamentary powers to regulate the traffic at the street crossings in the city and to prescribe the maximum speed at which vehicles may be driven. The final clause of the Committee's proposals reads as follows:—"To prescribe and regulate the several routes to be followed, and the particular streets or portions of streets to be used by all or any

carts, waggons, lorries, vans, or other heavy and slow-going vehicles of any description, and for preventing unreasonable obstruction in such streets in any case where the same may be thronged or liable to be obstructed by reason of the amount or nature of the traffic." On the suggestion of the representatives of the Horse Owners' Association it has been decided to insert the following after the words "slow-going vehicles of any description":—"Worked by any power other than by horses, or drawn by more than one chain horse in front of a shaft horse between the hours of nine in the morning and seven in the evening." We hope the local automobilists will watch the action of the City Council in the matter.

A Notable Conversion.

THE conversion of Alderman Haywood, the vice-chairman of the Herefordshire County Council, to automobilism is a significant victory for our movement. He has been a decided opponent; but latterly he has had actual demonstration of the reliability of motor-cars and has confessed the errors of his earlier attitude. Mr. Haywood is a noted agriculturist, the largest estate agent in the county, and an all-round sportsman. The other day he appeared at a great pedigree cattle sale at the Court House, Pembridge, having driven thither on a motor-car which belonged to his nephew—Mr. Hodges, of London. Mr. Haywood has been much struck with the civil behaviour of horses in the presence of the motor-car, and his testimony should prove of much service in directing public opinion in his county in a right direction.

A Public Service for Birmingham.

WE learn that there is every probability of Birmingham being provided with a motor-car service at an early date. Mr. A. H. Rooksby and Mr. Louis Cox, of Birmingham, acting on behalf of an influential syndicate, have applied to the Watch Committee for authority to place on certain specified experimental routes a service of cars. The powers at present requested are confined to the portion of Hagley Road between the Fountain and Five Ways, and a route connecting Edgbaston directly with Moseley, *via* Calthorpe Road. This idea of connecting the suburbs is a valuable part of the scheme, because it will, if achieved, bring within a twenty minutes' ride outlying portions of the city which are, by ordinary means of access, more than an hour apart. As a start, it is proposed to put six cars on the indicated routes, and to give a ten minutes' service, with penny stages. A special early-morning service for workmen is in contemplation. The cars are to be Daimlers of the latest pattern, to carry fourteen to sixteen passengers. The trial trips which have been run with one of these cars during the last few days have vindicated the most sanguine expectations.

FOR the 1902 season the Peugeot Company announce two new light cars—one fitted with 6 h.p. motor, and the other with 5 h.p. engine. The latter is to be put on the market at a popular price.

SPEAKING at the shareholders' meeting of Rudge-Whitworth on Monday last, Mr. C. V. Pugh stated that the directors had carefully considered the advisability of manufacturing motors, and had come to the conclusion that no cycle firm could combine satisfactorily in the same works the manufacture of motors.

MESSRS. J. BLAKE and Co., carriage builders, Beaumont Street, Liverpool, who are at present supplying bodies for several motor-cars, inform us that they keep a stock of Pratt's motor spirit, and have excellent accommodation for storing motor-vehicles, cars belonging to members of the Automobile Club being stored free of charge.

THE Motor Power Company, Limited, inform us that they are now undertaking repairs to all types of cars at the Napier Works, Vine Street, Waterloo, S.E. A special garage has been acquired close to the works, so that the cars shall be kept free from harm and away from the workshop until they are absolutely required there. Owing to it being possible to draw men from the works into the repair shop when a special job is required, they are able to deal with repairing, when necessity arises, expeditiously.

A WINTER RUN IN 1900.

(Continued from page 598.)

WE had been troubled more than once the day before with our tires, and the first thing to be done was to put in a new tube. This and the necessary oiling and watering were quickly done, and we set off. For the first few miles the road was blocked at frequent intervals by trees fallen across it, which obliged us to go upon the grass at the side. The storm, though it was felt more or less all over Europe, seemed to have been particularly violent in this district. We had had some little difficulty in starting the engine, and now she did not go at all well. The idea was that it was the wind, which blew upon the off-side, driving the flames of the burners away from the tubes; so we hung a coat over the bonnet. It was not much better. Then we thought that it could only be the carburation, and tried every possible variety of mixture. Still the explosions were feeble. Before long, however, we came, at a point where we could not see it ahead, upon one of those channels I spoke of, and bumping over it at a fair speed, the explosions immediately became perfect in force and regularity.

in, pump up, or, if possible, get someone else to; run ten kilos, and repeat the process.

We did not get far in this style, as may be imagined. We had struck the Loire at Briare, and we followed it up stream as far as Nevers, passing Cosne and La Charité, the latter a place of much importance in the mediæval religious world—"the elder Daughter of Cluny," and mother of a multitude of other abbeys. Nevers is a spot of great natural beauty in point of situation, for it lies not far from the confluence of the Allier with the Loire, in the midst of an extensive and fertile plain, upon a terrace which enjoys the full Southern sun. It was a town of consideration in Cæsar's day, and is so still. There are several big metal works, and one of these (belonging to the State) supplied the whole of the iron for the fleet in the American War of Independence. Le Creusot, the home of the formidable weapon of that name, lies only a little distance to the east. Nevers is well known, too, among collectors of pottery, a tiny piece of the genuine ancient faience the size of a small mustard-pot costing as much as seven or eight napoleons. We continued to head up the Allier, on a road gradually rising, of course, to Moulins, where is the tomb of the last of the French branch of the ancient family of Montmorency.



MR. D. M. WEIGEL AND MR. CLIFTON ROBINSON, JUN., ON A 24 H.P. PANHARD.

Hence the difficulty had probably been connected with the feed of petrol. I may mention that we were using heated air, and did so till, I think, the middle of the next day, when we found, as we got south, that the cold did better. The wind continued extremely strong, and would have made driving unpleasant had not one been prepared for it, with a close-fitting cap. But even at the worst of times, in the rain and blast, there was always the fascination of listening to the unvarying pulsation of the motor, and in feeling with what tremendous disregard the car was urged on in the teeth of nature's opposition. With a really big motor this is impressive. On an ocean steamer one may enjoy somewhat the same sensation, but then the whole affair is so huge that the vital organs of it are hardly within one's perception, nor of course the control of it in one's own hands. However, there is a weak spot in most of our arrangements wherein nature will have the best of us. And here it was our tires—our tires again. Down they went, now on this side, now on that. We patched and mended valves and put in new air chambers the whole day long. It became at length a regular mode of progress—"bump, bump, bump"; halt—a tire flat; cigarettes; get the cover off and a sound tube

and where Lawrence Sterne met with an adventure familiar to readers of "The Sentimental Journey." During the day matters had come to a fearful pass in regard to tires. We had used all our tubes and could not make our patches hold. We were in desperation, when it struck one of us that we were no very great distance from Clermont, and that by taking the night train we could at once replenish our stock both of air chambers and envelopes, and also tell M. Michelin how very excellent his goods had proved themselves to be! So we ran into Moulins as cautiously as possible on our last remaining fit-out, and the *mécanicien* went off to see what could be done. In the morning our toilet was interrupted by the coughing of a motor which sounded strange, and yet strangely familiar. We rushed to the windows of our respective rooms, and what was it but an English Daimler?—Frenchified, it is true, with pneumatics, worm-steering, radiator, etc., but still an English Daimler. I do not know why a Daimler makes one sound and a Panhard another, though the construction is so much alike; but probably everyone has noticed it. After coffee we got the car thoroughly cleaned down, and filled up ready to start, so as to save as much time as

possible. It was not far short of midday when our messenger arrived from Clermont with several new inner tubes and a pair of covers, and had them on the wheels. Then we had a substantial meal, saying to ourselves in the vanity of hope, "We shall not have any more bother now; we will go on solidly for six hours."

We continued along the river as far as La Palisse, and then, instead of keeping to it to Vichy, bore away to the eastward. The road soon began to ascend. The scenery was far grander than any we had passed through before. The formation is volcanic. The secretary of the A.C.F. had most obligingly given advice as to our best route, and somewhere hereabouts we were to leave the main road in order to avoid a long bit of *pavé*, and take a new by-road which would join the other farther on. We succeeded in finding it after many enquiries, and, though better than cobbles, it was not much to boast of. The gradients were not always easy and the surface was soft and stony. But it was wonderful how the car made light of it. It seemed hardly to notice whether the ground were rising or flat, and often we had to put her, for the sake of our own comfort, on a lower speed than she would take. Then we fell again to the river level at Roanne, a prospering town of much modern development; and at this point we left the route of the Gordon-Bennett Cup (Paris-Lyons) which we had been following till now. St. Etienne was our next objective, about fifty miles on, but we did not reach it till after dark, as the new tires were little better than the old ones. One tube which was properly put in burst with a loud report before four kilogrammes of pressure had been pumped in. The rubber of it appeared to be rotten. Our progress became a series of wild dashes and delays. There were splendid straight lengths of perfect road, and we were doing kilomètre after kilomètre well under the minute. It was simply grand, sitting down tight and holding on every now and then where there was a turn or piece of rough, to hear the music of the fourth speed rising in pitch higher and higher, to feel the air rushing past one's face, and see the earth and trees, and the milestones too, skimming away behind. Never a slack, never a swerve. This is the next thing to flying. It may not be luxurious; it may not be even exactly comfortable; superior persons may make fun of it as the scorchers' method of seeing the country; but, by Jove, it is thrilling, it is intoxicating. . . . But it is too good to last: "Easy; get out the jack—look alive; in with a new tube."

ARUNDELL WHATTON.

(To be continued.)

MR. J. H. KNIGHT is to read a paper on "Two Years' Motor-car Progress," at the Camera club, Charing Cross Road, W.C., on Thursday, the 31st inst.

THE municipal authorities of Madrid have sanctioned a public service of automobiles between the capital and its suburbs. The company which is to run them also proposes to start similar services in other Spanish cities. It is stated that the choice of the vehicle to be employed rests between one supplied by an English and one supplied by a German firm.

THE New Hudson Cycle Company, Limited, Birmingham, are one of the latest firms to take up the manufacture of the motor-bicycle. They have adopted the "Minerva" system of motor, and from what we saw at their works the other day, are apparently intending to make a strong feature of this type of machine next season. A speciality of this firm is the supply of bicycles for Post Office and Government service, and they have decided on a modification of the G.P.O. bicycle, so as to include the adaptation of a "Minerva" motor.

A PLEASANT and interesting event took place on Friday last week at the Duke's Head Hotel, Lynn, when Mr. Frank Morris gave the first annual dinner to his staff. Mr. Morris referred to the rapid progress the motor trade was making. As to its rapid strides in Norfolk and Cambridgeshire alone, he had only to look round the room to see that his staff had more than trebled since last year. He hoped there would be a still larger number next year. There was no possible doubt as to the future of the industry, which he believed in the course of time would equal, if not exceed, that of any other.

CONTINENTAL NOTES.

By "AUTOMAN."

THE Spanish Minister of Agriculture has decided that motor-cars must be subjected to an examination at the hands of experts appointed for that purpose, and that certificates of efficiency must be obtained by all who wish to drive them. The fee for having a car examined is 30 pesetas, and 15 pesetas are charged for the driver's certificate. The decree says nothing about foreign automobiles or their drivers.

ELECTROMOBILISTS will be interested in learning that a new record has been established in long distance travelling by electric car without recharging the accumulators. To Mr. Krieger, the well-known manufacturer, belongs the credit of covering over 192 miles with one charge of electricity, a feat he accomplished one day last week, when he drove a machine of his own construction from Paris nearly to Châtellerault. The previous best record was 163 miles, made some time ago by M. Garcin.

THE great Continental event for 1902 is occupying motorists' attention on both sides of the Channel, and all kinds of rumours are about. It was thought at one time that the German authorities had put their veto on road racing, but this is not the case. The A.C.F. therefore wishes it to be understood that races organised by the German Club are likely to be sanctioned by the Government of the Kaiser. We may, therefore, still have another Paris-Berlin race, for, after all, it is really a question of proper arrangements and good organisation.

IN the meantime Paris-Vienna is the order of the day, and the A.C.F. at their meeting of the 16th inst. had before them a long letter from the Austrian Automobile Club, inviting the A.C.F. to join in a race from Paris to Vienna next year. It is proposed that the route should be through Switzerland and Bavaria via Salzburg to Vienna. Once arrived at Vienna, it is proposed to hold kilomètre competitions on the Corso, and a series of other events. It is proposed to give big prizes, and altogether the scheme is on a colossal scale. Should racing not be sanctioned in France, it is proposed to proceed as tourists to the frontier. The A.C.F. unanimously decided to accept the invitation, and at once commence the organisation of the event.

THE ink of the minute was barely dry when Mors applied for the first four numbers, and Panhard for the next six, and now entries are coming in fast. The Hon. C. S. Rolls was not long in telegraphing for a place, and Jarrott and all our old friends are coming up to the scratch, though I search in vain in the fifty-three entries for Mr. Edge's name. All this enthusiasm is very delightful, and shows what vitality there is in the trade. There remain, however, enormous difficulties and prejudice to overcome before there is any likelihood of the race being held. The Austrian authorities have to be consulted, and also the Swiss, and it is a sad fact that in both these countries motor-cars are prohibited entirely in some parts. I was talking to a friend of mine in Berlin, the other day, who has some extensive shooting in the Austrian Tyrol. He sought my advice, some time last year, with regard to the purchase of a motor-car. I asked him if he had purchased yet, and he said, "No; the Austrian Government has forbidden them to circulate on the mountain roads, because they frighten horses." However, let us hope for the best; there is no doubt that a large number of entries, and some more Royal and Presidential prizes, would assist greatly in causing the hesitating authorities to come to a decision.

ONE hardly knows which to consider the greatest, M. Santos Dumont's courage and triumph, or his bad luck. Never was there a human being with more cool, persistent courage and perseverance, and never was there an instance of such stupid bad luck. At every turn some little insignificant hitch has occurred at the wrong moment, and now, to crown it all, a stupid regulation, added as an afterthought—not with any bad intention—has produced a vulgar wrangle around an event which all the world

holds to be a great victory. To make it plain to the readers of the *Journal*, let me explain exactly what has happened. The original rules for the competition for the Deutsch prize provided that the winning airship should be the one that first accomplished in less than thirty minutes a journey, starting from the grounds of the Aero Club, and forming a closed loop with the Eiffel Tower inside it, finish again at the Aero Club. The Committee, as an afterthought, added that the time should be counted from the moment the guide rope was let go to the moment it was again seized hold of after the return journey. But here comes in the difficulty. The Aero Club grounds are small, and contain two lofty balloon sheds. There are also houses and telegraph wires nearly all round them, so that whilst sailing over them is quite easy, stopping and coming down is difficult and dangerous, and needs evolutions which take time and have nothing to do with the time which M. Deutsch had in view when he fixed the half-hour limit.

ON Saturday last, at 2.28, in the presence of some members of the Deutsch Committee and a great number of notabilities, M. Santos Dumont set out for the twenty-third time in his navigable balloon, and headed off for the Eiffel tower and the Deutsch prize. His guide rope, however, caught in the trees, and he had to start over again. At 2.42 he was off again, and, aided by the wind, which was blowing at the rate of nearly five yards per second, he reached the Tower in eight minutes and forty-five seconds, doubled back and beat up against the wind. His motor now began to miss fire, but eventually Dumont sailed triumphantly over the winning post, just 29 minutes and 30 seconds after leaving. He was, however, a little too high up in the air for the guide rope to be seized, and it took him one minute and ten seconds to turn and come down. The scene along the route below him was indescribable. There was a wild rush to points of vantage, and roars of cheering everywhere. At Auteuil the racing was forgotten and every face was turned upwards to watch the contest with the air. At the Aero Club grounds an ovation awaited Dumont, and there were loud and angry protests when it was announced that his time was not to be taken until he had descended. The balance of opinion in France seems to favour a decision by the Committee, that the prize has been won, but the Marquis de Dion holds a contrary view. M. Deutsch (who ought to know) has telegraphed to M. Santos Dumont that he, in his opinion, has won.

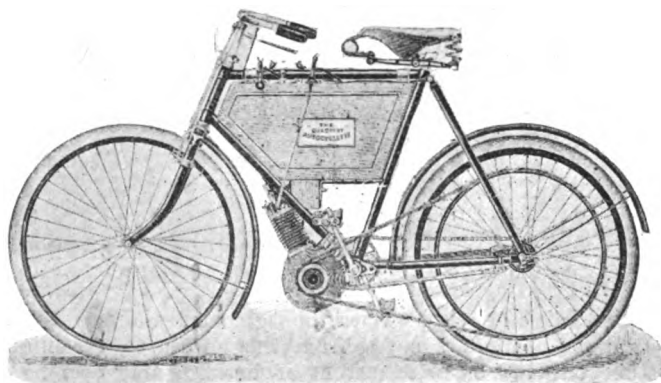
TALKING of the victory of M. Santos Dumont brings me back to the discussion I have been having with Mr. Hollands, which is really summed up in a few words—i.e., the interpretation to be given to the words "practical result"—and I doubt not but that we shall both agree after his courteous letter in last week's issue. From the point of view of the public, I hold that a practical result in flying machines means the achieving of a result demonstrating the possibility of a flying machine being used for practical transportation purposes. M. Santos Dumont has repeatedly raised himself into the air, taken the direction he desired, and sunk again to the earth at the spot where he started from. No one else has approached such result—Dr. Lilienthal's experiments were, I admit, admirable but not practical—soaring down a mountain side can never be of much use for transportation purposes. I lean towards M. Santos Dumont's idea (i.e., a combination of the balloon and aero-plane) as the successful flying machine of the future for the reasons I have already given, and I cannot quite agree with Mr. Hollands' figures, for the bird is not only a winged motor, but a winged motor carrying a passenger; and not only should his legs, head and wings be lopped off to compare him with a motor, but also the greater part of his other organs—in fact, all those not specially concerned with the creation of power. Referring to the concluding paragraph of Mr. Hollands' letter, it is, I know, the opinion and conviction of many eminent engineers that the aero-plane is the flying machine of the future, and that opinion he has a right to and it has my respect—but up to the present there have been no practical results in that direction.

THE readers of the *Journal* will remember that I briefly referred, some weeks ago, to the question of alcohol *versus* petrol in France, saying that the price of alcohol prevented it becoming generally used in preference to petrol, notwithstanding the high price of petrol caused by the heavy import duty. Great efforts are now being made by the distillers to produce a cheap and satisfactory alcohol, and to cause depôts to be opened all over France for the convenience of automobilists. The Parliamentary Committee, which has the Budget in hand, has now decided to recommend the Government to make a monopoly of the refining of petrol. The effect of this will probably be to increase the price and deteriorate the quality—if one is to judge by other Government monopolies, such as matches, for instance. If this be the case, alcohol will be very soon the motive power of automobiles in France. Such a transformation will make the agriculturists welcome the motor-car, and with such a powerful ally, automobilism in France will be able to easily overcome the opposition and obstacles placed in the way of its further development.

It has been stated that the Prussian authorities have placed a definite embargo upon any road races. Baron de Hammerstein, Minister of the Interior at Berlin, has, however, now specifically stated by letter to the Duc de Ratibor, the president of the German Automobile Club, that no official interdiction has ever been promulgated in Prussia. So far as the German States are concerned, no question of suppression has been raised. The position is that special permission must be asked and obtained from the Government ere a race can be held.

THE QUADRANT AUTOCYCLETTE.

THE Quadrant Cycle Company, Sheepcote Street, Birmingham, have devoted much time and study during the past season to the bringing out of a first-class motor-bicycle, and although adopting practically the Minerva motor, pride themselves on having made various improvements to the same which should be of benefit to riders of the Autocyclette. Regarding



the design and construction of the machine itself special attention has been given to this with a view to reducing vibration when travelling at a high speed and increasing general comfort. The company make a special feature of their powerful brake and also the design of their fork-crown. Although the season is so far advanced orders are coming in daily for these little machines, and arrangements are being made for a large output next season. We hope shortly to put one of these machines to the test.

MR. B. LAURIEZ, of 6, Fenchurch Buildings, London, E.C., has been appointed sole export agent for the United Kingdom and British Colonies for the Koch heavy-oil motor-vehicles.

At a meeting of the Police Committee of the Belfast Corporation last week, Mr. Leslie Porter made application for a licence to ply motor-buses for hire in that city. The Committee expressed themselves favourable to granting the licence, and requested Mr. Porter to bring the car for their inspection at the next meeting.

THE "CRESTOMOBILE" PETROL CAR.

THE accompanying illustrations depicts a type of light motor-carriage that has met with success in America, as its design is taken from one of the most popular types of carriages in use in that country—the Runabout. As will be seen the little car, which has been named the Crestomobile, is fitted with a single cylinder air-cooled motor, which develops $3\frac{1}{2}$ h.p.; it is located, together with the carburettor and silencer, in the front part of a tubular frame. The power is taken from the motor to the countershaft by means of a chain, a second chain connecting this shaft with the differential gear on the rear axle. A friction clutch is fitted on the countershaft to admit of the motor being thrown out of gear, but apparently no mechanical change speed gear is fitted, the different speeds being obtained by regulating the ignition. The numerous levers usually found on motor-cars have been dispensed with, reducing all the mechanism to one simple lever, operated by the right hand. In operating the carriage the driver sits on the right-hand side, with the side-steering bar handle in his left hand. The right hand rests on the speed-control handle, which is connected to a shaft leading through the centre of the side-steering upright, this shaft being connected with the



advance ignition device. With the right hand the operator controls all the changes of speed from the lowest to the highest, cutting out the electric current if desired, and opening the exhaust valve when coasting hills, thus cooling the motor, relieving it of compression, and preventing the mixture from being drawn into the cylinder. The friction clutch lever is placed where it can be easily reached by the right hand in starting the carriage; the right foot rests on the brake pedal. Under the seat are the battery and coil, the tank taking up the remainder of the spare room. As will be seen every part of the machinery is under the eye, and can be easily reached for repairs or examination. The weight of motor and passengers is brought very near to the ground, so that sharp turns can be made at good speed without any danger of upsetting. The petrol tank has a capacity sufficient for a run of fifty miles. The car weighs complete under 400 lb. The road wheels are 28 in. in diameter, and are fitted with heavy pneumatic tires. The car, which is made by the Crest Manufacturing Company, of Cambridge, Mass., U.S.A., can attain a maximum speed of twenty miles per hour, and mount grades of 1 in 7. In view of its low price, 550 dollars (£110), it has, we learn, met with a favourable reception in America, particularly at the hands of the middle class.

FLOTSAM AND JETSAM.

BY "FLANEUR."

A DRAMATIC example of the mischief that equine irresponsibility can wreak within a few moments has just occurred within a mile of my own door, and brought sorrow to a most estimable household. While a horse was being hitched to an omnibus the passing of a tram caused the animal to swerve, and the conductor dropped the pole on to its hocks. It dashed off at once in terror, and either of its own accord, or through the efforts of the boy on its back, it turned into a side street, where it knocked down an elderly clergyman, who died the next day as the result of this grievous catastrophe. Though an octogenarian, the victim had eyesight and hearing alike unimpaired, and a younger man would probably have experienced the same fate. A tragic incident of this kind, when it happens to a family of your own friends, brings home with much greater force than the mere reading a newspaper report the awful risks that people everywhere are content to run, simply because they regard the horse as indispensable. Once more I marvel, as I have marvelled many a time before, that the nation does not recognise the manifold advantages that are derivable from the substitution of mechanical for animal traction, and so far from opposing the growth of automobilism, or even according it a tacit approval, does not actually clamour for the change to be brought about, and that right quickly.

It cannot be urged that the runaway horse is a rare thing. Though most of them become accustomed to what they meet, including motor-cars, a sudden happening may quite upset the nerves of almost any animal. A fluttering newspaper caused a pair of horses attached to a landau to take fright the other day near Stratford-on-Avon, and but for the pluck of a cyclist who held on to their heads a serious disaster would have been certain, as the driver was quite unable to hold them in. At Clapham Junction the other evening an equestrian was run away with, and the horse simply bolted along the sidewalk, scattering people right and left and knocking down and severely injuring a woman. The eye-witness who described the incident to me states that for aught he knows it may have still done more damage, for when last he saw it the animal was still in full flight, and in a populous quarter. Again, on Monday evening of this week a mail van came into collision with a Highbury 'bus, and the driver was then thrown to the ground. Naturally the horses bolted, and small blame to them in such a case, and the passengers had a nerve-destroying time until the runaways were stopped. Now the paramount advantage of a horseless vehicle is that in the event of such a mishap as a collision the consequences end with the impact, which does not set up a probable train of further disaster in the wake of a runaway team.

SOMETHING exceptionally new and strange requires to be invented concerning which it is not in some way possible to find some reference in Shakespeare or in the Bible. The motor-car might reasonably be expected to come within the category of "impossibles," but here is an extract from the Book of Nahum, which contains a by no means recondite allusion to automobile vehicles:—"The chariots shall rage in the streets, they shall jostle one against another in the broadways; they shall seem like torches, they shall run like the lightnings." The passage will be found in the fourth verse of the second chapter. In the Revised Version the reading is as follows:—"The chariots rage in the streets, they jostle one against another in the broad ways: the appearance of them is like torches, they run like the lightnings."

THE first two clauses would serve admirably as a metaphor for an indignant anti-automobilist describing the opening stages of the anniversary run to Southsea, when the cars are squeezing through the congested traffic at the junction of Great George Street and Parliament Square. The "torches" might be construed as referring not so much to the firing irons of the Locomobile cars as the appearance of the steam car when suffering

from a "back draught," or the Peugeot when flames are issuing from its "oven" in the rear; or the reference might even be applied to the flare of a Blériot lamp. As for the running like the lightnings, that is clearly an allusion to the flight of a racing Mors or Panhard in a Paris-Bordeaux race, or, to bring the matter nearer home, the mad career of a low-powered, solid-tired car in the opinion of a Reigate "bobby."

AUTOMOBILISTS are threatened, now that the movement is firmly established in our midst, with the same long series of artistic nightmares that beset the pathway of the cyclist when "safety" riding became fashionable. Every wheelman knows how nine-tenths of the illustrations appearing in magazines and sixpenny weeklies, when dealing with the cycle, were the veriest travesties of that machine, to which, oftener than not, they did not bear the least resemblance. Cranks and pedals were always wrongly placed, the chain would travel from the off-side of the rear hub to the near-side of the crank bracket, the main tubes of the frame were set at impossible angles, the nice parallelism of the mudguards with the tires was invariably violated, the wheel-base was so short that the machine was quite unridable from that cause alone, and, in fact, almost every mistake that could be made was perpetrated with complete success. And why? Simply because of all sections of the conservative British public the artist is the most conservative. He has studied the anatomy of the human figure and of the horse, but anything mechanical is quite beyond him.

HARDLY a single illustration of a motor-car has yet appeared in a non-technical journal in recognisable form, and the latest example, I think, is the most flagrant of the lot. A new monthly has been published this week under the title of "Living London," with Mr. G. R. Sims as editor. Presented therewith is a full-plate drawing by Gordon Browne, R.I., R.B.A., over the title of "A Halt in Piccadilly." The incident depicted is the familiar one of a policeman controlling the traffic. Prominent in the picture is what out of pure charity we may assume the artist to have intended as a motor-car. There is the bell-mouth of a motor-horn, and the driver is wearing a peaked cap, but here all verisimilitude comes to an end, and it is only the fact that the vehicle has no shafts nor horses that enables one to interpret the artist's meaning. The forepart is of the weirdest and most mysterious kind, and utterly unlike any automobile vehicle that was ever built or ever will be.

To describe it is quite impossible, and the artist himself could not explain, for the thing is meaningless—as a motor-car. One meaning, however, it bears very plainly indeed, and that is that the artist apostrophised himself as follows:—"I don't know what the front of a motor-car is like; I am too lazy to find out; I will therefore evolve something from my inner consciousness." But why this insult to the intelligence of the general reader? And what is art worth if it is not faithful? The artist would feel insulted if told that he could not draw a horse; why should he rest content with his obvious inability to draw a motor-car? And if his lack of talent in that direction be irremediable, the least that he can do with propriety is to leave the car out of the picture. Nobody asked him to put it in; but if it is there it should be properly drawn.

THERE is an article in this month's *Harmsworth Magazine* on "Celebrities who 'Mote,'" which is interesting in its way, but is by no means conspicuous for accuracy. It is open to doubt whether the German Emperor has himself steered a motor-car, more especially when we consider the physical infirmity which compels him to hold a gun with one hand and to have special bridles fitted to his specially trained horses. At the same time the Kaiser is undoubtedly a keen supporter of automobilism, which is more than can be said of President Loubet, who is quite erroneously described as "one of the most ardent devotees of the art of motoring." M. Loubet, as a matter of fact, officially recognises automobilism because of the importance of the national industry, but he is an out and out horse-lover *in propria persona*.

The only time he is reported to have mounted a motor-car was during a visit to the Vincennes annexe of the Paris Exhibition of last year, on which occasion he was taken a short ride by M. Jeantaud on an electric car. The President insisted on a gentle pace, and expatiated on his love of horses. Eventually M. Jeantaud ventured to accelerate the car to a mild eighteen miles an hour. "Ah!" exclaimed the President, "now I appreciate the fascinations of *speed*!" No, we must look elsewhere for our "ardent devotees of the art of motoring."

THE "CLYDE" VOITURETTE.

THE accompanying illustration shows a neat voiturette which has just been put on the market by the Clyde Cycle and Motor-car Company, Ltd., of Shenton Street, Leicester, with the view of meeting the demand for a small vehicle at a moderate price. The motive power is supplied by a Simms 3½ h.p. water-cooled engine, fitted under a bonnet in the fore part of the frame. The Simms-Bosch magneto-electric system of ignition is adopted, which enables the speed of the motor to be regulated from 400 to 2,000 revolutions per minute. Two speeds are provided, the power being conveyed to a countershaft at the rear by a belt, and from thence by pinions to the rear axle. The car is fitted with a device by means of which any slack of the belt can be taken up without it being necessary for the driver to leave his seat. A



pedal controls a powerful band brake on the countershaft, while emergency shoe brakes operated by a hand lever are fitted to the rear wheels. The illustration shows a vertical steering pillar; but we understand that in future the cars will be fitted with inclined wheel steering. The petrol tank has a capacity of 1½ gallons, and on this quantity the makers inform us they have covered a distance of fifty-five miles. By means of the two-speed gear and the regulation of the motor, speeds ranging from four to twenty miles per hour can be obtained.

A STOCK of petrol is now being kept by Mr. David S. Clarke, Lenzie Cycle Dépôt, Alexandra Terrace, Lenzie.

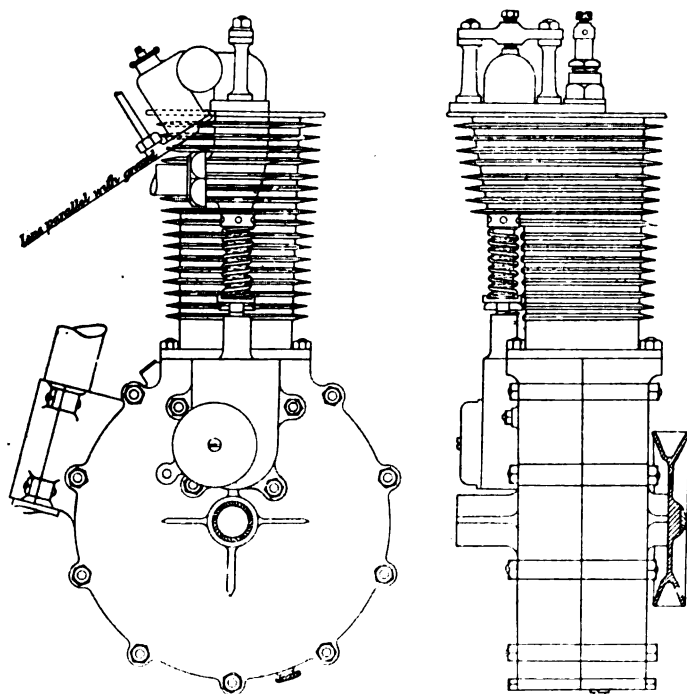
WITH regard to the Universal motor-bicycle described in our issue of the 12th inst., Messrs. Whitehall and Crew, Thoroton Street Works, Nottingham, write to say that they introduced this machine some months ago.

THE English Motor Club propose to continue their runs throughout the winter. On November 2 there will be a run to Brighton, on November 16 they support the Automobile Club's run to Southsea, and other fixtures will be shortly announced. At the recent annual general meeting of the Club nearly all the officers were reappointed and a strong committee elected.

MR. JOHN LOVE, of Kirkcaldy, N.B., informs us that, after having represented the Motor Manufacturing Company in Scotland for two years, he is now free to take other appointments. He intends starting an automobile agency on his own account. While Mr. Love will be free to purchase any make of cars, his experience of the past few years should lead him to select only the best and most reliable types.

THE "PRECISION" BICYCLE MOTOR.

OUR illustration shows two views of a small petrol motor, intended for motor-bicycles, which has just been put on the market by the Precision Motor Company, of 79, Derngate, Northampton, and which possesses several novel features. It may first be mentioned that the cylinder, combustion chamber, and valve boxes are all cast in one piece, thus reducing any loss of compression due to leaky joints. The crank-shaft pin and flywheels, which are made of a special steel alloy, have been ingeniously designed, there being only one joint to connect the flywheels and pin instead of four, so that there are three less joints than usual to work loose and get out of line. A novel compact form of pulverising carburettor is used, and it will be



noticed that this is fixed to the motor in such a way that the base of the device, when the engine is fitted to a bicycle, is parallel to the ground. The inlet and exhaust valves, as well as the carburettor, are readily accessible. The motor, which develops up to 2 h.p., clips on to the main down tube of the bicycle, and drives the back wheel by means of a belt, enabling any speed up to thirty-five miles per hour to be attained.

THE Dutch Automobile Club, owing to bad weather, has postponed the heavy vehicle trials which it was proposed to hold this month.

A FRENCH contemporary writes enthusiastically of the spread of automobilism in Madagascar. Motor-wagons for purposes of transport are numerous, as are also lighter cars and motor-cycles for pleasure. High speed is not, however, much sought after, the roads, which are uniformly bad and mountainous, rendering a higher average than twenty kilometres an hour out of the question.

THE U.S. Board of United States appraisers have of late had so much experience and so much trouble with the proper valuation of imported motor-vehicles that they may now fairly call themselves experts. As a proof of this, the Board lately handed down a decision in regard to a Mors car which was entered as being worth £1,200. No advance was made in the value of the vehicle proper, but an advance had been made of some £160 altogether for various accessories. The importer, Tod Sloan, claimed that these were all a part of the vehicle itself, and should not be charged extra. The appraiser made the advance as stated, however, and this advance the Board sustained.

CORRESPONDENCE.

THE GLASGOW TRIALS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—After careful study of the judges' report on the Glasgow trials, I feel bound to encroach on your valuable space, as I regret to say that the judges have so far not assisted, in the slightest degree, interested amateurs and intending purchasers, who, like myself, hoped to have acquired some useful information and guidance from them. This is the more disappointing as they informed us that in making the awards they were taking into consideration certain matters, which—after a careful study of the awards in Section 1, Class A—I am sorry to say they seem to have completely ignored.

If any of your readers will study the report and appendix they will see that the gold medal in the above class is actually awarded to the internal-combustion engined car which secured the least number of marks in the hill-climbing trials. Why have trials at all if the prize is to go to the least successful car, unless it is a trick of the trade to try and confuse intending non-expert purchasers like myself? We keep on hearing that every maker is cutting down weight per horse-power, and rightly so in my humble opinion. Yet the heavy-weighted Wolseley car for two people only gains the gold medal!

Again, the judges are unable to tell us which is the best car for the second prize; this seems absurd, as two such totally different types as the $4\frac{1}{2}$ h.p. De Dion and the 7 h.p. New Orleans must be, either the one or the other, the better value to ascertain, which I thought was the *raison d'être* of the trials. Surely there is something strange in such awards, and I venture to submit that judges who are unable to judge between two cars so totally opposed as these two are had better call in some practical assistance in the future. The makers of the De Dion seem quite able to judge, as they are now, I believe, ceasing to make $4\frac{1}{2}$ h.p. cars, and are putting on the market one which is exactly similar in its mechanical parts to the New Orleans, except that the latter has two cylinders instead of one. This announcement is, by a peculiar coincidence, published in the English and French papers the same week as that in which the awards are published.

Surely the want of practical skill shown in this judgment is thus fully proved, and shakes the faith of all non-experts like myself in the trials. As far as I can see, there is only one solution to all this—let the judges be men and open our eyes by telling us, through your widely-read columns, their reasons for giving the gold medal to the Wolseley car, and also for bracketing the two silver medal awards, and not leave in the dark any longer such people as myself.—Yours faithfully,

A CONFUSED CONTRIBUTOR.

THE REIGATE PROSECUTIONS.

TO THE EDITOR OF *The Motor-Car Journal*.

As you published a report in your issue of Saturday last of a case before the Reigate Bench the previous week, in which I was defendant, I beg that you will give me an opportunity of laying before your readers a general view of the police situation with regard to motor-cars as it appears to me, and of requesting assistance from a few of your readers in combating what I feel to be a real danger to the motor industry.

Not but that I believe that the police have their proper position in relation to motor-cars generally, and if their zeal were born of knowledge, I am sure that that position would be admirably filled. Unfortunately, however, this is not the case. Their ardour accords more with their ignorance than their knowledge, and as they appear unwilling to improve opportunities of acquiring the latter, automobilists must combine for the purpose of curbing their zealous propensities inspired by the former.

Now, before directing your further attention to the behaviour of the police at Reigate upon occasions where no harm could possibly have resulted, I should like to point out an instance in which their services would have been of real value to the industry and to the public. Could anything be more absurd than making a racecourse of the carriage drive in Hyde Park

during Church Parade on Sunday morning? I accuse the driver of a certain red-painted voiturette of misbehaving himself in this way last Sunday. He drove up and down the carriage drive at between twenty-five and thirty miles an hour, and exhibited to the wealthy crowd on the footpath the picture of his car bumping violently, and the ladies therein holding their hats on their heads with one hand and grasping the backs of their seats tightly with the other hand to prevent themselves being unseated by the swaying from side to side of the car. A police inspector and several constables viewed this criminal foolishness with equanimity, but if the driver in question had overheard, as I did, the remarks of several of the wealthy crowd, I believe his opinion of himself would have been considerably lowered. I assure you, Sir, that if the police had taken proper action on this occasion, I would willingly have given them my card as a witness upon their side; in fact, I had almost a mind to prosecute myself.

But returning to Reigate, we find a very different state of affairs. As, however, my own case must still be considered *sub judice*, I will confine myself in this letter solely to facts, and these are as follows:—(1) Sixty summonses against cyclists and motorists were heard upon this occasion by the Reigate Bench, and in every case, without exception, a fine was inflicted; distinctions in the amount of the fine being made only according to whether the defendants pleaded guilty or not guilty. In the case of motorists, those who pleaded guilty were fined £2 and costs, and those who pleaded not guilty were fined £5 and costs.

(2) Although there were at least eighty cases in the Reigate list for that day, every defendant was summoned for eleven o'clock in the morning; thus, the last case (my own) was not heard until past five o'clock in the evening. Motorists, therefore, with their lady and girl witnesses, were obliged to sit and listen to squalid drunk and disorderly cases for hours before their cases were called. My protest against this arrangement was treated with contempt.

(3) One of the magistrates on the Reigate Bench, who took the chair in the course of the day, upon being informed that a motor-car driver who had been stopped had given somebody else's card instead of his own to the police, made the extremely injudicious and unjudicial remark, that "it shows the trouble these people give us."

(4) During my cross-examination of a police witness, I elicited the fact that Captain Sant, the Chief Constable for Surrey, was responsible for the ambush or trap by means of which the names and addresses of motorists were obtained.

(5) I appealed against the fine, and the case will now, therefore, be re-heard before one of His Majesty's judges.

This is the situation so far as Reigate is concerned; and I maintain that automobilists have a right to take any action they possibly can, within the limits of the law of this country, to prevent a recurrence of such a state of affairs, whether at Reigate or at any other police centre. I have, therefore, thought out a scheme by which the situation may be, to a very large extent, altered, and to this scheme I am prepared to devote a considerable amount of time and attention. I shall need, however, for its proper execution, the assistance of a few automobilists with their cars and, if possible, of their friends with cameras, on Saturday afternoons and Sundays for the next few weeks; and if any of your readers could spare time for this purpose, I should be glad if they would communicate with me in confidence.

At the same time I should like to ask all those cyclists and motorists who have recently been stopped by the police, to whom they have given their names and addresses, whether a summons followed this procedure or not, to communicate with me confidentially at the earliest possible moment, because I may be able to materially assist them.—Yours truly,

R. MOFFAT FORD.

A GOOD RUN ON A MOTOR-TRICYCLE.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—The following details of a ride I accomplished may, perhaps, interest your readers. Mounted on a 2½ h.p. M.M.C. tricycle, I left Birmingham for Blackpool on the 14th September. I wanted to call at Warrington and Northwich, so I made my way thither from Birmingham. I went through Newport (Salop)

and on to Whitechurch, called on Mr. Dawson and obtained some spirit, and went straight to Northwich, through Hartford. My cyclometer registered some eighty miles; I accomplished this distance, including one hour for stoppage and meal, in five hours, so that I averaged twenty miles an hour all the way. I stayed at Northwich the night, and then went to Warrington, fourteen miles, which I did in thirty-five minutes. I went back to Northwich at night, and back again to Warrington in similar time.

Leaving Warrington a few days after, I went to Wigan, then to Preston, then over Freckleton Marsh to Blackpool. Outside Preston I had trouble with my sparking plug—the first trouble all the way; the packing worked loose, and the middle wire moved. This I rectified by fitting a fresh plug. After ten days at Blackpool I started back at three o'clock in the afternoon and reached Birmingham, by almost the same route as I came, at 10.15 p.m.; the most marvellous ride I ever did in my life. I stopped only once at Warrington for petrol, having a very large spare tank on my machine, so that I averaged twenty miles an hour for seven hours; my cyclometer registered 140 odd miles. The machine during that time never gave the slightest hitch, and I had a 1s. 9d. plug in.

One funny little incident I might recall. I stopped at a small place called Newton-le-Willows, between Warrington and Wigan, and a tremendous crowd gathered round in a few minutes, one man remarking, "Aye, lad, you watch him, he don't pedal." Hoping I have not occupied too much of your valuable space.—Yours truly,

CLAUDE H. MAY.

MOTOR-CAR ON FIRE.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—It seems to me that the relative safety of a petrol car against total annihilation depends far more on the position of the containing tank than on the means employed to convey the petrol along the supply-pipe. May I ask the correspondents who champion gravity feed as being so safe, to explain to the public why a tank placed high in the body of the car, to obtain the necessary pressure they object to get by a little air, is less likely to totally destroy a car than it would if placed well under the frame and right in the rear, where, in the event of any leak taking place in a joint between it and the carburettor, the chances are in favour of the petrol falling harmlessly on the ground, providing it is placed well clear of the exhaust?

I believe it is possible to design a tank placed right in the rear of the car and slid into a cupboard, so that it could, in the event of a flare, be shot out into the roadway behind by a lever arranged to eject it, and at the same time automatically close the slender apertures of the feed and pressure pipes. No doubt some correspondent may have his "gravity" perturbed by this little idea of mine, but as I happen to have had some experience of the Lee-Metford rifle and the Westinghouse brake, I think I can describe my idea in detail.—Yours truly,

A. E. S. CRAIG.

THE GRANTHAM POLICE AGAIN.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I feel it my duty to inform you and motor-car owners generally respecting the charge of furious driving brought against me at Grantham on Saturday, the 19th instant. I started on Thursday, the 3rd October, with a driver (Collins), to whom I told my errand, to see the method of "clocking" motor-cars on the Great North Road. After leaving Newark I clocked each mile from the boundary of Notts to Long Bennington. The mile, which finishes about thirty yards in the village, I ran in 5 min. 30 sec. This mile the police swore on oath I did in 2 min. 50 sec.—(to Bennington is all uphill). At the next mile we were stopped by the first policeman we had seen, P.C. Kirk. He entered my name and time, twenty-three minutes past one—this Collins and I both saw—by Kirk's watch.

Now I will give you the times sworn to for the two miles. P.C. Bean, who was at one end of the mile timed, said I passed him at 12.55. He further stated that he followed me on his bicycle, and when he got to the milestone where P.S. Holland was

they compared watches, which were alike, each showing one o'clock exactly. P.S. Holland said I passed him at 12.57 50 sec., then he rode on his bicycle to meet P.C. Bean, and compared watches 200 yards away from the milestone, and both showed the time to be one minute to one. Now, one of these officers was lying.

P.C. Kirk, who was at the second mile, gave the time as 1.1, not 1.23, therefore the whole of the times were arranged afterwards. When stopped I told P.S. Holland I had come for the purpose of clocking them by request of the Secretary of my Club—the Automobile Club of Nottingham—and that we should defend the case. Collins, my driver, fully endorsed my evidence, stating the reason of the trip, also that he received instructions how to drive at each mile. The first I clocked before we came to the police mile was covered in 5 min. 8 sec.; the second in 5 min. 30 sec., and the last I forgot to note at the time. P.C. Kirk's watch being at 1.23 and mine at 1.30, I must, however, have done the mile in no time!

In conclusion, I can only advise all motor-car owners to keep away from Long Bennington or the Great North Road where it runs through Lincolnshire, for, whatever speed they travel at, they will be stopped and have to make their appearance at Grantham and pay the piper. The time I left Newark by my watch, which was correctly set before starting, was 12.44. When I stopped it was, by my watch, 1.30 and by the policeman's 1.23—distance travelled eight miles.—Yours truly,

S. HARVEY.

SPARE PARTS PROMPTLY WANTED.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—In your issue of the 12th inst., I notice a letter from a correspondent complaining about the delay experienced in obtaining spare parts. As he points out, to professional men, to which class I belong, this delay is of great inconvenience, and I have warned intending members, who thought of purchasing cars instead of horses, to ponder. In my own case one of the pulleys on my car had to be replaced. Eight weeks have elapsed since the work was put in hand, and I have still no tidings of the car!—Yours faithfully,

M.D.

ENGLISHMAN writes:—"If we must have another name for 'garage' let it be one which suggests even to the uneducated its meaning. What could be more self-explanatory or easier of pronunciation than a combination of the two simple words *motor* and *home* vernacularised into *motorome*? There is at least a genuine British ring about it. The superfluous "h" is, of course, optional.

THE Crypto Works Company, Limited, of 29, Clerkenwell Road, London, E.C., are about to bring out a new motor-bicycle of special design. The ordinary chain wheel is attached to the bottom bracket axle with a free clutch. Attached to the chain wheel is a large gear wheel, which meshes direct into a small pinion on the motor shaft, so that, whether the machine is propelled by the pedals or by the engine, the power is transmitted to the rear wheel through one chain. There is a free wheel on the back hub, so that in going down hills the engine can, if desired, run quite free. The motor is placed in the bottom V of the diagonal, close down to the bottom bracket, thus providing a rigid fixing.

THREE of the cars which participated in the recent 500 miles endurance contest in America were fitted with New York tires, viz.:—Two sets 36 in. by 3 in. tires on two heavy petrol vehicles weighing 2,000 lbs. each; one set 28 in. by 3 in. tires on one heavy steam Stanhope weighing 1,600 lbs.; and two sets 28 in. by 2½ in. tires on two light petrol cars weighing 1,200 lbs. each. The two heavy petrol vehicles and the heavy steam machine made the run and earned first-class certificates. One of the light petrol cars met with a severe accident and was wrecked *en route*. The other one made the run, but too late to qualify for a certificate, owing to trouble with the engine. We understand that none of these vehicles lost any time through difficulty with the tires, and that no repairs or replacements were made *en route*.

HERE AND THERE.

THE King of Portugal followed the operations in the recent Portuguese military manoeuvres in a motor-car.

LAST week the environs of Paris witnessed the trials of automobiles constructed for postal service in Tunis. The course taken was about sixty kilometres and was covered in a satisfactory manner.

THE Caledonian Railway Company have decided to experiment with a motor-van for the delivery of parcels arriving by passenger trains, and the first car was put to work in Glasgow on Monday. It has a carrying capacity of two tons.

THE Marquis of Ailsa recently drove round his estate in Scotland in a Wolseley car. There were four passengers up, representing a weight of 53 stones, and with this burden the car climbed a hill which has a gradient of one in seven for the whole distance.

AT the last meeting of the Beckenham District Council Mr. Blake said he thought it was quite time that body took some action with a view to bringing to the notice of the police the dangerous speed at which many motor-cars went through the neighbourhood.

THE DON, of Holborn Viaduct, London, E.C., advise us that they have now opened a special department for motor clothing, and have sent us a leaflet showing a few illustrations of the different articles stocked. All goods are warmly lined and made especially for comfort when motoring.

As an impression prevails that they are only sub-agents, Messrs. Bennett and Carlisle, Limited, of Exchange Arcade, Manchester, ask us to mention that they have been appointed sole direct agents for the Locomobile Company of America for Manchester and district.

At a meeting of the Gloucester County Council on Monday it was decided to petition the Board of Trade with a view to some restrictions being put into force in reference to the speed of motor-cars, the main suggestion being that each driver should be granted a certificate for proficiency before he be allowed to drive a motor-car.

MR. FRANK MORRIS, of King's Lynn, has just introduced into that district a Gardner-Serpollet steam-car. Notwithstanding that Mr. Morris had had no previous experience with this type of car, he went to York to fetch it and had no difficulty in driving it to Lynn, a distance of 174 miles.

COMTE BOSC DE PERIGORD, who was married in London a week or so ago, is the son of the Duke of Talleyrand and Sagan, and one of the best-known among Parisian automobilists. He has been identified with the movement in France from its earliest days, and "endowed" two big races, the Paris-Trouville and the Paris-Rouen respectively, both of which were won by M. Girardot.

ON Sunday last Mr. F. Guy Lewin drove Prince and Princess Mohamed Abraham from London to Windsor on his M.M.C. voiturette, fitted with New York tires. The journey from the Hotel Cecil to the White Hart Hotel, Windsor, was accomplished in one hour and ten minutes. The prince was highly delighted with his drive, and we believe intends to take a car of this description to Cairo with him.

THE members of the Yorkshire Automobile Club will hold the last run of the season to Harrogate to-day (Saturday). Leeds members will meet at the City Square, Leeds, at 2 p.m., Bradford members will meet at Manningham Park at the same hour, while the Harrogate members will meet at The Stray (Prince of Wales) at 3 p.m., and then proceed to meet Leeds and Bradford members. The return arrangements will be made *en route*. The last club run to Ilkley was a great success, nine cars and twelve cycles taking part.

AT times we have mentioned a week's sales of some of the London firms in the trade. We now refer to a provincial house, the Motor-Car Depot, of Reading, under the proprietorship of Mr. A. E. Major, which last week supplied a Royal Enfield motor-bicycle, a four-seated Locomobile, a 12 h.p. Benz tonneau, and a 12 h.p. Benz Charette. The first mentioned was sold to a lion-tamer, and the last to a lord, the whole representing a good week's batch at the end of a season.

MR. C. T. CROWDEN has promised to read a paper on "Motor Steam Fire Engines" during the present session of the Coventry Engineering Society.

be very detrimental to motor-cars that they should be numbered, although he did not object to their being registered. The motion was carried by eleven votes to two.



THE "LOCOMOBILE" CARS AT THE GLASGOW TRIALS—READY TO START.

MESSRS. SHAW & SON, of High Street, Crawley, have introduced a number of improvements in the Shaw motor-bicycle. Pedals are now fitted in place of the former foot rests, while the engine, which is of $2\frac{3}{4}$ h.p., drives the rear wheel by a $1\frac{1}{4}$ inch belt.

ON another page we reproduce a photograph of Mr. D. M. Weigel and Mr. Clifton Robinson, Junr., on the 24 h.p. Panhard, which has since been acquired by Mr. Eric Chaplin, nephew of the Duke of Sutherland.

As regards the case reported in our issue of the 12th inst., Messrs. Montague Hawnt & Co. ask us to say that they are quite innocent in this matter, as they inserted the wording in their catalogue exactly as furnished to them by the Motor Manufacturing Company, Ltd.

THE United Motor Industries Ltd. have just issued a price list of spare and replacement parts for Aster, Darracq, Decauville, Mors, Panhard, and Peugeot motors. Included in the list are prices of parts for Minerva, Werner, and Moto-sacoche bicycle motors. This should interest those cycle makers who are joining in the motor-bicycle movement.

THE Imperial Tyre and Rubber Company, Ltd., of 27, Brooke Street, Holborn, E.C., are making a special feature of re-rubbing and repairing motor tires, which is done on the premises by experts. They inform us that this department of their business is rapidly increasing, and that they are in a position to promptly execute any work with which they may be entrusted.

AT the last meeting of the Tavistock Urban District, Mr. J. Friend moved that the Tavistock Rural District Council be asked to support the Urban Council in petitioning the Local Government Board to have motor-cars registered, and numbered in front and behind. Mr. E. Yelland thought it would

THE ceremony of cutting the first sod in connection with next year's Art and Industrial Exhibition was performed on Thursday last week, at Wolverhampton, by the Earl of Dartmouth, the Lord Lieutenant of the county, in the presence of a large assembly. In many respects the Wolverhampton Exhibition will follow the lines of the Glasgow Exhibition.

A REMARKABLE feature of the advance of the motor industry is the large number of the better class cycle agents who are adapting themselves to the automobile business. We were the other day in Luton, and were not a little astonished to see the fine new premises of Messrs. Lloyd, Partridge and Company, in Chapel Street. The dépôt has been erected for the sale, storage, and repair of motor-cars. The firm deal chiefly in voituresses and motor accessories, and have every convenience for motor repairs, keeping several skilled mechanics on the premises.

THE Hozier Engineering Company, Ltd., of Bridgeton, have sent us a copy of their preliminary 1902 catalogue, from which we learn that the Argyll voituress will next year be fitted with a 6 h.p. De Dion pattern single-cylinder engine. For the new season the company are also bringing out an Argyll light car, fitted with double-cylinder motor of from 8 to 10 h.p. at 750 revolutions per minute. The transmission will be on the lines adopted in the voituress, the weight complete of the car



BACK FROM THE RUN.

coming out at about 13 cwt. The Hozier Company are now devoting attention to delivery vans, and notify us that they are about to introduce two types—one of 6 h.p. to carry 6 cwt. and one of 8 to 10 h.p. to carry 15 cwt.

countries. Lowe had introduced himself to his victims at exhibitions, and had inspired confidence by inviting them to call on him at well-known hotels. Detective-sergeant John Bissell, of the E division, who apprehended Lowe at Preston, whither he had absconded when he had fled the prosecutors to his own satisfaction, said he had posed as a wealthy American gentleman staying in this country. Lowe had paid some of his bills at the largest hotels, but had at others left behind only a few newspapers, a little correspondence, and his unsettled account. He had obtained between £300 and £400 by his frauds, and had ruined a working man, who invested his all, nearly £50, in an invention. His lordship described Lowe's offences as cruel and persistent, and ordered him twelve months' hard labour. Just before the last Motor-car Exhibition at the Agricultural Hall the prisoner brought out a new motor paper, which, however, only survived one issue.

OFF SIDE.

At Eastbourne Mr. James Davis appeared in answer to a summons charging him, as driver of a motor-car, with not keeping the vehicle on the left, or near, side of the road, on September 28th. Mr. F. Lawson Lewis defended, and intimated that his client pleaded not guilty. The magistrates, after hearing the evidence, considered that there was practically no defence, and inflicted a fine of 40s. including costs.

FAILING TO STOP.

At the Winchester County Bench, Ernest Hannell, of Drayton, near Andover, was charged that he, being the driver of a light motor-car on the road between Sutton Scotney and Micheldever, in the parish of Wotton, on the 28th September, did not stop when Thomas Redwood held up his hand as a signal for him to do so. After hearing the evidence the Chairman said that on the part of the Bench he could say that they were not unanimous as to their decision in the case, but they all believed that on both sides the evidence had been given with truthfulness. They did not doubt any of the witnesses and it was difficult to say what mistake might have arisen, and under those circumstances they would dismiss the case.

FURIOUS DRIVING CASES.

At Epsom, George Pauling was summoned for driving a motor-car at a greater speed than twelve miles an hour, at Chessington, on September 26th. Mr. A. Clarke Williams defended. Constable 614 V said the defendant passed him at ten miles an hour, but then increased his speed to fifteen or sixteen miles. He (witness) met Mr. Bird on horseback, and got defendant's name and address from him. By Mr. Clarke Williams: Mr. Bird suggested that proceedings should be taken. His idea of the speed was simply a guess. George Bird, of Chessington, said he held his hand up for the motor to stop, but defendant kept on. Witness's horse was frightened, turned round, and galloped in front of the motor-car. He turned and told the driver that if he did not stop he would follow him to Kingston. After much squabbling he gave his name and address. When defendant met him the motor was going at from fifteen to eighteen miles per hour. For the defence William Wickins, the driver of the motor-car, denied that he increased his pace after passing the constable, and said he slowed down and stopped when Mr. Bird held up his hand. There was no truth in the story that the car chased the galloping horse. Mr. Pauling left the car and offered to lead the horse by, but Mr. Bird would not allow him to do so. The defendant was also sworn, and gave similar evidence. The case was dismissed, but the Chairman wished it to be known, that if cases of furious driving of motor-cars were proved before them defendants would get no mercy. "In this case, however," said the chairman, "the evidence is overwhelmingly against a conviction."

At St. Albans, Sir Charles Lawes, Bart., was fined the maximum penalty of £10 for furiously driving a motor-car through St. Albans. Witnesses stated that the defendant was driving at the rate of from fifteen to twenty miles an hour, and that he ran over and killed a dog. Sir Charles denied furious driving. He admitted having been fined £3 recently at Kingston for a similar offence.

At Spittlegate (Lincolnshire), Alfred James Poole, of Seaford, Sussex, was fined £10 and costs for furiously driving a motor-car on the Great North road. A cyclist stated that the car was travelling forty miles an hour. It went past him like a pigeon flying, and nearly knocked him off his machine. He had, he said, never seen one travel so fast before. A policeman said the car was going as fast as any train he had seen on the Great Northern Railway.

At the same Court, Samuel Harvey, of Nottingham, was fined £5 and costs for a similar offence. Mr. C. S. Welles-Lucas, of Nottingham, defended, and pleaded not guilty. Police Constable Bean stated that defendant was travelling at a rate of over 25 miles an hour. Police Sergeant Holland corroborated the evidence of the previous witness, as did also Police Constable Kirk. Mr. Welles-Lucas addressed the magistrates for the defence, and said defendant was a member of the Nottingham Automobile Club, and one of their rules was to keep within the twelve miles pace. It was on behalf of this Club that he appeared. The Club had asked defendant to go down to Long Bennington and see how the police "clocked" motor-cars. Mr. Collins drove the car, and defendant timed the distances. The time the mile was done in was five minutes thirteen seconds. The magistrates retired, and on their return into court after three minutes' absence, the chairman said the Bench were of opinion that the case had been proved.

At Kirkcaldy Police Court, Archibald James Hedges, motor-car driver, Wemyss Castle, was charged with driving a motor-car at a speed

of sixteen miles an hour. Several witnesses spoke to the car travelling at over twenty miles an hour, but as the driver wore goggles they could not identify the accused. The charge was withdrawn.

At Milnthorpe, Joseph Fisher Hodgson, of Etterby View, Carlisle, was charged with driving a motor-car at an unreasonable speed, having regard to the traffic, at Milnthorpe, on October 1. John Clark, of Milnthorpe, said the defendant was travelling at between twenty and thirty miles an hour, and ran into his cart, doing considerable damage. Defendant and his wife, who was with him at the time, gave evidence to the effect that they were travelling at not more than seven or eight miles an hour, and that the horse backed the cart into the car, doing great damage to the car. Witnesses having been heard on both sides, the case was dismissed.

Reported above are 6 prosecutions for furious driving. In 3 cases the summonses were dismissed, while in 3 cases fines amounting to a total of £25 without costs were inflicted.

WHY did the Locomobile run? Because the petrol (patrol) was after it.

A RATEPAYER writes to the Scarborough papers recognising, with evident pleasure, the fact that the motor-cars in the city can go where trams are impracticable, and suggesting that they are more useful in such towns than cumbersome tramway systems. We agree with him.

MESSRS. GREEN AND BOULDING, of 105, Bunhill Row, E.C., are issuing a well-illustrated catalogue and price list of the many fittings, mostly applicable to, if not actually designed for, steam motor-cars. Metallic packings, of which several systems are displayed, are a well-known speciality of Messrs. Green and Boulding. Lubricators figure prominently, while gun-metal wheel valves, stop-cocks, and check valves, in a large variety of designs and sizes, are amongst other fittings depicted.

We learn that Mr. A. E. S. Craig, of Putney, has devised a universal stand for motor-bicycles. Mr. Craig states that the stand will fit any type of machine—Werner, Singer, Minerva, etc., instantly, no matter where the motor, tanks, etc., are. There is only one attachment, and this is made with a thumbscrew. The wheels are free to revolve, and as there is no fastening at the hub nuts or fork-ends, the chain and bearings can be adjusted while the machine is on the stand.

THE provisional committee of the new Motor Cycling Club held a meeting on Thursday last week, and after a three and a half hour's sitting evolved a set of rules and a programme for next season. The suggested programme consists mainly of runs from various well-known starting points on the main roads out of London, tours at Easter, Whitsun, and August, an "open" non-stop run from London to Bath, an open hill-climbing competition, and socials in the "off" season, embodying lectures, discussions, and concerts.

IN July last Mr. Roger Wallace, the Chairman of the Automobile Club, addressed a letter to all the members, in which he urged them to propose suitable candidates for membership, in order that the Committee may be placed in a position immediately to rent new Club premises. From the list which has been sent us we notice that, in response to this appeal, eighty-four candidates have been proposed, through the efforts of fifty-nine members. There are now over 1,000 members of the Club. It is hoped that every member will be able to propose at least two new candidates for membership, so that the Committee may be able to proceed with the selection of a suitable Club house, including a storehouse for members' vehicles.

ON Wednesday evening an accident, resulting in the total wreck of a new motor-car valued at £800, and the injury of one of its passengers, occurred in the Goldhawk Road, Shepherd's Bush. The car, which is a 16 h.p. Milnes, was being driven by Mr. H. G. Burford; at the time he was following a tramcar, and in order to pass a lad with a barrow on the wrong side of the road, the car was temporarily checked, with the result that it slipped right across the road with the bonnet end on to the pavement. The consequence was that an approaching tram could not be pulled up in time, and dashed into the rear of the car. Three of the occupants were thrown out, Mr. Burford and two of his companions escaping with some bruises, whilst one gentleman, less fortunate, received a severe scalp wound, which necessitated surgical attendance. We learn, however, that after a short rest the injured gentleman was able to return to his hotel.

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COMMENTS.



IN securing the presence of the Rt. Hon. Walter Long, M.P., at their meeting on Friday, the Liverpool Self-Propelled Traffic Association did well, and his speech must have gratified all who were present. It was very clear that in the preparation of any new regulations which may be made with regard to motor-vehicles, light and heavy traffic must be considered separately. Or else the pre-

judice against the pleasure vehicle will wreak some sort of vengeance upon the heavier class. Mr. Long agrees with those motorists who contend that the law as it stands at present is calculated to create law breakers rather than law observers. Evidently that view is being largely accepted, and and its general endorsement will bring us all to the conviction that the only satisfactory thing to do is to abolish the speed limit and make prosecution consequent on driving to the public danger. We trust that Mr. Long will urge that view on his colleagues in the Government and in the House of Commons. He might also have a little conversation with Sir Henry Campbell-Bannerman on the subject.

The Removal of the Tare Weight Restriction.

THE disadvantages under which heavy motor traffic is at present labouring are so apparent to all who have any knowledge of the subject that they should be easily demonstrable to our legislators. The tare limit imposed by the Light Locomotives on Highways (1896) Act has had a dire effect on the industry, and the work already done by builders of heavy motor-wagons is most meritorious in view of the restrictions now in vogue. If the restrictions were removed, or at least made less severe, the progress would be rapid indeed, and the effect of the general introduction of motor vehicles for heavy traffic would be a great boon to English manufacturers and agriculturists. Mr. Long believes such a request to be reasonable, and, such being the case, his influence ought to prove valuable in securing an alteration of the law.

Royalty and Automobilmism.

SOME information has this week come into our hands which shows that the King's interest in automobilism is probably of longer standing than is generally supposed. It appears that in the days of the now defunct Beeston Motor Co. His Majesty had a fancy for a motor-tricycle, and at his command, Mr. E. A. Gorton, of Coventry, took a Beeston machine to Buckingham Palace for inspection. Subsequently he was

requested to take the machine to Sandringham, where Mr. Gorton remained a fortnight, giving frequent exhibitions before the then Prince of Wales. On this occasion, too, the present Duke of Cornwall rode the machine several times.

The Aero Club of the United Kingdom.

By the formal registration of the title "Aero Club," which transaction took place on Tuesday, the first practical step has been made towards linking the pastime of aerostation with that of automobilism in this country. The subject has been discussed by the Committee of the Automobile Club for some time past, the final decision to register the new club being arrived at on the 21st ult. The new club, indeed, will have its headquarters at 4, Whitehall Court, and that its membership will be recruited in the main from the ranks of the Automobile Club goes without saying. Those two well-known *chauffeurs*, the Hon. C. S. Rolls and Mr. Frank Butler, are the leading spirits in the new venture, as to the future of which they are decidedly enthusiastic. Nor is there any apparent reason why sanguine anticipations should not be realised. The French Aero Club has already over 700 members, most of whom are also prominent members of the Automobile Club de France. They have made 500 ascents in eighteen months, and without a single accident. The members ballot for their turn to make an ascent, the cost of which varies somewhat according to the season, but is not expensive in any case. During the present month the tariff stands at 50 francs; which is very much less than a man must pay who charters a balloon at the Crystal Palace, which is a matter of over £20.

The Future.

WHAT it is proposed to do is to raise a sinking fund out of which the initial cost of the balloons and apparatus may be defrayed, and, as regards the ascents, to follow the same methods as the Aero Club de France, i.e., to ballot for turns. The annual subscription at the outset will be very moderate—probably not more than a guinea. We need hardly add that the progress of this new development will be watched with great interest, especially by automobilists. Some day, perhaps, when the *chauffeur* is no longer persecuted, and the legal limit is a thing of the past, he may enjoy the spectacle of a "twelve miles an hour" embargo on dirigeable balloons. Of one thing we may rest assured, and that is that if the powers that be can harass the movement in any way they will not be so false to their obstructive traditions as to pass the opportunity. We may add that a meeting of those who have intimated a desire to join the new club is to be held at the Automobile Club on Dec. 3rd to appoint an organising committee.

A Motor-Car Repairers' Association.

AN association has been proposed among automobile dealers in New England, U.S.A., to serve the object of regulating prices on motor-car repairs and storage, to meet occasionally and to have at each meeting some practical demonstrations, with possible lectures on the different makes of motor-cars. Apparently nothing but good can come from the proposed organisation, and the suggestion should therefore meet with hearty approval, and form an example to be followed by motor-car repairing firms in this country. The business is new, and anything leading to a free exchange of ideas between repairers, by which individual experiences can be made available for the guidance of all, and tend at the same time to protect the business as a whole, should be encouraged and supported.

Upheaval of London Thoroughfares.

AT last definite action is to be taken to check the apparently irresponsible opening up of the thoroughfares of London. As long ago as November last a joint committee of the London County Council, the City Corporation, and the Metropolitan Boroughs came to the conclusion "that the time had arrived for concerted action on the part of the local authorities of the metropolis to remedy the inconvenience, annoyance, loss of time and money now caused by the operations of the gas, water, telephone, and electric lighting companies in laying down, renewing, maintaining, and repairing their mains, pipes, services, and wires." The Highways Committee of the London County Council now suggest that the Council, as the central authority, should have power to exercise effective control over such burrowing operations as the various "workmen's camps" are perpetually carrying out, and they are encouraged to believe that application for this right would be favourably considered by the Government, "as inquiries have been made by the Secretary of State for the Home Department as to what action the Council propose to take with the view of effect being given to the resolution of the conference." It has consequently been decided that the City Corporation and the Metropolitan Boroughs should be asked to support a request to the Government for such power to control these street operations to be conferred on the County Council.

Prejudicial Appearances.

MAJOR RIACH of Bandrum, by Dunfermline, has drawn attention to the attire of many who took part in the Glasgow trials. They made "guys of themselves" in a way "calculated to frighten children." Such is the opinion of the gallant major, who is an enthusiastic motorist, occasionally organising local meets of motor-cars, etc., but who believes the interests of the pastime will suffer "unless drivers and their friends can discard these disfigurements and be content to appear more as ordinary mortals." There is something to be said in confirmation of this protest against some of the hideous raiment donned by a few drivers. At the same time it must be recognised that the winter is approaching, and warmth and comfort must be regarded as of greater importance than appearance. After all, it is a matter of taste—and in this motorists do not err, more than other people.

Wood Paving.

A QUESTION of considerable interest to surveyors has recently been occupying attention in connection with a certain wood paving contract in the city of Westminster. Few persons are concerned, however, with the personal aspect of the discussion. But what those responsible for the proper paving of thoroughfares are concerned in is, remarks the *Architect's Magazine*, the outcome of the Westminster controversy, viz., the proposal that there should be a conference of all local authorities to consider and, if possible, determine what is the best form of paving for the great traffic of the metropolis. At present there is no attempt at uniformity, and even in one

district it is possible to detect several kinds of wood blocks of varying qualities of endurance doing duty on sections of a particular thoroughfare. If a mass of informed opinion—in other words, of local experience—could be collected on the subject, and some kind of wood, be it Australian, American, or what not, could be agreed upon as the best paving to meet the known conditions of traffic, London would gain immensely in the long run both in respect of cost and comfort in locomotion.

Wheel v. Tiller Steering.

IN a series of comments on the results of the recent 500-mile endurance contest in America the *Horseless Age* brings up once more the question of wheel v. tiller steering. Our contemporary is apparently in favour of the latter, and remarks that public fancy has perhaps played a considerable role in the substitution of the hand wheel for the steering lever. This is a part with which the operator has continually to do, and he therefore feels himself competent to select the most suitable device, more so than in matters relating to the power equipment. The problem of devising a reliable and all round satisfactory steering arrangement is, however, as difficult as any connected with the motive power, and for some time to come, at least, the purchaser's fancy in this matter should stand behind the manufacturer's experience. The direct acting steering lever arrangement has less backlash and can be operated quicker than a wheel steering device, and for this reason it would seem preferable to rely on a rational construction of the steering pivots to protect the operator's arm against vibrations transmitted from the steering wheels and to operate these wheels directly by a powerful (long) tiller, than to use the conventional irreversible wheel steering.

A Superb Car.

THE distinction of owning the costliest and speediest car in Ireland is now held by Dr. Colohan, who has just received delivery of a 24 h.p. Daimler listed at £1,360. It is superbly fitted and finished. The doctor has added his own patented improvements to the engine, which now shows 28 h.p. on the brake. He intends bringing the power up to 30 h.p. A magnificent turn of speed is evinced by the car, so much so that it will have to be geared down considerably for use on Irish roads. A new self-starter and several other valuable improvements make it beyond all doubt the finest and fastest car in Ireland at the present time.

A Dust Blow-off.

WE noticed a rather useful fitment to a new car recently. From the silencer a thick tube was carried round the back of the car parallel to the frame, its underside drilled with numerous small holes, the total area of which was considerably more than the usual openings in the silencer. The idea is that the exhaust gases rushing out through these holes will beat down directly on the dust cast up by the rear wheels and the vacuum of the car. Unfortunately, since the fitment was made there has been a deplorable absence of dust in the district where this car travels, and no opportunity has yet been offered of testing the merits of the idea.

Mud! Mud! Mud!

SOON will the muggy days be constant companions of ours. Then the roads will assume an almost inveterate habit of slatternliness and sludginess. Autumn mud is a composition with peculiarities of its own, which winter, unfortunately, has also discovered the secret of. But whilst in January or February our wheels and our hands have got the grip of the treacherous stuff, it comes suddenly in autumn full of tricks which are almost new to us. The young motorist who has come through the summer months triumphantly is driving for a fall if he fails to be respectfully cautious with the autumn mud. Even on bright sunny days it will be found lurking in secret

places ready to cause disaster to the reckless driver. From day to day during the muggy weeks of November it varies in consistency, one sample being more devilish than another in its sliminess. The man who wants to come through it safely must eschew wild driving, he must beware of rushing down hills at summer-speed, for at the base there is frequently a greasy patch; he must not hazard guessing about the condition of the road round the next corner; he must not use his brakes rashly, and he must avoid all sharp curvings. The old proverb, "Hasten slowly," might well be written on the dash-board and carefully observed.

Motor-Cars for Milk Transport.

THE members of the Macclesfield Chamber of Agriculture have been put to considerable inconvenience of late by the alteration of the trains conveying milk to Manchester. An enterprising company have now intimated their willingness to convey the milk by motor-cars, and at a meeting of the Chamber held on Tuesday, the chairman, Mr. Jabez Wright, asked the members to support the movement.

No Service for Belfast.

IN connection with the application to the Police Committee of the Belfast Corporation by Mr. Leslie Porter for licences to run motor-buses in Belfast, the sub-committee appointed by the Police Committee has inspected and weighed one of the buses, and subsequently decided against granting the licences, on the ground that the conveyance is too cumbersome for the

the unwonted diversions and exercises of hunt balls and the like."

Great Scott!

MR. CLEMENT SCOTT is a keen observer of dramatic matters, but his *Free Lance* cannot penetrate the ways of locomotion with anything approaching accuracy. He declares that the "rapid increase of motor-cars about the streets of our larger cities, with their colossal addition to the already desolating pandemonium of traffic and other noises, will soon necessitate a new Minerva to invent us some fresh musical instruments." For the noise that is now common will, according to this critic, deaden our ears to the musical notes of present-day instruments. And so he pictures a time when the hurdy-gurdy will be fashionable in drawing rooms—owing to the loss of musical taste occasioned by the roar of the motor-car. Mr. Scott must have been in a bad way for a paragraph or two when he wrote such nonsense. Where is the noise with a steam car or an electric vehicle, and does the rattle of the petrol car over cobble stones jar on the nerves any more than does the clatter of horses' hoofs on an asphalte road?

Dinner—Before or after Runs.

OUR friends in the United States are observant as well as ingenious, and the Runs and Tours Committee of the Automobile Club of America have evolved a method for preventing scorching on club runs which is worth considering elsewhere. They noticed that when the members met at the



Photo by]

THE GLASGOW TRIALS—UP AMONGST THE HILLS.

[Mr. M. D. Rucker.

congested streets of Belfast. The sub-committee consists of five, three of whom were against granting the licences.

An "Enthusiast's" Idea.

THE "Enthusiast" who writes the "Jottings of a Motorist" in the *County Gentleman* appears to be making a speciality of searching for unexpected advantages of certain designs and parts of motor-cars. It was only the other week that he suggested that tube ignition offered an economical method of boiling kettles and cooking chops. In his latest contribution he discusses the question of bodies for motor-cars and remarks that "the *vis-a-vis* has but one advantage, and that only when not more than two passengers are travelling; and it is that by placing a box or board between the seats on the near side, one is permitted to lay one's weary body to rest with one's head upon the back seat and one's feet upon the front. The steering pillar unfortunately necessitates the other occupant remaining in a sitting posture, but exchanges might be effected, and thus the woeful weariness of breakdowns might be greatly solaced, or, should both parties consent, there would be nothing to prevent the non-driver from travelling in this position, which could not fail to be very soothing after a long day's journey, or even when returning home after

club house for a run to some suburban resort for dinner the scorched were many and the scorching was hot. So a reversal of the procedure was tried—the members made for the suburban resort in their own way and having partaken of dinner drove back in company to the club house. Not wishing to disturb a well served dinner, speed was sacrificed to comfort and the difference in pace has been ascribed to the fact that the automobilists were more contented after dinner than before.

More Education Wanted.

THE Reading Automobile Club has done much to educate the people of Berkshire with regard to the automobile, but its work is not yet finished. There is a writer on the local *Mercury* whose education in motor-car matters is singularly incomplete. He declares that such vehicles are "still nothing but a toy in the households of semi-civilised princes," and desires a special rule for every county limiting the speed of cars in that particular area. At the same time he recognises that the automobile is bound to advance; but apparently he is willing to join the crowd that is anxious to hinder its progress. Still "the toy in the households of semi-civilised princes" will prevail.

Cars for Every-body.

WITHIN five minutes of writing the foregoing we were reading a sanguine anticipation of the future in the column of an American contemporary, by Mr. E. C. Stearns, who believes that in a very few years every family of moderate means will have its own motor-vehicle. There is certainly no reason why such should not be the case, and we have recently heard of three gentlemen in a London suburb co-operating for the purpose of acquiring an automobile for their joint use. Professional men are rapidly being accustomed to the motor-vehicle, and the middle classes will establish a great demand for motor-vehicles in the near future.

"C.B.'s" Horror.

WE hope it is not the fact that many of the leading automobilists in the House of Commons sit on the opposite benches that causes Sir Henry Campbell-Bannerman, M.P., to look with such dismay on the popularity of the motor-car. Opening a bazaar at Dundee on Saturday, he acknowledged he "looked forward with horror to the time when we should be eaten up and driven out of all the streets and roads by these artificial methods of conveyance." There is no cause for alarm. The horse and Shanks's pony will still remain on the road; though lightened of many a burden by the vehicle which Sir Henry C.B. regards with such horror. But, as we have already suggested, we hope his objection is not a political one due partly to the fact that his leading antagonist in the Commons is an automobilist on the road.

The Motor's Twenty equal to the Horse's Seven.

MR. G. E. WRIGHT, a practical engineer residing at Blackheath, says he has had some experience in the question of the brake power for vehicles, and has ascertained that, striking a rough average, a motor-car running at twenty miles an hour can be brought to rest in as short a distance as a horse-drawn vehicle running at seven miles an hour. It must be acknowledged that the mechanically-propelled vehicle has thus an enormous advantage over the horse-drawn. This is a point that cannot be too frequently recalled, for so many people appear to vainly imagine that it is the high rate of speed which constitutes the danger of vehicles.

Tractors for Military Purposes.

ON another page we publish full particulars of a further series of trials shortly to be taken in hand by the War Office Committee on Mechanical Traction, viz., with tractors capable of hauling a gross load of twenty-five tons. The conditions that will be considered in awarding the three prizes offered will be the prime cost, economy in working and maintenance, ease of steering and manipulation, simplicity of design, which shall enable repairs to be executed in a minimum of time, absence of noise, vibration, smoke, or visible vapour, immunity from damage by mud or dust, and capability of working with fuels varying in description and quality.

Advanced Prices in America.

MANUFACTURERS of automobiles in the United States have lately advanced their prices, and it is thought that this step will do something for the real interests of the industry. There has been a tendency in the States to "cut prices" rather low, with the result that quality has sometimes been sacrificed so that a large sale could be sustained. The lack of wisdom in such a policy appears to have dawned upon the leading firms, with the result that the newer machines will contain many improvements, both in design and workmanship. Quality and price must go hand in hand, and with the better rates that now seem to be obtainable the standard aimed at by the American makers should be higher than heretofore.

WAKE UP, ENGLAND!

LAST year the Paris-Berlin race attracted a great deal of attention all over the sporting world, and five different nations competed in it. First of all, and away ahead of all, came France, with her Mors, Panhards, Renaults, etc., etc. Germany came second a long way behind with the Mercedes; Belgium followed with Gobron-Brillié and Deschamps; Austria sent two or three vehicles, which arrived too late; and England was a bad last with a solitary Napier, though Mr. S. F. Edge and the Napier Company deserve all credit for the efforts they made. Of sportsmen *chauffeurs* in the race England was behindhand, being represented only by Messrs. Rolls, Edge, and Jarrott, and the only thing to put to England's credit was the purchase by an Englishman (Captain Laycock) of the winning car.

When we come to think of the sums of money the British public have subscribed to companies for the purchase of French patents or licences for use of French patents, and of the large sums of actual cash that have crossed the Channel to the Continent in payment for these patents, and of the equally large sums which are being poured into the coffers of Panhard, Mors, Renault, Darracq, etc., it gives food for reflection, and this reflection has decided me to bring the subject forward, and make an effort to set the "ball a-rolling," in order to rouse such a public feeling amongst British automobilists and capitalists, that a term may be set to this state of affairs, and a start made towards bringing to our shores at least a fair share of the new industry.

The contemplated Paris-Vienna race gives me a good text. It is not much more than a week since the idea was started, and there are nearly a hundred entries, amongst which appear Mors, Panhard, Darracq, Decauville, Peugeot, Mercedes, Deschamps, Dietrich Gobron-Brillié (Belgium). Amongst the names of the *chauffeurs* I am pleased to see those of Messrs. Rolls, Jarrott, and Edge. The last name I am particularly glad to note, for I suppose and hope that it means that the Napier Company are going to build a racer. As the rules of the A.C.F. limit the weight to 1,000 kilos. (one ton), Mr. Napier will be put on his mettle, and turn his attention to maximum power with minimum weight, and if he sets his brains and energy to solve this problem, I think he will take some beating. One car is, however, no good in such a race, and there should be six of them. Are there not sportsmen in England rich enough to order twenty British cars to compete, and are there no public-spirited men in England to found a prize important enough to encourage the British manufacturers to compete?

It may be answered that our absurd speed limit and the shortsighted way in which our country magistrates are dispensing the law make it impossible to test racing cars in England, but plenty of localities are to be found where the police are not set to trap motorists, and where judicious drivers, who will conscientiously slow down through agglomerations, may "let her go" in the open; and what would be a better object lesson to our legislators than an English contingent successful in an international motor-car race? The public in England would greet such a success with enthusiasm. My object is to open up the question, and I would ask motorists to let their views be heard, and if there is unanimity, we shall see what can be done while there is yet time, in order to bring to our shores a trade which we need.

"AUTOMAN."

PRINCE NILKOFF, the Russian Minister of Roads and Communications, has lately made a signal personal test of the efficiency of his own department. Having to attend the jubilee commemorations at Tiflis of Georgia's annexation to Russia, the Prince did the entire journey by motor-car. The distance from Vladikaukus, his starting-point, was 444 miles, and the route was along the Georgian military road, which is both mountainous and rough.

FLOTSAM AND JETSAM.

By "FLANEUR."

"THIS is too hot!" was a famous ejaculation in the baccarat *cause célèbre* of Tranby Croft memory. Within the last few days the automobilist, at least, has had numerous incentives to repeat the phrase, with something unwontedly strong in the way of epithetic additions. The policeman who swore to seeing a Croydon automobilist pass at 153 miles an hour was quite enough in the way of sensation for one week, but equally calculated to take one's breath away was the brazen attempt at Kingston to drive the light steam car off the road, for that is virtually what the efforts of Mr. Thomas Weeding Weeding had in view. In the whole course of my fifteen years' experience as a journalist I have never seen anything so impudent as this prosecution under an old Act on the ground that the Locomobile concerned was not complying with the terms of the Act of 1896. Even the Kingston Bench was compelled to recognise the undignified figure which their prosecuting colleague cut, and dismissed the summonses.

A HUMOROUS incident in the course of the hearing deserves to be recorded in passing. Mr. Thomas Weeding Weeding was declaiming with all the vigour of the heavy villain of transpontine melodrama when Mr. Staplee Firth, who was defending for the Motor Union, enquired with a similar flourish of the arm and an exactly imitative amount of vocal exaggeration, "Why all this ter-r-rible ter-r-ragedy?" The effect was instantaneous; the whole court was convulsed with laughter, in which the magistrates themselves could not help but join.

I DON'T know whether Mr. Claude Johnson repeated the ejaculation with which I began this page when he was fined the vindictive sum of £20 by the magistrates at Thirsk, but I do know that I said something of that kind when I read the report of the case on Tuesday. There is not the shade of a shadow of doubt that the popular secretary of the Automobile Club was made a victim to the prejudices of the horse-breeding magistrates, and the fact that a fast car had passed over the same road not long before. Had the Bench not been absolutely blinded by anti-automobilist hostility, they would have gauged at once the probabilities in the case when on the one side they had a driver of easily demonstrable experience and, on the other, a mere lad in charge of a powerful and untrained horse.

WHEN a driver has come 200 miles to defend his case rather than let judgment go by default, and when he has shown that he did everything in his power to avert an accident for which he was in no way responsible, it certainly is "too hot" that the magistrates should coolly tell him that he was "mistaken in thinking that he had stopped" when called upon to do so, and fine him £20 and costs. Mistaken! As if a man did not know whether he had put down his clutch pedal, applied the brake, and put the speed-change lever in the "neutral" notch. When you have gone through these three processes you ought to have a tolerably clear impression as to whether you have stopped the car or not; but the Solons of Thirsk, of course, knew far better than their victim. He had only the facts on his side; they had imagination and prejudice, which are far more potent.

I BELIEVE it was Horace who wrote *Dulce est desipere in loco*, which may be interpreted as "It is pleasant to play the fool on occasion." Judged by their recent utterances in public, certain of our men of (alleged) light and leading have laid this apothegm to heart. But they joke with obvious "deeficulty," and the shock to their constitutions is palpable. Sir H. Campbell-Bannerman, for example, in his attempts at persiflage, expressed a *penchant* for "two old-fashioned animals—the horse, and another strange animal called Shanks's mare." He further spoke, in terms that were disparaging, of the modern motor-car. Where "Shanks, his mare" comes in opposition to the motor-car

is a mystery. The motor vehicle has merely to be compared with that drawn by the horse; perambulation is in a class apart.

YET we find the *Echo*, even more devoid of humour than the Liberal Leader, gravely patting him on the back for his reference above quoted. "It would be a great calamity," remarks the journal named, "if Shanks's mare were driven off the roads by the laziness bred of the motor-car, and we hardly think that the exhilarating vibration of gas explosions under a seat affords a good substitute for walking exercise on a good country road." Then, with a fine perversion of metaphor, it adds, "Shanks's mare has been *trotting* since the days of Adam; may it continue to *trot* till the crack of doom." Will the *Echo* man be good enough to explain where he has found his cars that explode gas under a seat; how motor-cars are likely to destroy walking, unless they can be produced at about a penny apiece; and by what miracle a mare can walk and trot at the same moment? The whole paragraph is a fine illustration of that combined ignorance and anti-motor prejudice which defaces so many professedly "progressive" organs. May I remind you, oh *confrère* of the *Echo*, that conservatism is not always spelt with a capital C?

ANOTHER professedly enlightened journal, the *Westminster Gazette*, invariably inserts without sub-editing the hostile and ill-informed reflections of its financial critic on automobile matters. Were he to confine himself to his proper sphere one would have nothing more to complain of than his obvious bias against the automobile industry; but on every possible occasion he goes out of his way to assail their mechanical efficiency and otherwise speak prejudicially of cars and their drivers alike. The irresistible deduction to be drawn from a perusal of this gentleman's animadversions is that he derived his impressions of automobiles and automobilism in November, 1896, and that from that time to this he has closed his eyes to every improvement in the situation, both commercial and mechanical.

So attractive will the Austrian portion of the Paris-Vienna race of 1902 inevitably be, that a large entry in the tourists' section may confidently be expected. Already several members of the Automobile Club have entered for this event, in the persons of Messrs. Frank Butler, T. B. Browne, J. Clifford, and H. Loeffler. If at this early stage the race attracts a following, the muster ere the closing day will undoubtedly be very large.

THE Bexhill Motor Company has issued a revised list of fares at an all-round reduction; the most popular change being the introduction of a penny fare for short and intermediate distances.

A SET of cycle parts specially designed for the building up of motor-bicycles is about to be put on the market by Messrs. Perry & Co., Ltd., of Birmingham.

THE Brighton and Sussex Motor Car and General Engineering Works, 123, Gloucester Road, Brighton, inform us that they are prepared at short notice to convert existing wire wheels of motor-cars to take New York tires.

THE Motor Power Company, Ltd., have made arrangements whereby customers can be supplied with Gladiator or Napier motor-cars on payment of equal monthly instalments extended over twelve months. By this means, on payment of a quarter of the amount down, the purchaser can obtain a Gladiator from £12 to £18 a month, or a Napier from £48 per month.

WE understand that the lorry entered by Messrs. George F. Milnes & Co., Ltd., for the forthcoming War Office trials will comprise some special features and departures, especially with regard to the motor. The lorry has been built by the Motor-fahrzeug und Motorenfabrik, of Berlin, in accordance with the specification of Messrs. Simms & Co., and will be equipped with a 20 to 25 b.h.p. four-cylinder motor on the Daimler principle. The engine is of the most recent type, and will be able to burn either common petroleum, benzine, or alcohol, fired by the Simms-Bosch magneto-electric ignition.

CORRESPONDENCE.

THE GLASGOW TRIALS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—As one rather disgusted with the complaints of unsuccessful competitors and their friends after the result of the Glasgow Trials, I should like to congratulate the judges on their labours, and think the best thanks of motorists are due to them for discharging a very difficult duty. I have had much to do with some of the light voiturettes on the market, and venture to assert that many motorists, especially when touring, very soon grow tired of them. Needless to say, many light voiturettes might run not only for a week but for a month without a stop, and thus gain full marks; but what about the condition of the mechanism, bearings, and other vital parts after a year's hard work? No doubt the judges in awarding the medals have taken full cognizance of this, and therefore makers of the "feather-weights" blaspheme instead of taking their beating like men. It is childish to see a maker claiming that his machine is the best under nearly all the headings from A to V.

In conclusion, I would advise would-be motorists to avoid the cars that are puffed *ad nauseam*. The best cars do not need it. Experienced motorists know that design and fine workmanship will score in the long run, and therefore I think that a system of marks deducted for stops, which may be for trifling adjustments, very deceptive. I know of one car that did not stop; but what about the condition of the steering gear at the end of the trials? Only the judges could enlighten upon such points.
—Yours faithfully, ENTHUSIAST.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—When first I heard of the Glasgow Reliability Trials and the rules under which they were supposed to have been carried out, I, amongst many others, thought that at last prospective buyers of motor-cars would have the question decided, viz., "Which is the best car for my money." In my opinion this question would have been settled, had the awards been given in accordance with the original rules, by giving one prize in each class to the car gaining the highest number of marks and also taking into consideration the numerous other points mentioned as conducive to a thoroughly reliable machine.

But as the case stands now one is in just as big a quandary as ever, for in Section 1, Class A, instead of one prize we have four, viz., two gold medals and two silver. One gold medal goes to the Wolseley, which for marks gained, hill climbing capability, and weight per passenger carried was apparently a long way behind several other cars entered. The other gold medal goes to the Locomobile, the principal reason given for the award being that it was quiet and the only "steamer" competing. One silver medal goes to the New Orleans, which for marks gained (as per original rules), hill climbing capability, and weight in proportion to passengers carried was streets ahead of the winner of the gold medal in the—may I term it—"explosive engine class." The other silver medal is given to a De Dion of the type which I understand the makers are now abandoning in favour of one practically identical with the New Orleans. I ask you, Sir, how can anyone from these awards come to a conclusion as to which is the best car to buy?

Having frequently driven a New Orleans, as have also many of my friends, with the greatest satisfaction, I naturally and openly stick up for that car. I consider, too, that the car should have been returned the absolute winner on its marks gained, especially being by far the most up-to-date car compared with the Wolseley and De Dion, not that I would say anything against either, being quite an amateur.—Yours faithfully, E. G. R.

THE SURREY POLICE AND MOTORISTS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—At a time when the recent prosecutions at Reigate are occupying so much attention, it may interest your readers

to hear of the unusual activity of the police in other parts of Surrey. The other Sunday I was a passenger on a 9 h.p. Napier car, and during a sixty-mile run I had opportunities of observing much that surprised me. Between Ripley and Guildford, at intervals of about a mile, policemen were observed near the road-side, a small gathering of rustics usually assisting us to locate each post. We drifted by on our second speed and escaped with nothing worse than the scrutiny of the officers—one of whom had a cyclist in attendance, as if for purposes of pursuit. On our return journey in the afternoon these policemen were still on duty. Shortly before Godalming was entered, two plain clothes men, holding watches and posted about 200 yards apart, were observed to consult their timekeepers as we passed. Immediately after, a constable in uniform walked out into the middle of the road and raised both hands for us to stop. Our car was drifting very slowly by this time, and, owing to the temporary absence of mind of our driver, we failed to pull up and glean the results of the timing test. We pursued our way to the summit of the Hind Head without further incident, but on our return journey, *via* the Hog's Back, we again became conscious of police attention. At three or four points between Farnham and Guildford uniformed policemen were posted, but we observed no attempt at timing and were not spoken to. One constable was observed studying the *flora* of the district behind a hedge.

Very few cars were sighted during the day, and the motor-cyclists passed were all proceeding at reasonable speeds. Our own transit, thanks to the prudence and skill of our driver, was unattended by the smallest injury or embarrassment to any of the other road users encountered, and it certainly seemed to us that the police must have spent a very dull and unprofitable day.—Yours faithfully,

C. W. HARTUNG.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I have read a great deal recently in reference to what one might almost term persecution of automobilists and cyclists by the police, but on Sunday last on a Surrey main road I actually saw action taken by the police of a most extraordinary nature. When travelling slowly along the road I saw approaching in the opposite direction a small voiturette, coming so slowly on a good level road that I remarked that I thought there was something the matter with it. Just before it reached me two men in ordinary clothes stepped off the footpath and held up their hands for it to stop. The men in the car, I think, did not notice them and were still proceeding slowly when one of these men drew a whistle from his pocket and blew a shrill blast from it, with the result that a constable in uniform came from out of a barn a little further down the road, where he had evidently been hiding, and walked up towards the voiturette, which had immediately stopped on hearing the whistle.

Wondering what the trouble could be I got down off my car and went back some few yards from where I had stopped to find out. The two men dressed as civilians stated that they were constables, and that they wanted the names and addresses of the occupants of the voiturette for going over twenty miles per hour. I immediately came forward and told them that I would be very pleased to act as a witness on their behalf, as they were not doing eight miles per hour. Immediately on my saying this the man in plain clothes, who afterwards turned out to be a sergeant, turned upon me and said he would summons me for leaving my car unattended. Luckily, however, three or four other motor carriages were behind mine, the whole of their occupants amounting altogether to some sixteen people, who had seen the whole occurrence and alighted from their automobiles to offer their names and addresses as witnesses.

The disguised sergeant completely lost his temper and insisted upon having the names and addresses of the drivers of the other motor-cars on a charge of leaving their cars unattended, although in most cases there were ladies sitting in them, and the cars were drawn up closely one behind the other, some in front and others behind where the police were

standing. The names were given in due course and it is to be hoped that the sergeant in question will proceed by bringing the matter into court, when I think an extraordinary state of things will be revealed, of men presumably on duty to assist the public trumping up charges against anyone daring to come forward to see justice done to two complete strangers. There must really be something beneath this action, which savours of persecution; it cannot be possible that these men are acting on their own initiative; they must be receiving their instructions from some higher authority.—Yours truly,

S. F. EDGE.

THE AERO CLUB OF GREAT BRITAIN AND IRELAND.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Seeing what our enthusiastic and enterprising friends across the Channel are doing reminds me that I should wait no longer in carrying out my idea of forming "The Aero Club of Great Britain and Ireland," for the purpose of encouraging and developing aerial navigation in this country. The formation of this new club I had in contemplation a long time ago, and having carefully prepared the preliminary steps for its foundation, I shall be able to shortly make some further announcements in your valuable journal concerning the powerful committee that I am at the present moment constituting, as well as other important matters concerning the new club, such as rules, inaugural meeting, premises, etc. I have not the slightest doubt that the new club will soon bring about a different state of things with regard to my "Pet" problem, one that I have privately devoted much time to during the last eleven years, for I am convinced that it only wants a club or society on modern lines to bring together the many British enthusiasts and those interested generally in aerial navigation to advance in and perhaps to ultimately help solving this great problem.

At the inaugural meeting it will also be decided which title will be adopted, the above, or "The Aero Club of the British Empire," "The Aero Club of the United Kingdom," "The Aeronautical Club of Great Britain and Ireland," "The Aeronautical Club of the United Kingdom," or, short, "The Aero Club."—Yours faithfully,

FREDERICK R. SIMMS.

[As will be seen from our "Comments" columns, an Aero Club of the United Kingdom has this week been formally registered.—ED. M.-C. J.]

SPARE PARTS PROMPTLY WANTED.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I see in the last issue of the *Journal* another letter about spare parts. The only way at present to stop these disastrous delays is, when buying a car, only to buy it conditional to the makers undertaking to supply spare parts within a week at the outside. Makers who will not guarantee this should be left alone. I think all must agree that where £200 to £300 is put down, one expects a car to run for more than half a season, and not to be rendered useless for weeks at a stretch for want of a few shilling articles.—Yours truly,

AUGUSTUS KENT.

OVER THE AUSTRIAN ALPS BY MOTOR-CAR.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I have just noticed in your issue of the 5th October a letter, entitled "Over the Austrian Alps," from Mr. C. N. Williamson, and hasten to give you some information concerning the matter. Lajos is only a Hungarian Christian name (equals Lewis), the family name being Lukacsy. Count Gyulai was not the first motorist to take an automobile over the Stelvio. In his article it is only said that he was the first to reach the summit of the Karersee Pass in the Dolomites. The motor-car which Mr. Williamson saw on September 4th, 1899, was a De Dietrich (Amedée Bollée,) belonging to General-Consul Alexander Singer,

who, attended by Dr. Suchanek, was the first to climb the summit of the Stelvio.—Yours truly,
Vienna.

FELIX STERNE.

WITH regard to the comments on Michelin tires in a recent issue, the Clipper Pneumatic Tyre Company, Ltd., write:—"We have read the correspondence published by Mr. R. E. Phillips in reference to the Dunlop Company. As a matter of fact, the whole responsibility of dealing with Michelin tires rests with this company and not with the Dunlop Company. The statement made by Mr. Phillips that he endeavoured to purchase properly licensed tires from us in England, and that we informed him in writing that we had not the required size in stock, is untrue. The only communication which this company has received from Mr. Phillips was addressed to its French agents, and this was a request to license a set of infringing tires already fitted to his car. The fullest enquiry, both at our English and French branches, has failed to substantiate Mr. Phillips' statement that he endeavoured to obtain licensed tires, and Mr. Phillips has only himself to blame if he has suffered inconvenience in consequence, a point upon which we beg leave to express some doubt.

"P. P." writes:—"Sir,—I have a motor-car which is at present fitted with tube ignition, and I wish to have it changed to electric ignition. Will some of your readers be kind enough to inform me how to do it myself, or tell me what I ought to pay to have it done by a competent person."

MR. R. E. PHILLIPS writes: "I shall esteem it a favour if you will allow me through the publicity of your *Journal* to thank the many automobilists who have sent in alterations, corrections, and additions for the next edition to *The Automobilists' Guide*, as I have not time to thank them all personally."

THE Trafford Motor Company, which is making a speciality of carriage bodies and wheels for motor-cars, has removed to larger premises in Christ Church Square, Hulme, Manchester.

THE way in which the French automobile trade is developing is observable in the returns for the first eight months of the year, these showing that the value of vehicles exported was £391,160, as against £223,360 in the similar period of 1900.

IN addition to Cannstatt Daimlers, and the F. N. cars, the Motor Traction Company, Ltd., of Walnut Tree Walk, Kennington, S.E., have secured the agency for the Boyer cars, which are made in several sizes, fitted with engines of 7, 9, and 12 h.p.

WE learn that Messrs. F. J. and H. C. Rodgers, of Sayer Street, New Kent Road, S.E., makers of the Dreadnought cycles, have taken up the manufacture of motor-bicycles on the Minerva system.

PETROL and spare parts for motor-cars are now being stocked by Messrs. Drewry and Sons, of the Cycle and Motor Works, Herne Hill, S.E. The firm are also able to carry out any necessary repairs.

MESSRS. HIGGS AND FOX have started in business as repairers of motor-cars of all kinds. Their present address is 2, Portland Terrace, Regent's Park, N.W., but they will shortly open new premises where storage accommodation for a number of cars will be available.

MR. P. KEEN, of 63, High Street, Putney, has special facilities for promptly repairing motor-cars of every type—petrol, steam, or electric, and guarantees satisfaction. Sundries and broken parts can usually be replaced without the delay often caused by the necessity of obtaining these in France.

MR. ARTHUR JULIAN, manager of the Portsmouth and Gosport Motors, Limited, writing from 9, Grand Parade, Portsmouth, informs us that he has laid in a stock of spare parts and sundries for all types of cars which are likely to join in the run to Southsea on the 16th inst. He is also making full arrangements for a good staff of competent men to be in attendance for all kinds of repairs, and arranging for a good supply of both Carless Capel's petrol and Pratt's motor spirit. The company will have temporary premises at Broad Street, also a few men at the Drill Hall for repairs.

THE "GLADIATOR" LIGHT CAR.



OUR illustration shows the 1902 model of the Gladiator light car fitted with detachable glass front, canopy, and storm or dust curtains. It is, of course, obvious that the curtains all roll up at the sides if desired.

The car is driven by an Aster single-cylinder motor, developing $6\frac{1}{2}$ h.p. The cylinder is water cooled, the water circulation being ensured by a rotary pump driven off the flywheel. The water tank, which is carried out of sight at the back of the carriage, holds about three gallons; efficient radiators are also provided. The ignition is electrical, being generated by accumulators and an induction coil of great power. The changes of speed are effected by the well-known Panhard type of gearing, giving three changes of speed and a reversing gear, this combining a good speed on the level with very good hill-climbing powers on the lower gears. As a matter of fact, the Motor Power Co. claim that they have not yet found a hill which the car with four persons up will not climb. The petrol reservoir, which is carried under the driver's seat, holds three gallons, which is



sufficient for a run of seventy-five miles. There are two distinct sets of brakes, one being actuated by a hand lever and acting upon the large drums on the hubs of the rear wheels, and the other being actuated by a pedal and acting on a large drum on the countershaft. The rear road wheels are thirty inches in diameter and the front wheels twenty-six inches in diameter. The standard type of car is fitted with *tonneau* body, having accommodation for four persons. Complete, the vehicle weighs $10\frac{1}{2}$ cwt.

The Motor Power Company, Ltd., of 14, Regent Street, S.W., who are sole agents for the Gladiator cars in this country, have sent us a copy of a very complete little hand-book they have just produced dealing with the vehicle, which should be found exceedingly useful by all who drive Gladiators.

WE hear that Mr. Mark Mayhew has entered for the Gaillon hill-climbing competition in France, and that he will drive his 50 h.p. Napier.

TO-DAY (Saturday) the English Motor Club will hold a run to Brighton, which all members are invited to attend. The run will really take the form of a meet at the destination, as no fixed route will be followed.

REFERRING to the Precision bicycle motor illustrated in our last issue, the Precision Motor Company inform us they have on hand some water-cooled engines of similar size, but with special base. These engines are to be coupled up to small dynamos, and are to be used for searchlights by our troops in South Africa.

CONTINENTAL NOTES.



BY "AUTOMAN."

A PUBLIC trial of automobiles using alcohol, organised by the Minister of Agriculture of the French Republic, took place on Monday, Tuesday, and Wednesday this week, during which time tests were made on a course of 100 kilometres, commencing at the Porte-Maillot, passing through Chatou and St. Germain and returning to Paris *via* Versailles. The trials rather resembled the recent Glasgow competition in that they included stoppages up hill and down hill, the maintenance of a moderate speed, and in that each carriage competing had an observer on board. The competition had for object the demonstration of the utilisation of alcohol, and included tests of the quantity of alcohol used per kilometre ton, the quality of running up hill, down hill, and on the level, the facility of starting and stopping, the absence of danger, and the quantity of water and grease necessary. Tests were also made of the construction and solidity of the cars. There were four classes, including—First: motor-cycles and light cars up to 250 kilos. Second: light cars from 250 kilos. to 650 kilos. Third: cars weighing more than 650 kilos; and fourth: delivery wagons. The speed allowed was twenty kilometres an hour in *agglomerations* and thirty kilometres an hour on the open road. It was optional to use either pure alcohol or alcohol of 75 per cent. or 50 per cent. carburation.

THE Criterium of motor-bicycles, organised by the *Auto-Velo* under the patronage of the A.C.F., took place at the Parc de Princes, near Paris, on Friday last week. The weather was most favourable and several thousand people assembled to witness the competition. There was only one race in which all the competitors started together, but there were two classes—first: motor-bicycles on which pedalling was allowed; second: motor-bicycles from which the pedals had been removed. There were thirty-two competitors and the winners were the following:—Without pedals, Cissac on a Chapelle bicycle, who accomplished the 100 kilometres in one hour thirty-four minutes twenty-five and one-fifth seconds, making a world's record. With pedals, Derny on a Lamaudiere and Labre bicycle, in two hours four minutes twenty-nine and two-fifth seconds. There was a third prize given for motor-cycles weighing less than thirty kilos., and it was gained by Deguichard on a Clement bicycle in two hours forty-four minutes seventeen and four-fifth seconds.

M. HENRI DEUTSCH is getting a very poor recompense for the public spirit and generosity which prompted him to encourage aerial navigation by offering a prize to the first man who should double the Eiffel Tower inside half an hour, and return to his starting place at the Aero Club. M. George Prade in the *Auto-Velo* gives a very clever and most amusing article in which he tells the history of the prize from the start and shows how at every step some section of the French Press has reviled M. Deutsch in the most unwarranted manner. First, by saying he was obtaining a cheap advertisement; then, that he only offered the money because he knew nobody could win it; again, that he was making a balloon to win it himself and that he had obtained a special petrol which would enable him to do so (M. Deutsch, as no doubt many of the readers of the *Journal* will know, is the chief refiner of petroleum in France). As soon as M. Santos Dumont had his first accident, M. Deutsch was treated almost as an assassin and so on, but to crown the whole edifice of these absurdities, I notice in the *Auto-Velo* an article from the pen of the Count Henri de la Vaulx, who has just come back from his courageous attempt to cross the Mediterranean in a balloon. The Count starts in to defend M. Deutsch and heads his article "An Act of Justice." His act of justice, however, brings to mind the old saying, "Preserve me from my friends," for the Count's argument resumes itself as follows: "M. Deutsch is a Jew and I am a Jew-hater, but when one of these Jews, contrary to the custom of his race, tries to do some good, why should we not proclaim it." How flattered M. Deutsch must feel!

M. SANTOS DUMONT is still the hero of the hour in France, and his movements are recorded as if he were an Emperor. According to the latest account, he is going to take his balloon to the Riviera, where he intends to attempt to cross the sea in it and land in Corsica. Even more ambitious designs are said to be in his head, and a more powerful machine is already talked about destined to attempt to cross the Atlantic Ocean.

THE entries continue to roll in for the Paris-Vienna Race, and I see that Mr. S. F. Edge has come up to the scratch. Mr. Jarrott seems to have taken a fresh entry, and Mr. Frank Butler is down as No. 91. All the well-known makers are represented, including Mors, Panhard, Peugeot, Dechamps, Jenatzy, Mercedes, De Dion-Bouton, Darracq, Gillet-Forest, Clement, Bardon, De Dietrich, Deauville, Gobron and Dekert.

THE site chosen for the Italian motordrome is in the Monticharia district, between the Brescia-Mantone tramway and the railway line from Milan to Venice. The Brescia Motodrome will thus be served by both rail and tram. The length of the course will be thirteen kilometres, and the radius of the smallest curve about 600 metres. A straight four kilometres will lead to the winning post. Buildings will consist of sheds, the middle one of which will serve as a *garage*. The two adjacent sheds will have accommodation for over 100 vehicles. Another shed will contain sufficient plant to repair twenty cars at the same time. Here quarters will also be found for the skilled mechanics who will always be in attendance, bath-rooms, etc. The petrol supply will be kept underground and at a safe distance from all buildings. Spectators will find accommodation on a grand stand near the winning post. A luxurious hotel and restaurant with covered terrace will also be conveniently situated.

HERE AND THERE.

AT a meeting of the Lincolnshire Automobile Club on Tuesday it was decided to hold a club run from Lincoln to Woodhall Spa to-day (Saturday).

UNDER the title of the Kingston Motor Express Company, a company has been formed at 9, St. James Road, Kingston-on-Thames, for the purpose of facilitating the delivery of trade parcels in that town and the surrounding districts.

THE Piccadilly-Putney motor-bus service, which opened with a single vehicle barely a month ago, is steadily increasing its rolling stock. There are now four motor-buses on the road, and further important developments are expected within the near future.

THE Committee of the French Automobile Club have decided to award a silver medal to Madame Gobron, wife of the well-known automobile constructor, and who was the only lady having made, as a *chouffeuse*, the whole journey from Paris to Berlin in the tourist section.

THE Clipper Pneumatic Tire Company, Ltd., ask us to mention that any member of the trade or public purchasing French cars can obtain licensed Clipper-Michelin tires from the French agents, the Societe Francaise des Cycles Clement et Gladiator, 33, Quai Michelet, Levallois, Paris.

SOME interest was aroused in the courtyard of the Hotel Cecil, Strand, W., on Wednesday, by the arrival of an elegant electric landaulette. A few minutes later it left the courtyard with a party of ladies and a gentleman. We noticed Mr. Still at the helm, so presume that the vehicle was one of those built on his system.

THE Wolverhampton and District Automobile Club completed its season's runs on the 26th ult. The club has steadily progressed, and now has a membership of about forty. A great item in its favour is that it has successfully demonstrated to the district police the reliability and easy control of cars in traffic, with the result that they are very favourably inclined towards the movement.

A NEW departure in steam vehicles is, we hear, likely to be introduced in a short time. A 10 h.p. double-acting compound engine of the launch type will be used, steam being generated by ordinary petroleum in a flash boiler. Simplicity of design and easy management are being aimed at, the work being carried out under the patents of a well-known engineer in the Midlands.

AT a meeting of the Association of Municipal Corporations last week, the town clerk of Harrogate moved:—"That this association is of opinion that one uniform series of bye-laws should be adopted in boroughs for regulating the driving of motor-cars, and that it be referred to the Law Committee to consider the question, and take all necessary steps to give effect thereto." The resolution was carried by a large majority.

LIZURD BERG, the Danish Socialist representative, protested, at a recent meeting of the Folkething, concerning the order sent to the local authorities at Fredensborg to take no cognisance of the speed at which King Edward drove his automobile during his recent visit. The Minister of Justice answered that the dispensation given to King Edward was merely what every foreign Prince would receive while on a visit to that country under the usual ex-territorial rights.

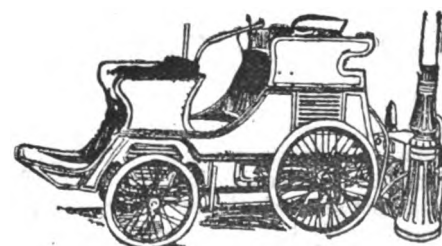
THE Motor Power Company, Limited, have just received from the works one of their 1902 model Napier cars. As there are many points of interest in the vehicle, they ask us to mention that they will be pleased to show this car at 14, Regent Street, S.W., to any of our readers whom it may interest. Attention is particularly drawn to the new governor, which has greatly simplified the governing gear, and at the same time added to its efficiency, and also reduced the amount of petrol used per mile.

IN the *English Illustrated Magazine* Mr. George A. Wade tells the story of the motor-car, and with the help of several familiar illustrations shows the prominence enjoyed by automobiles in the early days of the last century. Hancock, James and Dance, receive most notice in the article, very little being said about Gurney's carriage, which, for some time, plied regularly between Gloucester and Cheltenham, and no mention is made of the work of Murdoch, Ogle and Heaton. The reproductions of some old prints are interesting.

CALLING in at the depot of the United Motor Industries, Limited, of Holborn Viaduct, E.C., the other day we were shown an induction coil fitted with a new form of trembler. The feature of the new device is the provision of a small auxiliary coil spring to the trembler blade, resulting in the production of a more regular spark. The coil which we inspected, and to which the new trembler is fitted, is of the three terminal variety. Combined with the terminals are small springs, so that the connecting wires are firmly held and cannot be shaken out by any jolting due to uneven roads. That the new trembler possesses advantages over the ordinary form is indicated by its adoption by Messrs. Bassé and Michel, the well-known makers of induction coils, for use in connection with electrical ignition. We understand that the United Motor Industries are in a position to fit the new trembler to any Bassé and Michel coil.

DUNKLEY'S gas motor-car, of which an illustration is given herewith, is fitted with a twin-cylinder gas engine, working on an adaptation of the Otto principle, and with a small compressing pump. The engine is

claimed to drive the car at an average speed of sixteen miles with a consumption of 30 feet of gas per hour; and 30 cubic feet of gas will compress in the storage cylinders under the car a supply of 150 cubic feet of gas, sufficient for at least five hours' travelling. The car is fitted with two forward speeds and a reverse motion. The width of the vehicle is 36 inches over all, so that the car can pass through an ordinary doorway. We are promised a run on this car shortly.



A SPECIALLY powerful vehicle (24 h.p.) has been built by the Daimler Motor Company, Limited, for the Duke of Santo Mauro.

MOTOR-CARS were employed as the means of conveying voters to the polling stations at the municipal elections at Wolverhampton on Friday.

FOR some time past an electric delivery-van has been used by the Saxon postal authorities in Dresden, to obtain quicker delivery for the parcels post.

THE Kingsland Manufacturing Company, of 'Doweras' Buildings, Dalston, N., are about to put a new motor on the market suitable for motor-bicycles.

WE learn that an Aeronautical Institute and Club is in course of formation in London. Those interested are invited to communicate with Mr. L. Senecal, Hon. Sec., 14, Stayton Street, Chelsea.

THE French Chamber has voted urgency for a motion making it an offence punishable with from six days' to two months' imprisonment for the driver of an automobile causing an accident to attempt to make off.

WHILST a motor-car was being driven along Kennington Road, S.E., one day last week, one of the wheels came off, and the occupants, Mr. and Mrs. Plush, were thrown out. Mrs. Plush sustained a serious scalp wound, but her husband escaped with a severe shaking.

It has transpired that certain members of the burglar fraternity in Paris are making use of motor-cars in more than one part of the city. On Sunday last three of these gentlemen drew up in front of a well-known shop, and, having effected an entrance, carried off in their car about £100 worth of goods.

ACCORDING to *Commercial Intelligence* there is an immense future for the development of motor-van traffic in Italy. Ten days is the average time for goods by a slow train from Milan to Genoa, a distance of one hundred miles. Motor cars that could do the distance there and back in twenty-four hours would never lack a full load.

THE bridge over the River Nene at Sutton Bridge, connecting Lincolnshire and Norfolk, which is the joint property of the Great Northern and Midland Railways, has hitherto been subject to tolls in respect to ordinary road traffic. After long agitation the local authorities have agreed to pay £7,000 to the railway companies as compensation for freeing the bridge.

MR. E. A. GORTON, of Earlsdon Works, Coventry, is now making a speciality of motor repairs. This should be welcome news to the many users of Beeston tricycles and quads up and down the country. In 1896, when motoring was in its infancy, Mr. Gorton drove a 1½ h.p. Beeston tricycle from London to Brighton and arrived fifth, the only one of English make to arrive.

"ARE you de gemman dat said 'de hoss mus' go?' asked the coloured man. "I am," answered the man with the leather coat and a face mask, who was an enthusiast on the subject of mechanics. "Well, sub, I jes' desiahed to take de liberty o' say-in' dat I has de balkies' animal dat ever blocked a street, jes' aroun' de corner. I sho'ly would be much oblige ef you could come aroun' an' prove yoh words."—*Motor World*.

A CURIOUS accident occurred recently at Banchory, resulting in injury to John Eaton, a young engineer who was driving with others in a motor-car. The car had failed to work properly and Eaton had gone behind it with the intention of pushing it forward. While in the act of doing so the car suddenly moved backwards, knocking him with great force against an adjoining wall, between which and the step of the vehicle one of his legs was severely bruised at the knee.

AT a recent meeting of the Northfleet District Council the Surveyor called the attention of the Works Committee to the high speed at which motor-cars, plying between Gravesend and Northfleet, were driven along the streets opened up by the tram-

way company during the construction of their new line, and more especially round corners. The clerk was directed to caution the owners of the cars, and to request the Inspector of Police to keep them under observation.

THE largest automobile parade ever held in America started from Madison Square Garden, New York, at eleven o'clock on October 11. There were over one hundred electric motor-cars, carrying about three hundred and fifty persons. The parade was organised by Mr. H. Sanderson, president of the New York Electric Vehicle Company, as a compliment to the wives and friends of the American Street Railway delegates, then holding their annual meeting.

At the quarterly meeting of the Radnorshire County Council last week Mr. Hamer proposed that a resolution should be sent to the Local Government Board expressing the opinion that it was desirable that regulations should be made to more effectually control reckless motor traffic on the highways. At the suggestion of the vice-chairman a rider was added, "and to secure the competency and identity of the driver in charge thereof." The motion as amended was unanimously agreed to.

It is understood that the German military authorities are well satisfied with the work done by the automobiles during the recent manoeuvres. Seventeen cars were in use, and all worked well. In case of war a large number would be bought, or "commandeered," for the generals in command and their aides-de-camps. Less satisfaction is expressed concerning the steam-wagons used for the conveyance of commissariat and ammunition. The roads were very bad and the tests unusually severe.

At the monthly meeting of the Sherburn Rural District Council held at Scarborough last week, Sir C. Legard, Bart., moved a resolution to the effect that the Council were of opinion that all light locomotives should be registered for the purpose of identification, and should be numbered or otherwise marked, and that such expression of opinion should be sent to the Home Secretary and the Local Government Board with the opinion that regulations were desirable in this direction.

LA SOCIETE D'ETUDES DES MESSAGERIES AUTOMOBILES, of Tunis, recently finished a successful tour with one of its cars—a Panhard—from Sfax *via* El-Djem, Ksoursef, Melidia, and Moestaur to Soussa. In spite of the almost insurmountable difficulties of the route, which is nothing more than a camel track between El-Wjem and Ksoursef, the automobile made the journey in excellent time. From Melidia to Soussa (79 kilometres) the time occupied on a dark night with a defective light was two hours and forty minutes.

At a meeting of the Kingsclere Rural District Council, Sir Alexander Arbuthnot, after a discussion on the furious driving of motor-cars, moved, "That the Council recommend the desirability of enabling the magistrates to enforce the law by empowering them in aggravated cases to imprison the offender without the option of a fine." The motion was defeated by five votes to four. One of the members gave notice that he would at the next meeting move the appointment of a Committee to decide in what way the Council could best word a recommendation to the Local Government Board on the matter.

WE learn that Messrs. Dennis Bros., Limited, of Guildford, have commenced the erection of a three-storeyed factory which, when completed, will give them an additional working area of 14,000 superficial feet, and admit the employment of over 150 workmen. The new factory is already partly erected, and will be completed in time for next year's trading, it being the intention to use it solely for the manufacture of Speed-King motors. Special arrangements are being made for a coach-building department, in which every description of motor-car body will be turned out painted and upholstered. Messrs. Dennis have been experimenting for some time with a 12 h.p. double-cylinder four and six seated car of their own make, and, after numerous trials, they have decided to give this a prominent place among their productions for next year. They are also building a four-seated *tonneau* car fitted with an 8 h.p. genuine De Dion engine.

THE CRUSADE AGAINST UNREASONABLE PERSECUTION.

IN continuation of his communication to us last week upon this matter, Mr. Moffat Ford, of 168, Shaftesbury Avenue, writes us this week as follows:—

"I have now the pleasure of informing your readers, and the motoring and cycling public generally, that matters have so been arranged that the Brighton road, *via* Redhill and Horley, will be safe for motoring and cycling on Saturday and Sunday next. Last Saturday I succeeded in locating and photographing an ambush of police near Merstham, and I hope to be able to send you prints shortly, which I think your readers will find amusing and instructive. Moreover, our patrol car was the means of warning several motor-cars, and many more cyclists, of the bad nature of the road, whose drivers and riders, respectively, seemed to be duly grateful for the expense to them thus obviated. In conjunction with several automobile friends, therefore, I have inaugurated the 'Brighton Road Motor Patrol,' whose duty it will be for several weeks to keep watch and guard over the road between London and Brighton; whose cars will be distinguishable by a flag bearing the letters B.R.M.P., and whose officials may be distinguished by their red rosettes. They will also be furnished with a supply of smaller red flags or cards with which cyclists or motorists will be supplied upon a small payment. These red flags or cards will have on them a large white P, which naturally signifies 'Patrol,' and if, in the course of their journey, they would display this initial to passing cyclists and motorists, I have no doubt that the latter will understand its significance.

"I have said that the Brighton road will be safe, by which I mean that before arriving from either direction at parts of the road with bad surfaces, where driving at an excessive speed might be attended with unpleasant consequences, such as delay and subsequent expense, cyclists and motorists will observe the red flag of the Brighton Road Patrol Motor, whose officials will then signal to them to stop and will inform them of the nearest mile-stone to which the danger lies. For these services, a payment will be requested of 1s. for every cycle and 2s. 6d. for every motor car, for which a receipt will be given which will frank the recipient through the patrol at any other point of the road. Proper accounts will be kept of the items thus received, which will be laid before a committee at present in course of formation.

"It has been brought to my notice that the habit is increasing in country districts, of leaving horses attached to tradespeople's vehicles unattended in the roadway. Curiously enough, this is particularly noticeable in the town and vicinity of Reigate. The patrol last Saturday discovered several instances of this nature and forthwith secured the names and addresses of the offending parties, against whom summonses will be issued in

due course. The patrol next Saturday will be alive to the situation in this respect, and automobilists may be sure that such flagrant negligence as this will not be allowed to pass unobserved.

"The Brighton Road Motor Patrol will start from Shaftesbury Avenue sharp at eleven o'clock to-day (Saturday). There is still plenty of work to do for one or two more cars and cameras, and I should be delighted if any automobilists, who can spare the time on Saturday or Sunday, will turn up at that time and be prepared to accompany us."

THE M. M. C. 7 H.P. LIGHT CAR.

WE are able this week to reproduce drawings of the Motor Manufacturing Company's new light carriage which gained the highest number of marks in its class at the recent Glasgow Reliability Trials, and which is now being constructed in large numbers in anticipation of next season. Built

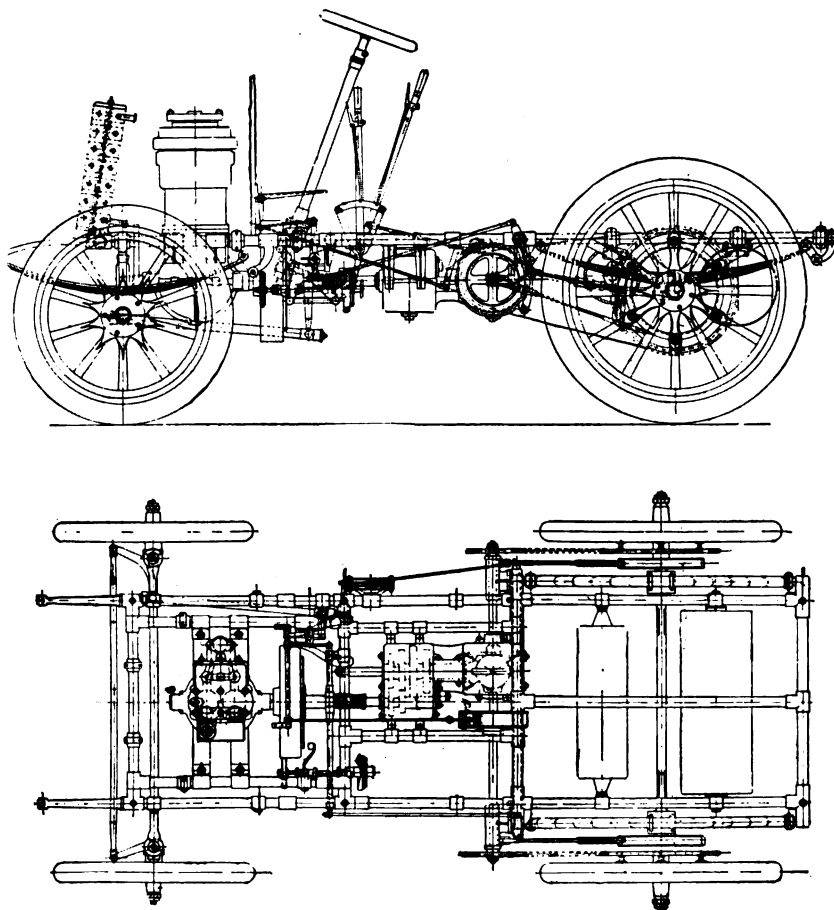
upon a tubular frame of special design, this carriage is provided with a two-cylinder governed vertical motor, constructed upon the Panhard system. The engine, developing 7 h.p. at a normal speed of 720 revolutions per minute, is carried under a bonnet in the fore-part of the frame. In front of it a radiator finds place, thus ensuring the perfect cooling of the circulating water. A rotary pump, provided with a spring balance to compensate vibration, and driven off the engine fly wheel, ensures efficient water circulation.

The motive power is transmitted to the rear or driving wheels by cog-gearing—the wheels of which are always in mesh—and roller chains. Three variations of speed and reverse are provided. Wooden road wheels with artillery hubs are fitted to the car, the rear wheels measuring 36 inches and the front 30 inches. All are fitted with Michelin-Clipper pneumatic tires. The worm and segment type of steering is employed. Band brakes are fitted to the sprocket

rings, and a similar brake acts upon the differential shaft. Practically any type of carriage body can be attached to the motor and frame, but the manufacturers themselves usually fit the *tonneau* and "Chariotee" designs. We understand that the Company have already received a very considerable number of orders for the new car.

DURING the month of August there were exported from the United States motor vehicles and parts thereof to the value of £11,260.

THE High Wycombe policeman who placed a scaffold pole across the roadway to impede the progress of passing automobilists has found an imitator in the United States. The village authorities of Winnelka, Ill., have placed a cable across the road to prevent the speed of automobiles exceeding nine miles an hour,



ELEVATION AND PLAN OF M. M. C. 7 H.P. LIGHT CAR.

THE LIVERPOOL SELF-PROPELLED TRAFFIC ASSOCIATION.



A MEETING of the Liverpool Self-propelled Traffic Association was held on Friday last week at the rooms of the Liverpool Chamber of Commerce, for the purpose of receiving the report of the Judges of the recent trials of heavy motor-vehicles. There was a large attendance, including Mr. Walter Long, President of the Local Government Board. The chair was occupied by Mr. G. H. Cox, who stated that the subject of motor traffic was very important, both locally and nationally. Abroad and in the United States transportation was very much cheaper, both by rail and water carriage, than in this country. One of the things we were suffering from in our international trade was the great cost of transportation in this little island. The chief obstacle to the adoption of motor-wagons was the three-ton tare limit. It had fallen to his lot to propose at the meetings of the Associated Chambers of Commerce a resolution in favour of the increase of tare. This was almost carried unanimously; in fact, there was never any discussion, nobody thinking it worth while to say anything against it. He hoped Mr. Long would remember that when he came to consider this subject.

Professor Hele Shaw, as one of the vice-presidents, then presented the Judges' report, which is referred to elsewhere in the present issue.

Mr. E. R. Calthrop also submitted a report, and remarked that the recent trials had made it possible to arrive at a practical and increasingly efficient solution of the question of cheapening the cost of goods carriage. It was now open to any large manufacturer or merchant to adopt mechanical haulage, about which there was no monopoly or close corporation. The railway companies themselves were beginning to use it, and the arbitrary regulations in force had no longer any rational support, although at the beginning of the movement they might have served a useful purpose.

Mr. Max Muspratt moved a vote of thanks to the Judges. In expressing regret at the absence of Mr. A. L. Jones, the Chairman, and Mr. Shrapnell Smith, the Hon. Secretary, he accounted for the non-appearance of the latter by saying that he was one of the chief witnesses in an important legal action in London. If "motorage" succeeded, as it must succeed, the country would owe a deep debt of gratitude to the Judges, who had done so much without recompense. Mr. Salisbury, in seconding, spoke of the vast labour bestowed on the trials by the Judges, and of the immense progress which had been made in motor-building. He had been instructed by the Postmaster-General to watch the trials, and as a result it was in contemplation to use in that district a motor of the pattern of one of these employed in the trials.

Mr. H. H. West, in acknowledging the vote on behalf of the Judges, said that the merits of the competitors in the trials vastly increased the Judges' labours, and had the motors not been separated in classes their difficulties in arriving at which was the best vehicle would have been even greater. Although the motor-wagon for heavy traffic could not be fully developed under the present state of the law, yet there were now produced vehicles which could render useful, efficient, and needed service, and which, by great skill and leaving off the last coat of paint, could be managed to be squeezed within the tare limit. If this movement was to accomplish what was expected, restrictions must be removed, except perhaps the limit of total load per unit of width of tread.

Mr. Long began his address by premising that in any remark he was about to make he expressed only his individual opinions, and did not speak as a member of the Government. The report of the Judges would form very valuable material in helping the Local Government Board to arrive at a just conclusion on the subject. Those present had all made up their minds and looked upon the question from an instructed point of view, and were keen advocates as to the wider limitations in the law which, they thought, were necessary in order that their industry might be successful. On that question, however, as on most others, people were not all of one mind; indeed, since he took up his present office he had received, and continued to receive, quite as many declarations against any change in the law as he had received in its favour. It was, therefore, idle to ignore the fact that there was considerable prejudice yet to be removed and of instruction still required. Changes in the law in the direction advocated by the association could not, therefore, be carried out without some considerable difficulty and without meeting with no inconsiderable opposition. To be perfectly frank with them, he did not think that the users of motor-vehicles, whether for trade purposes, or light ones for pleasure, were altogether free from blame. His own position in dealing with the question would be much easier were it not for the fact that there were constantly coming before him cases of the unwise use of some of the powers possessed by the new inventions. He most earnestly begged of the association to impress by all means in their power upon those using either heavy or light motors to do their utmost to remove such prejudices. He was himself one of those who firmly believed that this new form of traffic was not only a great and startling invention, but that it had come to stay, and the question he himself respectfully asked of those opposed to it, and who were afraid of its development, was, could they hope to stop by any means whatever the development of an industry so important to the national welfare? Were it only a question of increasing the tare, he did not think there would be much difficulty about it; but it was not only a question of tare or width of wheels, but whether they could in any legislation deal only with the heavier motor-cars. Those who used the lighter class of motors for pleasure purposes often found the restriction as to speed irksome in the greatest possible degree. They found the regulations interfering with what they regarded as a legitimate use of the machine, and he (Mr. Long) was bound

to say, from very careful examination of the subject, that the law as it now stood was calculated to make law breakers instead of law observers. The restriction of speed to so many miles an hour exposed the driver to be summoned on evidence that was not of an altogether satisfactory character, although it might be perfectly genuine. At the same time, from the point of view of those whose business it was to enforce the law, they had a difficulty of the most acute kind to exercise as to whether the pace was within or without the limit of the regulation. He was aware that any suggestion to remove regulations of that kind would meet at once with a storm of opposition in many quarters. It might, however, be possible to deal solely with the question of heavy traffic, keeping it by itself. Speaking with some reserve, he did not think there would be the same strong opposition to proposals for amending the law with regard to the heavier traffic as to the other. The Automobile Club had been extremely useful and very courteous in getting information for him on the subject, and as one who had been for some little time connected with Liverpool, he was proud that that city had been foremost in this work of promoting trials which had been of enormous benefit. The report of Mr. Willeocks, who attended the trials on behalf of the Local Government Board, was altogether satisfactory from their point of view. The report would give him additional material, and he assured them he would approach its consideration with an impartial mind, and one fully alive to the advantages of the new form of traffic to trade, commerce, and agriculture, and with a desire to remove restrictions where they could be done without injury and injustice to the general community.

Mr. Long was cordially thanked, on the proposition of Mr. A. F. Warr, M.P., and the proceedings concluded with a vote of thanks to the Chairman.

THE LIVERPOOL HEAVY MOTOR-VEHICLE TRIALS.



AFTER much work the judges of the Heavy Motor-Vehicle Trials, held by the Liverpool Self-Traffic Association, in June last, have at length completed their labours, and a copy of their report now lies before us. It is a most complete work, and extends to about 176 pages. The divisions of the report are:—(1) Origin of the Competition; (2) General Arrangements; (3) The Competing Vehicles; (4) Summary of Particulars; (5) General Account of the Trials; (6) Manœuvring Results; (7) Hill-climbing Records and Curves; (8) Summaries of Log-sheets; (9) Costs of Working; (10) Awards; (11) Conclusions. Practically every point is touched upon. The complete report, which can be obtained from Messrs. Winstanley and Watkins, of 16, Cable Street, Liverpool, at a cost of 10s. 6d., should prove a useful work of reference to all interested in heavy motor traffic, it being elaborately illustrated and full of very valuable information, calculations, and tables. We have already published the awards in respect of the Trials, so that it only remains for us to give the judges' "Conclusions," which are appended.

CONCLUSIONS.

Progress since 1898.—We observe a gradual and marked improvement in the construction and behaviour of Heavy Motor Traffic Vehicles since the first trials held three years earlier than the present competition, and we now consider that reliance may be placed upon the systems, to which gold medals have been awarded, for regular employment in general haulage operations where due care and supervision are exercised. We consider that the system to which a silver medal has been awarded will give satisfactory results, subject to the points named in connection with the awards.

Internal Combustion Engines.—The two light vehicles propelled by internal combustion engines using petroleum spirit (0.680 sp. gr.) are the first examples of this type which have taken part in the Liverpool trials. They behaved satisfactorily in all respects, and their chief drawback is the heavy cost of fuel per ton-mile compared with that of solid fuel in a steam propelled vehicle. But where ability to travel considerable distances at average speeds of from six to eight miles an hour, with loads not exceeding two tons, is a factor in determining the motive power to be adopted, the higher cost of fuel may be more than compensated for. These vehicles were not seen to the best advantage during the trials, as they were held back at intermediate depots to let the heavier vehicles catch up. When internal combustion engines can use ordinary mineral oil, petroleum or paraffin, under the varying conditions imposed by road locomotion, without creating a nuisance, their wide adoption is assured, because the cost of fuel will then come within the range of commercial conditions for road transport.

Fuel.—Solid fuel was used by the six steam vehicles which went through the competition. The gas coke supplied to the Association proved very soft and contained fourteen per cent. of ash. Its low quality and the crumbling which occurred on the runs must be taken into account in conjunction with the recorded consumptions.

Town Haulage.—No risk of fire need attach to a motor-vehicle by reason of discharges from the fire by the funnel, as the effective baffling of sparks, small cinders, and dust, has been accomplished without interference with combustion. No nuisance need arise from the blowing-off of steam, as the firing is under control while waiting for a load or while standing from other causes.

Distance Haulage.—The performance in ton-miles per working day depends very largely on the facility with which loading and unloading can be carried out. In good weather a motor-vehicle can average five miles an hour on the road which, in a shift of twelve hours, leaves four hours for meals and the collection and delivery of goods, with a journey of forty miles between the terminal points. In wet weather, and during

portions of the winter, it will be advisable to reduce the speed or load according to circumstances. During the trials, voluntary delays occurred at, and late departures were made from, the starting-points in order that the competing vehicles might be seen and examined by business men during business hours. We are of opinion that the three components of transport work, viz., collection, conveyance, and delivery, may generally, where the total mileage does not exceed forty-five miles, be completed within twelve hours.

Maintenance.—The standardising of construction has rendered maintenance a less difficult matter since the 1898 trials took place, as users can stock spare parts or obtain immediate delivery of them from the builders. Renewals can be effected without delay and without laying up the vehicle, while work proceeds on the making and fitting of the worn or defective parts of the mechanism. Improvements in the methods of suspension, e.g., the Coulthard spherical bearing, have reduced the strains and twisting movements. Such contrivances will contribute to a reduction in the cost of upkeep. It is probable that carelessness on the part of drivers, particularly in running the water low in the boilers when climbing long hills, with resulting damage to joints and tubes, will be one of the most serious factors in the cost of maintenance and one not easily estimated. There is no apparent reason why automatic arrangements should not be made to prevent damage arising from this cause, a cause which does not exist in the case of boilers of the "flash" type. Taking into consideration the imperfections of common roads, and the fact that users will take advantage of any structural improvements in the vehicles by working them harder than before, we think it will be necessary, apart from accidents of an exceptional nature, to allow not less than £75 per annum per vehicle for repairs and adjustments, when working a single shift of twelve hours per day, even where the mileage is regulated with discrimination according to the roads travelled over. We note with satisfaction the attention which has been paid to our recommendations of 1899 in respect of lock-nuts, cotters, collars, split-pins, and the effective keying of wheels and pinions, and the improvements in this respect account for the absence of annoying minor accidents which were so noticeable in the previous competitions.

Manœuvring.—The fact that a motor-vehicle can travel backwards with great facility will prove of considerable advantage for entering and leaving many loading-ways, as compared with a horse-drawn vehicle, the capacity of which for backing and manœuvring is limited by the strength of the shaft horse and the skill of the driver in securing the leverage obtained by moving the fore-carriage about one wheel as a centre. The vehicles to which medals were awarded, particularly the one which took up its position in the embayment in one movement, excelled in performance those competing in 1899. They are certainly "capable of going anywhere that a horse-drawn vehicle carrying the same load is ordinarily required to go, and of being placed in the same positions and withdrawn therefrom without external assistance."

Hill-climbing.—The tests at Everton confirmed the results of 1899, viz., ability to start and stop, both up and down hill, on a gradient (set pavement) of 1 in 9, with the improvement that every vehicle possessed sufficient adhesion to start promptly from rest, laden or unladen. Short lengths of road as steep as 1 in 8 were included in the distance runs on two days, and were climbed without difficulty fully laden.

Control.—The powers of control possessed by the driver of a motor-vehicle are particularly evident in manœuvring, and on hills, and are superior to those exhibited by the best types of horse-drawn vehicles. In descending steep hills, the normal speed can be maintained without locking a wheel or using a slipper.

Operating Gear.—The tendency of builders to provide that vehicles must be stopped before a change of gear can be effected is to be commended. Compared with 1898 and 1899, the disposition of the various levers and valves is generally satisfactory and convenient for easy manipulation, though each maker has particular methods of arrangement, the aim clearly being to fit the machines for operation by unskilled drivers. The most frequent attention is given by drivers to stoking at short intervals. Much of this watchfulness would be obviated by the adoption of automatic firing, on some system similar to that fitted to one of the vehicles described in the report where the construction of the boiler admits of such an addition.

Gearing and Transmission.—Improved forms of both tooth and chain transmission, e.g., the Thornycroft bell-crank drive and the Spurrier flexible chain pinion, were employed with corresponding advantage to each system, but the general absence of adequate, dust-proof, oil-retaining casings between the last countershaft and the driving axle, or wheels, is a matter calling for further consideration in design on the part of the makers. The several methods of locking the compensating gear were satisfactorily tested on more than one occasion during the trials.

Wheels.—Although the design of the driving wheels, which gave rise to the principal troubles in 1898, is now such as to render them structurally efficient, signs of undue stress, the results of the heavy shocks and vibration experienced on sets and rough roads, were not altogether wanting in the spokes and felloes of some of the wheels, which indicates that some practical means of absorbing these shocks is desirable. With reference to the recommendations made subsequently with regard to the increase of tare weight and the width of tires, we have to point out that the damage to road surfaces, commonly alleged as an objection to the increase of axle-load, cannot occur when the width of tires is in proportion to the load upon them, and further that the increase of load on wheels with a corresponding increase in width is, on the contrary, of direct benefit to the roads, as is demonstrated by the action of the ordinary steam-roller.

Legal Restrictions.—The present tare limit of three tons has again proved to be too low if loads of above five tons are to be dealt with, even under favourable conditions, upon a single platform. Whilst one of the competing vehicles carried as much as five tons during the trials, with a tare weight of slightly less than three tons, this load will be excessive for the same vehicle in winter or wet weather, and an average load of four tons is probably the most that can be carried regularly having due regard to the life of the machine. Such a vehicle could also haul three tons on a trailer, under favourable conditions, in addition to the load of four tons carried on its own platform. This third series of trials has not, therefore, resulted in the bringing to light of any new fact to indicate that the present three-ton limit of tare will meet the requirements of the trade of the country, or that improvements in design will enable builders to comply with it. While ten-ton loads are by no means unusual on the larger horse-drawn lorries, it is clear that as the demand for such loads exists their haulage by motor-wagons should not be prevented by legislation, and the present trials indicate that there is nothing to prevent such loads being transported.

It is to be noted that no difficulty has arisen in the United Kingdom in respect of the running of individual motor-wagons weighing between three and four tons unladen, of which over one hundred are working at the present day. At the same time, seeing that these vehicles are employed on sufferance only, the urgency for an increase of the tare limit by the legislature is even more pressing than before, and for the following principal reasons:—

- (a) Foreign countries and the United States of America have no such restrictions, and are building more serviceable vehicles for their own use and for export to the colonies;
- (b) A promising British industry is held back owing to uncertainty as to the lines of development;
- (c) The trade of the country is deprived of the full benefits to internal communication which it was thought the Act of 1896 would confer;
- (d) The development of motor-wagons for purposes of military transport, both for the regular and auxiliary forces, is seriously hampered, with resulting continual excessive expenditure on horse haulage;
- (e) Motor traffic is placed at a disadvantage compared with horse-drawn traffic, in many parts of the country, through being prevented from dealing with equally heavy loads per vehicle;
- (f) There is a present temptation to builders to reduce strength in parts of their machines, and cut down factors of safety, in order to comply with an arbitrary limit which has no real or useful significance now that it has been tentatively tried and proved wrong;
- (g) The limit being placed only on the tare of the vehicle, equal total moving weights are legal or illegal according to the proportion which the tare bears to the gross weight.

We recommend:—

- (a) That a limit of sixteen tons total moving weight, for any single motor-vehicle, shall be substituted for the present limit upon the tare alone;
- (b) That there shall be a minimum width of one inch of tire per wheel for each twelve cwt. of maximum total load upon it at any time;
- (c) That the width of tires for vehicles having a total moving weight (laden) of less than eight tons shall continue to be regulated by Article II., Section 3, of the Light Locomotives on Highways Order, 1896;
- (d) That since no inconvenience follows from the absence of restrictions as to the width of horse-drawn vehicles no restrictions should be placed on the width of motor-wagons.

Commercial Requirements.—We consider that several makers are now building upon lines which closely meet the requirements of trade in large manufacturing and distributing centres. It is possible to carry loads of up to seven tons, and haul up to three tons on a trailer, by using vehicles similar to the one exhibited in Class C of the competition, and such haulage may be undertaken with confidence subject to the provisions of the 1896 Act affecting the tare weight, but commercial requirements will not be fully met until loads of ten tons can be carried on one platform. We consider the vehicles which competed in Classes C and D well suited for export.

Future Trials.—We lay this report before the members of the Association and the public, with a full sense of the thorough manner in which the three series of Liverpool Trials have been conducted, and of the completeness of the data now available, owing to the assistance of the honorary observers and the organising powers of the honorary secretary, whose abilities and energetic services cannot be sufficiently recognised. We are of opinion that it will be unnecessary to organise trials on such a comprehensive scale for some time to come. As other wagons of interesting construction and extreme ingenuity failed, from the causes indicated, to go through the competition, and others were not completed in time to take part, trials of these and new types of vehicles can easily be conducted separately, and the reports, of which this is the third, will furnish a basis for sound and trustworthy comparisons as to the performance of any later vehicles.

(Signed) E. R. CALTHROP.
S. B. COTTRELL.
H. S. HELE-SHAW.
BOVERTON REDWOOD.
HENRY H. WEST.

TRACTORS FOR MILITARY PURPOSES.



It being essential that Tractors for military purposes should be capable of a much greater radius of action, without replenishment of fuel or water, than is at present attained by any such engines constructed for either military or commercial purposes, the Secretary of State for War has decided to offer prizes as under for the best Tractors meeting the requirements mentioned hereafter:—

First prize	.. .. .	£1,000.
Second prize	.. .. .	£750.
Third prize	.. .. .	£500.

1. To each prize will be added a bonus of £10 for every complete mile, beyond the minimum of 40 miles required by paragraph 2 of the "Requirements," that the Tractor awarded such prize can travel under the conditions therein described. The total amount of this bonus shall not exceed the value of the particular prize to which it may be added. 2. The trials, which will be conducted by the War Office Committee on Mechanical Transport, will commence in the Spring of 1903, and will extend over a considerable period, so that the Tractors may be thoroughly tested. The exact nature of the trials will be determined upon by the above Committee. A general scheme will be drawn up and issued to all competitors, but the Committee reserve to themselves full powers to carry out any additional tests that they may deem necessary, whether included in the general programme or not. The Committee reserve to themselves the power of rejecting any Tractor which does not comply with the requirements published herewith, or of suspending, at any stage, the trials of any Tractor which in their opinion has proved itself unsuitable. 3. The decision of the Committee on all matters connected with the competition shall be final. 4. Forms of entry will be supplied on application to the Secretary, Mechanical Transport Committee, War Office, Horse Guards, Whitehall. Firms or individuals who intend to enter must send in these forms, duly completed, to the Secretary, not later than 1st January, 1903. 5. No Tractor will be admitted to the trials unless a fully dimensioned set of drawings, and a specification, giving complete details, exactly as submitted for trial, together with a statement of the purchase price, have been lodged with the Secretary, Mechanical Transport Committee, before the commencement of the trials. 6. A firm or individual may enter more than one Tractor, but the conditions of paragraphs 4 and 5 must be complied with for each separate machine entered. 7. His Majesty's Government to have the right of purchasing all or any of the competing Tractors at the price stated by the competitor under paragraph 5. 8. All designs and specifications lodged under paragraph 5 will be considered confidential, and those of the Tractors that may be purchased will be retained for the purposes of the Government, but without prejudice to patent rights. Those of the Tractors not purchased will be returned to the competitors after the trials.

STATEMENT OF REQUIREMENTS OF TRACTOR FOR MILITARY PURPOSES.

1. Not to exceed a gross weight of 13 tons when fully loaded with all its fuel and water, and with all stores necessary for its proper manipulation on the march, and must be independent of any extraneous machinery for the supply of its motive power.

2. To be capable of hauling a gross load of 25 tons for not less than 40 miles over ordinary roads, having, so far as may be possible, grades not exceeding, approximately, 1 in 18, at an average speed of 3 miles an hour without at any time exceeding a speed of 5 miles an hour, using only the fuel and water that can be carried on the Tractor itself, without being replenished during the journey from either a separate vehicle or from any other source, and, in the case of a steam-engine, without reducing the amount of water in the boiler below a safety level to be fixed upon by the Committee.

3. To be capable of hauling a gross load of 12½ tons along a good level road for a distance of not less than 1 mile at a speed of 8 miles an hour.

4. To be capable of hauling a gross load of 12½ tons up a slope of 1 in 6 (for this test the Tractor can be fully loaded with fuel and water).

5. To be so designed and constructed that it shall be capable of travelling on all classes of roads and over rough ground without excessive wear and tear or injury, either from shock or from any of its lower portions striking obstacles projecting from the surface of the ground, or from the wheels sinking into the ground in soft places, or from other causes, and to be capable of being driven through water 2 feet deep without its motive power being seriously affected.

6. To be capable of being driven either ahead or astern.

7. To be fitted with efficient brakes on all driving wheels.

8. To be efficiently spring-mounted on all axles.

9. Provision must be made for rapidly locking together each or every pair of driving wheels.

10. To be capable of being steered by one man, and entirely controlled and manipulated by not more than two men, who must be placed in convenient positions for the work they are required to do.

11. To be provided with adequate covering to protect the men from the weather.

12. The handles, levers, or other arrangements for controlling the mechanism to be so arranged that the Tractor may be driven either ahead or astern, changed from one speed and from one direction of movement to another, steered, have brakes applied, and have any oiling or adjustments, necessary whilst travelling, carried out without the driver or assistant (if employed) leaving his normal position.

13. Proper arrangements to be made that no part of the machinery be liable to damage from mud or dust. When casings are used these should be dust proof, and readily removable for inspection and repair.

14. To be fitted with a winding gear, carrying 75 yards of flexible galvanised steel-wire rope, 2½ inches in circumference, the breaking strain of which must not be less than 15 tons, with suitable leading sheaves arranged so that a fair lead may be obtained for the rope from the drum to either the forward or after end of the Tractor, and from thence in any direction within an angle of 90 degrees on either side of the fore and aft centre line of the Tractor. The winding gear to be arranged so that the wire rope can be paid out from the drum whilst the engine is moving ahead.

15. The driving wheels to be not less than 6 feet 6 inches in diameter, nor less than 18 inches wide across the tires.

16. To prevent the Tractor being stopped by its weight being taken on under surfaces, should the wheels sink into the ground, the clearance between such under surfaces and the ground must not be less than 18 inches.

17. Not to exceed the following outside overall measurements:—Height from the ground level—for the fixed parts of the engine, 9 feet; for removable parts, such as chimney, roof, etc., 12 feet. Width, 7 feet 4 inches. Length, 20 feet.

18. No restrictions are placed on nature of fuel or class of engine, whether steam, internal combustion or otherwise, except that oils having a flash point of less than 75 degrees F. (Abel's close test) must not be employed.

19. As the Tractor is intended primarily for hauling purposes, it is not essential that a fly-wheel should be provided from which machinery can be driven by a belt, but if a fly-wheel is fitted it must be made of steel.

20. No armouring need be arranged for.

21. In the case of steam-engines—(a) The boiler must be of any form or material, but the construction must be such that it will comply with the requirements of the Manchester Steam Users' Association. Boilers normally working at exceptionally high pressures are not desirable. (b) The boiler must be so designed that it can be easily washed out. (c) An efficient arrangement must be fitted for preventing the emission of sparks from the chimney. (d) The boiler feed apparatus must be in duplicate. (e) A reliable water lifter for filling the engine tanks must be fitted. (f) If coal fired, means must be provided to deal with fuel that clinkers freely, and the grate area must be sufficient to enable coal of a very inferior quality to be used. (g) If condensing apparatus is employed, it must be substantially constructed, and not liable to damage from vibration or to be clogged up by dust. (h) If a condenser is used means must be provided for properly filtering the lubricating oil, if any, used in the engine, from the condensed water before returning it to the boiler.

22. If internal combustion engines are used, it is desirable that means should be provided for starting the engine, putting it into gear, and starting the load without noise or shock.

23. If friction clutches are used, the material forming the working surfaces of the clutch must be such that it will not require frequently renewing, and provision must be made that the clutch can be easily adjusted on the road.

24. If liquid fuel is used means must be provided for rapidly filling the tanks on the Tractor.

In considering the merits of competing vehicles, special importance will be paid to the following points:—(a) Distance over which a gross load of 25 tons can be hauled at 3 miles an hour with the fuel and water that can be carried on the Tractor without replenishment. (b) Prime cost, having due regard to efficiency. (c) Economy in working and maintenance. (d) Ease of steering and manipulation. (e) Simplicity of design, accessibility of parts, and the readiness with which repairs can be effected, or worn parts replaced on the road. (f) Absence of noise, vibration, smoke, or visible vapour. (g) The means by which the working parts are prevented from being damaged by mud and dust. (h) Capability of working with fuels varying in description and quality.

LOCOMOBILE OR LOCOMOTIVE.



As briefly mentioned in our last issue, Mr. Arthur Sharpe, of St. Helens, Byfleet, appeared before the Kingston County Bench to answer three summonses charging him with being in charge of a locomotive, and not having a licence for the same, with driving it at a greater speed than four miles an hour, and with failing to employ two men to control the locomotive. Mr. T. W. Weeding prosecuted on behalf of the Surrey County Council, and Mr. Staplee Firth defended on behalf of the Motor Union. Mr. Weeding said the question the magistrates had to decide was whether the locomotive in question was a traction engine or an ordinary motor-car exempt from the regulations affecting traction engines. He was the deputy clerk to the Surrey County Council, and was the chief witness in the case. On October 8th he was cycling through Walton, when he overtook the defendant driving a "Locomobile" car. There was a great cloud of steam coming from it. He contended that the vehicle was not an ordinary light locomotive or motor-car within the meaning of the Act of 1896, which stated "that no smoke or visible vapour shall be exhibited, except from some temporary or accidental cause." Mr. Firth observed that if the summonses were upheld there were about five hundred cars of this particular pattern that would be stopped. He ridiculed the idea that this light locomotive, which was only half a ton in weight, should be subject to all the restrictions of a ponderous traction engine. Something went wrong with the safety valve, which accounted for the temporary emission of steam. The Chairman said the Bench found that steam was escaping, but they were of opinion that it was due to an accident, and the summonses would be dismissed.

THE GLASGOW RELIABILITY TRIALS.

Mr. S. F. Edge writes:—"I was exceedingly sorry to see in your last issue a letter from Mr. Astell finding fault with the judges who gave the awards in connection with the recent Glasgow Trials held under the auspices of the Automobile Club. Surely if he objects to them it should have been prior to the competitions and not afterwards. Possibly he is quite right in many of his contentions, but I do think that he should recognise that the names of the judges place them above all suspicion so far as the genuineness of their opinions are concerned. No doubt everyone would be better pleased to see men with more knowledge of the subject than some of the judges who were appointed, but obviously with merely a very slight outside knowledge and absolutely no practical experience such a constitution of judges is, of course, liable to very curious judgments, but I think everyone must agree that they have given judgment honestly to the best of their ability.

"I have very little doubt that the majority of those judges who have recently purchased cars will be in a position to explain to their co-judges at the next trials why they should not give marks to those particular cars, and Mr. Astell should take account of this, as he may find that although his car failed this year the mere fact of its failing and some of the judges purchasing other cars may possibly put them in a position to find faults in the cars which they this year believed in.

"I must admit Mr. Astell makes a very strong point and one that deserves very serious consideration when he sets out that one of the cars,

NEW GRAPPLER PNEUMATIC COMPANY, LIMITED, v. MOTOR MANUFACTURING COMPANY, LIMITED.

In the King's Bench Division, last week, Mr. Garrett Walker (instructed by Messrs. Maunsell and Darley), on behalf of the defendants, who have their registered offices at Holborn Viaduct, London, applied that the order dated 11th September last, giving liberty to plaintiffs to issue a writ and serve it out of the jurisdiction on the defendants, be set aside. The action was brought to recover £200 damages for breach of contract in respect of 100 sets of motor-tricycle tires and rims. Counsel said he could not contest the fact that the contract had been made in Ireland, but he asked that the order should be set aside on the ground of balance of convenience, as all the witnesses resided in England. Mr. John Gordon, K.C., M.P., and Mr. E. A. Gollins opposed the motion. The application was refused.

BRITISH MOTOR TRACTION COMPANY v. MOORE.

On Saturday, in the Chancery Division, Mr. Justice Farwell gave judgment for the plaintiffs in the action of the British Motor Traction Company, Ltd., v. Moore, brought for infringement of the plaintiffs' letters patent. His Lordship granted an injunction in the terms asked, with the usual accompanying relief and costs. Mr. A. J. Walter was for the plaintiffs. Defendant did not appear.



THE SERPOLLET STEAM CAR EMPLOYED IN THE RECENT MILITARY MANŒUVRES IN FRANCE.

(Le Chauffeur.

to which the judges awarded the gold medal, actually weighs 3cwt. for every horse-power of the engine. It does make one think that the judges at any rate were interested in testing tires, as if everyone built their cars on such lines one would wonder what sort of tire to fit. Unfortunately the evil results of such a judgment do not merely end here, as it gives such a powerful lever to foreign manufacturers to point out that in England the Automobile Club's gold medal was awarded for a car weighing nearly 3cwt. for every horse-power. If there was nothing to beat such a vehicle in the class surely it would have been better to have awarded no medal at all? Curiously enough I find in my large Napier the weight carried per horse-power is about 56lbs., and yet many people have told us that this is too heavy."

BRITISH MOTOR TRACTION COMPANY v. CENTURY ENGINEERING COMPANY

This case was mentioned before Mr. Justice Joyce in the Chancery Division last week. Mr. A. J. Walter, on behalf of the plaintiffs, said the defendants agreed to a perpetual injunction, an agreed sum for damages and to pay costs in the action. Counsel for the defendants intimated that they consented, and the order was made accordingly.

AN IMPORTANT CASE TO MOTORISTS.

In the Cambridge County Court last week an important point with regard to motor-cars was raised as to whether the driver of a motor-car is always responsible if a horse takes fright at it. The defendant was Henry Alfred Bedwell, of Cherryhinton, and the plaintiff was John Young, of Birdbrooke, Essex. The evidence given was to the effect that the plaintiff and a man named William Broughton were proceeding with a hay-press from Sible Hedingham to Ridgewell, on the morning of Whit-Monday. The plaintiff was sitting at the back of the press, and Broughton was leading the horse. Close to Gilden they were about forty yards from a corner, when Broughton saw a motor-car, driven by defendant, coming down a hill. As the car turned the corner the horse grew a little restive, and upon the car stopping about five yards from them the horse backed across the road, and sent the press into a ditch, with Young underneath it. The defendant then got out and helped to extricate Young, and the car went on. The plaintiff's leg had been injured, and he claimed £5 8s. damages. The defendant, who had two friends with him, said that he had had considerable experience with motor-cars. On the day in question he saw the hay-press when he was about seventy yards away. He was going at about ten miles an hour at the time, and went round the corner at four miles an hour. He then saw the horse

was restive, so he pulled up within about twelve or fifteen yards of it and stopped the engine, so that there was no noise. His Honour reserved judgment.

FURIOUS DRIVING CASES.

At Ashford, William P. Warren Smith, of Oxford Street, London, was summoned for furiously driving a motor-car at Shallock. The defendant did not appear, but wrote to the magistrates, apologising for being unable, through business matters, to attend the Court, and stating that the car was not travelling at a great speed, as the mechanism was injured. This he had pointed out to the constables at the time, and further stated that it took from 9.30 in the morning till 7 in the evening to travel from London to Deal. He trusted the Bench would be as lenient as possible under the circumstances. Sergeant Dann gave evidence to the effect that at 4.35 on the Saturday afternoon he timed the defendant over a measured course, and found that he travelled at the rate of over eighteen miles an hour. The magistrates imposed a fine of £6 and 11s. costs, the Chairman remarking that the defendant should have appeared, although his letter of apology to some extent made up for his absence.

At Wetherby, Robert License, Leeds, was summoned for driving a motor-car furiously. A quarter of a mile was said to have been covered in fifty seconds when near Collingham, on September 22nd. Sir Robert Gunter, the chairman, gave particulars of an instance he personally observed on the Boston Sparoad recently, and fully corroborated the superintendent as to the dangerous speed of motor-cars in that district. Defendant, who said his machine would not travel twelve miles an hour, was fined £5.

At Romsey County Bench, Alexander Wyllie, of Woodspeen, Newbury, was fined £2 and 30s. costs for furiously driving a motor-car on the 13th ult. at Braishfield, near Romsey. Three witnesses deposed that at one place the car was, in their judgment, travelling from twenty-five to thirty miles an hour, and it was elicited that a journey of twenty-three or twenty-four miles was done in one hour twenty minutes, including three stoppages to see to the machinery.

At the Rochdale Police Court, Emile Violor, the driver of Mr. Winston Churchill's motor-car, was charged with furiously driving the motor-car on the evening of the 7th ult., in Whitworth Road, Rochdale. Mr. Thomas Burrows, Rochdale, stated that he saw the car coming down Whitworth Road at a furious rate. It was going at the rate of between twenty and thirty miles an hour. Mr. Winston Churchill and Lord Lytton were in the car at the time. A few hundred yards lower down the road a boy named Wilfred Ingham, aged eight, was crossing the road from behind a wagon, when the motor-car knocked him down, and ran over him. Mr. Winston Churchill took the boy in the car to the infirmary, where it was found that no bones were broken. The magistrates imposed a fine of £2 and costs.

At Croydon, Edgar Cundy, of South Norwood, was summoned for furiously driving a motor-car in Brighton Road, South Croydon, on October 13th. The police evidence as to speed was conflicting, various estimates ranging from 16 to 153 miles an hour! The defendant denied the pace, contending that it was only eight miles. The summons was dismissed.

GEORGE HARRISON, 16, of Cambridge Road, Barnes, was summoned for a similar offence at the same place and on the same day, the machine being a motor-tricycle. A police-constable said he saw the defendant with several other cyclists, who were proceeding at such a pace as to be dangerous to some people who were getting on and off a tram-car. The witness, who stated that he was a cyclist and a judge of pace, said that the rate was fifteen miles an hour. The defendant was fined 16s. 6d., including costs, in consideration of being a first offence.

At Sale, James Brindles, of Altrincham, was summoned for furiously driving a motor-car at Ashton-on-Mersey, and also for carrying no light on the vehicle after dark. Constable Nighall stated that defendant was driving at a rate of about twenty-three miles an hour. Superintendent Okell said complaints had been received from different local authorities as to the excessive speed with which motor-cars were driven through the district. Defendant was fined 20s. and costs for not carrying a light, and £3 and costs for furious driving.

At Thirsk, on Monday, Mr. Claude Johnson, secretary of the Automobile Club, appeared in answer to a summons for driving a motor-car to the danger of other persons using the highway, and for refusing to stop his motor-car when requested. Defendant said the boy in charge of the horse and cart was on the wrong side of the road at the time, and when he held up his hand he was close to him. He stopped directly, and the horse, which had previously looked interested in the car, swerved round, and the boy was swung clear of the horse. After hearing the evidence a fine of £10 and costs in respect of each case was imposed.

Reported above are 8 prosecutions for furious driving. In 1 case the summons was dismissed, while in 7 cases fines amounting to a total of £28 10s. without costs were inflicted.

SEQUEL TO A TRAP ACCIDENT.

At Lanark Sheriff Court, before Sheriff Scott Moncrieff, William Harper, manager of the Scottish Motor-car Company, Limited, Edinburgh, was charged with having, on September 9th, failed to stop a motor-car which he was driving near Wintermuir Farm, Biggar, while passing a horse and trap belonging to Dr. Robertson, Biggar, whereby the horse became restive and jumped a fence on the side of the road. The evidence for the prosecution was that Dr. Robertson and his coachman, when they saw the motor-car coming, shouted to the occupants of the car to stop to allow him to pass. This they did not do until within twenty yards of the trap, and then only for two minutes. Before getting a chance to lead the trap past the car the driver of the car started again, with the result that the horse jumped the fence, the trap being broken and the horse injured. The two occupants of the car besides the driver said they stopped for five minutes, and the horse would not pass. Mr. Harper then drove past slowly, and when the car had passed the horse jumped the fence. Mr. Harper, in being examined, said he had during the last four years driven over 50,000 miles in a motor-car, had taken part in the recent 1,000 miles motor-trials, and had received the first prize in the section in which he competed. He considered himself a competent driver, and was well acquainted with the rules relating to the driving of motor-cars. The Sheriff found the charge proved, and inflicted a penalty of one guinea.

OBSTRUCTION BY MOTOR-CAR.

At Eastbourne Walter C. Bersey was summoned for obstructing Elms Avenue with a motor-car on September 29th. Defendant did not appear. Police-sergeant Veness and police-constable McGill explained that the motor-car was left unattended in Elms Avenue for over four hours. When defendant returned he refused to give his name and address. The chairman said that, considering the manner in which defendant met the police, they should increase the usual fine, and he would have to pay £1 ls. and costs.

A PUBLIC motor-car service has been established between Mons and Beaumont, in the Hainault division of Belgium. Each car carries twenty persons.

AN American company has been authorised by the municipal authorities of Mexico to establish an automobile service in that city.

BROOKLYN, N.Y. is said to be attracting, as residents, many wealthy automobilists, who appreciate the fine roads in the vicinity—roads superior to any others in the States.

At an automobile race meeting at Fort Erie, Canada, recently, Fournier made a brilliant exhibition in a 25 mile run in his 50 h.p. car, and established a record of 1m. 14sec. in his fastest mile, covering the entire distance in 31 min. 58½ sec.

ACCORDING to a Reuter's telegram from Detroit, Mr. Alexander Winton has broken all automobile records from one mile to ten miles, his time for the whole course being 11 minutes 9 seconds.

EXPERIMENTS took place last week at Brussels with an automobile lorry which is destined for the Congo Free State. It was loaded with 36cwt. of iron and tested over difficult country, including very heavy and muddy roads. The result was entirely satisfactory. One of these motor-lorries will replace sixty-five native carriers, and eventually it is hoped that sufficient lorries may be used to dispense with carriers altogether.

TO CORRESPONDENTS.

All communications intended for insertion in this Journal or relating to Editorial matters should be addressed to THE EDITORIAL DEPARTMENT, MOTOR-CAR JOURNAL, 39 and 40, Shoe Lane, London, E.C., and must be written on one side of the paper only. Letters must in all cases be accompanied by the name and address of the writer, as no notices will be taken of anonymous communications.

The Editors cannot undertake to return MSS. or drawings, although every effort will be made to do so in the case of rejected communications. Where such are regarded as of value, correspondents are requested to retain copies.

The Editors do not hold themselves responsible for the opinions expressed by their correspondents, or for statements and facts which do not appear in the editorial columns.

The Editors and publishers beg also to state that they will accept no responsibility for unsolicited contributions, even if used, unless payment for same is directly specified in forwarding, and the terms arranged before publication.

To insure insertion communications and contributions must be in the Editor's hands by Wednesday forenoon of the week in which the same are intended to appear. Disappointment may be caused by non-compliance with this rule, and to avoid this earlier receipt, if possible, is necessary.

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COMMENTS.



IN the development of South Africa the motor-car will undoubtedly play an important part. Seeing the good work done in the early part of the war by mechanical traction, we wonder that more has not been heard of the matter, and that the automobile has not been generally employed for despatch carrying and the like. Anyhow, Mr. Cecil Rhodes has become a patron of the motor-car, and that means its adoption in many ways when the trouble in South Africa has quietened down. In company with Dr. Jameson and Mr. Alfred Beit, Mr. Rhodes has been taking the "cure" at Salsomaggiore—a new and remarkable resort in Italy. The village, with its baths of gravy-brown water (the richest in the world in lithium and strontium), is an hour's drive from Borga San Donnino railway station on the main line to Bologna. In order that Mr. Rhodes and his party may thoroughly enjoy the scenery round about, they had a smart motor-car sent out from Paris, and in this they are to tour through Italy by way of Rome, Naples, and probably Sicily. Doubtless after such an experience, and remembering the success with which he used a similar car when recently shooting in Scotland, Mr. Rhodes will take an automobile or two back to South Africa with him, in which case our English manufacturers should try and secure an opening in that country.

The Lincolnshire Automobile Club.

MR. E. CRAGG, M.D., one of the vice-presidents of the Lincolnshire Automobile Club, has consented to give his popular lecture on "Automobilism from a practical point of view," in the large room of the Saracen's Head Hotel, Lincoln, on Saturday, the 23rd inst., at eight o'clock. A discussion is to follow, and this, with the lecture, should be of great interest and usefulness. The date has been fixed as one when there will be late trains out of Lincoln, and there will be a full moon, so that those driving in will have a good light, and, with fair weather, be able to drive home in comfort. An invitation has been sent to all members, and any other gentlemen interested in the movement are invited, as it is desired to have a thoroughly representative company. Should this lecture and discussion prove the success anticipated it is probable that the Council of the Club will arrange a series.

Slow Canterbury.

CANTERBURY loves its ancient traditions, its ancient ways, and its ancient means of conveyance. When a light railway was proposed to connect the old city with the modern town of Herne Bay, the idea was rejected, and the lumbering buses continue their heavy running to and fro. The only other available means of communication is the still more uncertain route by the railway. Can we wonder then that some of the local City Fathers are unfavourable to motor-cars, and have lately been airing their

ignorance and prejudice to such an extent that Councillor J. G. B. Stone had to make the suggestion—in an ironical mood—to keep motors out of the town altogether? A rolling stone gathers no moss, but we hope Councillor Stone will shortly see an efficient motor-car service in the shadow of the Cathedral.

Interest at Southsea.

IN view of the event of Saturday, the 16th inst., one of our staff recently visited Southsea to discover the local feeling with regard to the run. Last year's great reception at the steps of the Portsmouth Town Hall is still vividly remembered. Till then motor-cars had been somewhat unfamiliar sights in the locality, but that procession educated many Hampshire people, and throughout the past twelve months automobiles have been frequently in and about the streets of the district, while the steady running of a service from the "Clarence" to the South Pier has been a daily reminder of the usefulness of the motor-car. Consequently public curiosity is not quite so keen as in 1900, but a good reception will doubtless be the lot of the automobilists who drive to the fine common facing the front at Southsea.

"Killing an Industry."

THE initials "C. S. R." present no difficulty to automobilists, especially when over the address "Knightsbridge," and we are glad to see the famous motorist still alert as ever to defend his favourite—if ballooning has not yet usurped the place of the automobile—pastime in the columns of our contemporaries. His latest letter is one pointing out that at a corresponding period of last century attempts were made to restrict the speed of railway trains to eight miles an hour. Those efforts failed, and it is satisfactory to know that the present ignorance and prejudice is likely to be as unsuccessful as was the opposition to Stephenson and his fellow pioneers in cheap travel. "Killing an industry" is too great a task for prejudiced people to undertake, especially when that industry has such doughty champions as those who favour the motor-car.

Man v. Motor.

OLD-TIME contests of horse *versus* bicycle have gone out of fashion, but Mr. W. Header, a well-known Plymouthian, has treated the people of his town to a new sport. Having watched the progress of motor-cars in Union Street, Plymouth, and having come to the conclusion that "there will be a smash-up before long," he has taken the usual course of anti-automobilists, and written to the local newspaper. He believes that some of the venturesome motorists have sometimes exceeded twelve miles an hour, and "a good runner that I put on could not keep up at times with them." The spectacle of a good runner and a good motor-car racing at twelve miles an hour in one of the busiest streets in the "West Countrie" must have been almost as interesting as John Gilpin's ride. No wonder Mr. Header concludes his letter with the naive remark, "The police seem to look on and smile." Does the promoter of this new public entertainment expect the police to join in the competition?

The Scottish Automobile Club.

THE Scottish Automobile Club had a pleasant run to North Berwick on Saturday last. The cars assembled in Charlotte Square, Edinburgh, at 11 a.m., and the route taken was *via* Craigmillar Park and Dalkeith, in order to avoid the badly laid causeway at Musselburgh. The drive past Gosford on the coast road in the crisp autumn air was delightful. After luncheon at North Berwick the cars returned *via* Haddington. Amongst those taking part in the run were Sir John Murray, Dr. and Mrs. Dawson Turner, Mr. John Wilson and party, Dr. and Mrs. Ronaldson, and Mr. W. L. Sleight and party.

Motor Cars in Australia.

OUR Melbourne correspondent writes: During the past few weeks there has been quite a spurt in the trade here and in Sydney, where two or three American firms have opened up under "Free Trade." A uniform tariff throughout Australia will have an equalising effect, however, and give an impetus to the manufacturing trade. The General Post Office has been making a series of tests with all the available cars—De Dion voiturette, Mail quadricycle, 7 h.p. De Dietrich, and a Thomson steam car. Two or three more have to be tried, but up to the present, the local car, the Thomson, has the best trials to its credit. The Metropolitan Fire Brigade has also adopted one of this Company's cars, and several are under construction. The Tarrant Motor Company have also recently turned out an oil car, which is running very satisfactorily. Recent importations include a Darracq and two Benz cars. Two or three Locomobiles are in use here, but the high price of petrol (2/6 per gallon) makes their running cost very high, consequently they are seen on the road but seldom. A few motor-tricycles are also in use, but automobiles generally are still such a novelty that crowds always surround them when standing in the streets. Great interest is being felt in Melbourne by the promise of Mr. H. Sutton's new car, and a motor-bicycle by a local cycle firm. This latter, however, is somewhat late, as already arrangements have been made by the Thomson Motor-Car, Limited, for the importation of motor-bicycles and sets, at very low prices.

The English Motor Club.

THE run of the English Motor Club to Brighton on Saturday last was not marked by a single incident with the Surrey police, thanks to the thorough way in which the patrols organised by Messrs. Panhard and Levassor and the Motor-Car Company carried out their duties. The police, finding their clocking was being checked by independent witnesses, some of whose watches they discovered to have even second hands, gave up the job for the day and retired crestfallen. The result was that every car reached its destination, the muster being unexpectedly large and the run as enjoyable as ever. The return on the Sunday was by various routes, but from reports since received all met the fog somewhere and had weird experiences; indeed, in some cases, the cars had to be discarded, and one gentleman who failed to escape from Epsom High Street, finally sought the sheltering wings of the Eagle.

A Motor Parcels Delivery Service for Kingston

IN our last issue we briefly referred to the formation of the Kingston Motor Express Company for the purpose of facilitating the delivery of trade parcels in the town of Kingston-on-Thames and surrounding districts, so as to save tradesmen the trouble and expense attached to the keeping of a large staff of porters, horses and carts, etc. We have made some enquiries regarding the new service, and have learned that the cars to be used are those known as "F.N.," and that it is proposed to place a sufficient number on the road to enable four to six deliveries to be made in a day. The company anticipates that

the price at which goods can be delivered on this system will be considerably below that at which they can be delivered by any other method at present. We may add that the company has already received promise of considerable support in Kingston.

Motor 'Buses for Brighton.

AT a meeting of the Tramways Committee of the Brighton Town Council a letter was read from Mr. Councillor Wallis, requesting the Committee to take into consideration, at an early date, the question of the desirability of including in an application to Parliament powers to run motor-omnibuses on certain routes in connection with the tramway system. It was resolved that the town clerk be instructed to include in the appointment of the Committee on the 9th inst., authority for it to consider the expediency of applying to Parliament for the necessary powers.

The Halifax Automobile Club.

WE learn that a number of automobilists in Halifax have formed themselves into a Club, with the object of popularising the use of motor-cars generally, and also for social intercourse. They are to be congratulated in having secured as their first president and chairman, Alderman J. T. Simpson, chairman of the Halifax Corporation Highways Committee. Mr. James Lord, the Halifax borough engineer, is also a member of the Committee. With these two gentlemen in the Club the local roads ought soon to be in first-class condition. Mr. H. Raymond Wood is hon. secretary of the new club.

Conversions in Buckinghamshire.

ONE of the local magistrates for the borough of Wycombe and county of Bucks has been doing much during this year to familiarise his locality with motor-cars, and to remove prejudices which threatened in the spring to break out into petitions to the Government for stronger and more stringent powers which would have checked automobile industries. As a member of the Bucks County Council he did a good deal to stay and restrain proposed petitions to the Local Government Board against motor-cars, and Lord Cottesloe, the president of the County Council, Mr. Tonman Mosley, the chairman, and Captain Farwell, the vice-chairman, and other members of the Bucks Highways Committee have been observed riding apparently with satisfaction and enjoyment in the car in question and at a speed fully up to the present legal limit. We understand that the chairman of the Highways Committee has now purchased two cars himself. At the Wycombe borough election for twenty-four new councillors on November 1 (after the extension of the civic boundaries) Mr. Alderman Vernon, the owner of the car (which is a 10-horse M.M.C. tonneau), drove it throughout the day to bring up voters, and it doubtless much assisted his candidature, as he was returned nearly at the head of the poll.

Great Possibilities.

ONE is sometimes apt to wonder why such an army of witnesses confronts the unfortunate motorist who finds himself before the local Bench on a charge of furious driving. Some light was thrown upon the problem in the hearing of a charge of this order at Bolton recently. A Councillor who had appeared as a witness against the motorist asked for expenses, and was told that 2s. 6d. was the usual fee. On protesting the fee was raised to 5s., though the solicitor for the defence remarked that the witness had only been in court thirty-five minutes. A humbler witness, with no pretensions to municipal honours, then applied for expenses, and was well pleased with the half-crown awarded for "speaking the truth, the whole truth, and nothing but the truth." To appear against a motorist charged with furious driving is certainly an easy way of earning money and might, with a little ingenuity, be developed into a profession

congenial to many in search of light occupation of a non-speculative order. But the would-be exponents of automobile speed must beware lest in their zeal they kill the goose that lays the golden egg.

The Projected Public Service at Belfast.

AT the last meeting of the Belfast Police Committee the application for permission to run a public service of motor-cars again came under notice. Mr. Porter, with his solicitor, attended, and urged that the Committee should reconsider their decision not to grant permission to ply a motor-omnibus for hire in the city. The Committee, by four votes to two, decided, however, to adhere to their former decision, but it is to be noted that they so far appreciated the strength of public opinion on the question as to approve of the principle of a motor-car service for the streets of Belfast, as it was pointed out that if suitable vehicles were provided they would have no hesitation in licensing them.

Sensible Scotchmen.

A MEETING with a view to a discussion of motor-car matters should be arranged between the Rt. Hon. Graham Murray, the Lord Advocate of Scotland, and the Rt. Hon. Sir J. H. A. Macdonald, the Lord Justice Clerk of the country north of the Tweed. It ought to result in a joint declaration which should be a warning to the small fry on the magisterial bench and to the little local authorities. Mr. Murray is in favour of a pace limit for towns and villages with controls similar to those adopted in the recent Glasgow trials. In the open country he would have the general law of the land applied—no regulation as to speed at all—subject to the proviso that driving or riding to the public danger should be a punishable offence. With this suggestion no motorist need find fault, and if this sensible view generally prevailed the long list of prosecutions appearing in our columns every week would be materially lightened, without in any way endangering the public safety.

Progress in America.

A PHILADELPHIA correspondent, in the course of a recent letter, remarks that "a lot of good and reliable vehicles are being made in America, and the forthcoming show at Madison Square Garden, New York, will bring about a revolution here as regards models. Steam-cars have been the most popular type of automobile so far, but the gasoline (petrol) vehicle is making rapid strides with the public. The Locomobile Company are doing the best business; they are very progressive people, and are shortly sending a representative out to Japan to see exactly what the prospects are for motor-cars in the 'Land of the Rising Sun.' Very few manufacturers have made money this year; in fact, I think that those who have made money could be counted on the fingers of one hand; the principal cause is that they have turned out a lot of unreliable machines which have been sent back to them. They have, however, profited by the experience, and next year they should make money."

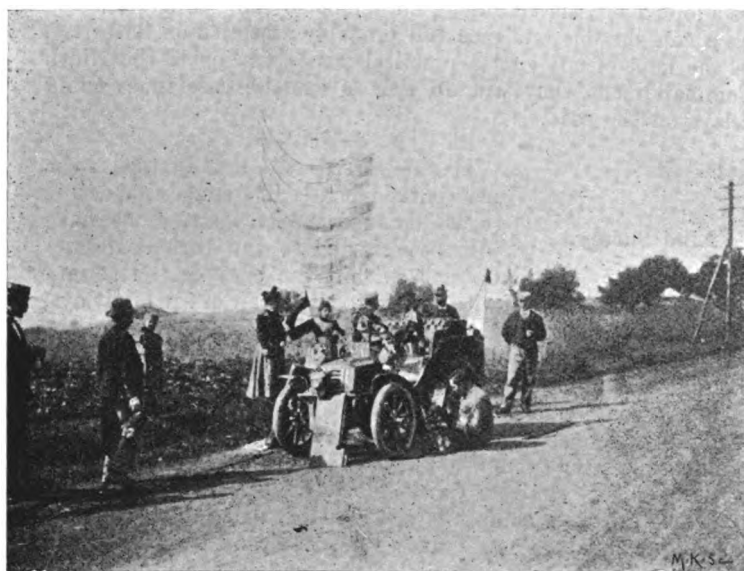
Cycle Manufacturers and the Motor Industry.

CYCLE manufacturers appear to be rapidly recognising that the construction of motor-cars and cycles is not identical, and that the two classes of industry do not lend themselves for amalgamation under one roof. Such views have already been expressed by the Rover Cycle Company, Limited, and Rudge-Whitworth, Limited, while a further expression of opinion on the subject was given at the annual meeting of the shareholders of the New Hudson Cycle Company, Limited, at Birmingham last week. Mr. H. G. Hills, the chairman, then stated that the question of the motor industry had been taken into consideration by the directors, who had come to the conclusion that it would not answer the purpose of that or any other cycle company to manu-

facture motors. Machinery used in cycle manufacture was not adaptable to motor manufacture. They had, however, taken in hand the manufacture of motor-cycles with fair success, the demand being an increasing one.

Fogged.

ARDENT motorists who are stayed by nothing have this week experienced sensations such as they have probably never experienced before. Fogs we have had before, it is true, but never since the motor-car won its legal right to the road five years ago, has the "ninth plague" so completely wrapped London and our great cities in its mantle. From Kennington Road comes an account of two cabs colliding, and a motor-car proceeding at a snail's pace running into the prostrate horses. No doubt we shall hear of more thrilling adventures and hair-breadth escapes before the week is out. Meanwhile, steady all!



A ROAD-SIDE REPAIR.

(L'Avenir de l'Automobile.)

The Brighton Road Motor Patrol.

THE operations of the Motor Patrol, organised by Mr. R. Moffat Ford, upon the Brighton road on Saturday and Sunday last for the purpose of militating against the recent unfair tactics of the Surrey County police were completely successful. Motor-cars with the patrol flag and observers with binoculars paraded the entire fifty miles of the road throughout the whole of the day. Several ambuscades of uniformed and plain-clothed policemen were located early in the morning, but in view of the increasing activity of the Motor Patrol, these parties evidently concluded that their plans had been rendered useless, as they were observed to retreat into the villages towards noon, where they dispersed. As the result, therefore, of the inauguration of the Brighton Road Motor Patrol the police did not succeed in stopping a single car throughout the whole of Saturday and Sunday, and no names and addresses, therefore, could possibly be taken. Great assistance to the work of the Patrol was rendered on Saturday by a small army of cyclists, recruited from Messrs. Panhard and Levassors' riders, and provided with red hand-flags, which they used for signalling purposes. We understand from Mr. Moffat Ford that it is intended by his committee to establish a permanent paid patrol for the Brighton Road, and to extend the organisation during the next few weeks in other important directions, such as the Portsmouth Road, the Great North Road, etc. By this means he hopes to break up the police opposition to the growth and extension of the motor industry in this country.

The Surrey Persecutions.

REIGATE and its frequenters have had their lesson, by which it appears the local hotel interest has profited at least as much as the victims thereof, and the scene has shifted *pro tem.* to the Ripley road and the vicinity of Guildford, no less than nine summonses against motorists for venturing to drive along the Hog's Back on Sunday week being down for hearing at the Guildford County Court on Saturday the 9th inst. The scene of several of the alleged offences is an unusually deserted and broad road, where little danger to traffic could be caused by even excessive speeds, and it is therefore popular with the police, who, as a rule, dislike having their attention distracted from their duties by butchers' carts, unattended horses, or Sunday toppers. A temporary abstinence from driving in the neighbourhood until it becomes more salubrious will probably be the result, unless a hebdomadal "patrol" (week-ends being the only unhealthy time) is adopted as an alternative; and in connection with this, the familiar uplifted hand, if seen on a car, might well be adopted as a signal among automobilists for "danger ahead." As a considerable audience will probably assemble on Saturday, in the hope of enjoying a practical demonstration of the Ninth Commandment, they will do well to exercise care in avoiding delays on the road.

Kind Surrey.

Is the Surrey County Council in a penitential mood? The suggestion occurs to us because special instructions have just been issued to the various District Councils within the area of the county with regard to the repair of the highways, so as to avoid inconvenience to motorists consequent on the necessary overhauling of the roads at this time of the year. It is suggested that such lengths of road should be undertaken at a time as would enable the rolling to be done and leave the roads at nights as free as possible from inconvenient patches, and that in all cases arrangements should be made that the lengths under repair might be entirely finished before the end of the week, so that no unrolled metal might be left from Saturday to Monday morning. This is certainly a wise proposal, and we hope it will be extended to Hampshire, so that the roads may be quite clear on the occasion of the Automobile Club's run to Southsea.

Police Court Procedure at Reigate.

WE have received a copy of the correspondence between Mr. Moffat Ford and the clerk to the justices of the Reigate Bench, relative to the method of conducting the business of that court adopted at the recent wholesale fining of cyclists and motorists. Pressure on our space prevents us from reproducing this correspondence. We might, however, draw attention to the fact that Saturday, October 12th, was certainly an extraordinarily full day for the Bench, for the reason that, owing to the instructions issued by the Chief Constable of Surrey, a normal business of a sitting of the Reigate Bench was increased by 300 per cent. as the results of a determined crusade against cyclists and automobilists. Furthermore, there remains the equally important fact of the eightieth summons being issued for the same time as the first, and that of really criminal cases being heard continuously with those for the hearing of which we might almost say that a civil penal court might profitably be constituted. Out of the whole eighty cases, only eleven appear to have not been heard, representing a percentage of, say, fifteen which might naturally be reckoned upon as not requiring to be heard. This leaves a balance of sixty-nine cases which required hearing, and Mr. Moffat Ford's question as to whether it was reasonable to suppose that all these could be heard before lunch time is just as applicable to the sixty or sixty-nine as to the seventy or eighty, because it is impossible to presume that this number of cases could be heard before the luncheon adjournment, and absurd to summons them all for the same time. Yet the clerk does "not think that

it would be practicable to issue a certain number of summonses for the morning and the rest for the afternoon." These things are much better arranged in London, where the magistrates' courts are, unfortunately, more busy, and where criminal cases are heard in the morning and what might be called civil summonses issued for the afternoon. We notice that Mr. Ford's query whether defendants were compelled to be in attendance at the court has been turned by the clerk, in his reply, to a question of being in the court. Unless a defendant at Reigate, however, is in the court with his witnesses, he runs the risk of being declared absent and of judgment being declared against him by default through not answering to his name.

FOR some time past rumours have been current as to a possible amalgamation of the Daimler Motor Company and the Motor Manufacturing Company, but we hear that this is now not likely to take place.

A CENTRAL NEWS cable from New York on October 30 announced that M. Fournier, the well-known French *chauffeur*, had met with a terrible accident. Along with five guests, M. Fournier was riding in a motor-car at Long Island, when the vehicle came into violent collision with a locomotive. The car was practically wrecked, and one of the occupants fatally injured.

AT a meeting of the Warwickshire County Council on Tuesday a resolution was agreed to reaffirming the position which the Council has already taken up in previous resolutions, namely that if motor-cars were numbered, it would not be necessary to place any restriction on their speed other than imposed on the drivers of vehicles, i.e., that they should not be driven at a speed greater than is reasonable and proper, having regard to the traffic on the highway, or so as to endanger the life or limb of any passenger, or to the common danger of passengers. The object of the resolution, said Lord Algernon Percy, was to do away with the speed limit. It seemed to him that the speed limit had been a failure, and was in itself unreasonable. But it was clear that there must be some special means of identification, owing to the speed of the vehicles.

THE Locomobile Company of America during the past three days have been keeping "open house" at the extensive new dépôt at Sussex Place, South Kensington, to which we referred in our issue of September 28 last. Motorists throughout the land have been invited to call to inspect not only the new dépôt but also the latest type of Locomobile, in which a number of improvements have been made during the past twelve months. The engine is now built stronger and heavier, the boiler is absolutely safe, it being impossible under any condition to explode it. The burner is now constructed in one piece, doing away with back firing, that was experienced so much in the earlier makes of cars. The differential gear has now been covered in, the running gear, wheels, piping, and framing of the carriage have all been constructed heavier and stronger, and the additions that were wanted have now been placed on the car, such as the feed water heater, which effects great saving in petrol. Now, instead of cloth upholstery and flimsy looking woodwork, all the cars are upholstered in the finest leather, and the woodwork is of the best coach-building material. The new show-rooms, which are known as 39-40, 42-43, Sussex Place, consist of two ground floors, about 104 feet long by 30 feet wide, with a height of 15 feet, the basements corresponding. The floors of the show-rooms are capable of holding a hundred cars, and although at the present moment there are not more than thirty or forty vehicles on show, by next February the company intend to have 150 carriages in the building. An elaborate suite of offices has been built in connection with the show-rooms, the whole of the woodwork being finished in old English oak. A railed-off space will be found in one corner of the show-room which will be used as a waiting room, provided with writing materials, periodicals, etc. The walls present the sight of a miniature picture gallery, being studded with beautifully framed photographs representing the "Locomobile" in different parts of the world.

A WINTER RUN IN 1900.

(Continued from page 614.)

WE were passing between the masses of Mont du Forez and the Monts du Beaujolais; the former showing all the characteristics of a granite formation in its immense piles heaped one upon another, and in its bold and rugged outline; the latter a serrated silhouette typical of limestone. This district of Auvergne is in many ways interesting. The two mountain masses were, in geological periods, united at their southern termination, and constituted the *barrage* of the great lake of the Loire. The depression which parts them from one another, and, to the north of Beaujolais, separates it from the mass of Morvan, formed long ago the path of communication, the line of action and reaction, between South and North in France; for it is here that the tributaries of the Seine and of the Saône (itself falling into the Rhone) intermingle most conveniently for the intercourse of the nations. The valleys themselves are rich in coal, and this since its discovery has had its usual effect. The soil is barren, the climate severe, and until recent times all this plateau was most thinly inhabited; now it is increasing more rapidly perhaps than any other part of France; since the beginning of the century the population of the whole country has increased by only one-third, while in the coal fields of the Loire it has increased by nearly one-half. The people of Auvergne were formerly of a type distinct in face, in dress, and in customs, and preserved their distinguishing features in the annual descents which they made from their mountain homes in search of work; but now of course all this is lost. As we drove on we were rising higher, though in the growing darkness it was hardly perceptible; the engine seemed not to feel it in the least. We were obliged to keep upon the third speed after a time, for the way was winding and we could make out that there was a deep declivity at the side. At length we saw lights twinkling below; the lights of St. Etienne. We wound gently down, a good many hundred feet, and put up at a decent inn in the long and rather fine street (part of the main Paris-Marseilles road) which runs through the middle of the town. About St. Etienne there is nothing to say which is not summed up in the statement that the population has more than trebled in the last fifty years. In the fifteenth century the place consisted of two hundred poor houses, and the inhabitants were allowed by Charles VII. to surround themselves with a wall as a protection against the marauding English; traces of the wall still remain.

We had been so much hindered that we began to see that we should not reach our destination by the end of the week, which we both had reasons for wishing to do, unless we could make our last two days really long ones; so before separating we summoned the particular *garçon* whose duty it would be to rouse us next morning, and my companion promised to be a very good friend indeed to him if he appeared in our rooms with our rolls and coffee at five a.m. precisely. He proved sufficiently alert—to his own interests as well as ours—and we were on the road before six o'clock. It was not, of course, yet light, but we were some little time getting clear of the steam trams, and it was dawning as we left the town behind. We had missed some fine views the night before, and were glad to be able to look back upon the ground we had passed over. We had a very long and often steep hill to climb, well engineered in straights and turns across a spur of Mont Pilat (more than 4,000 feet high). The whole situation recalled the Devil's Punch Bowl in Surrey, but upon a far larger scale. Here and there we were compelled to use the first speed, though for the most part the car took the second. An engine of smaller power—an 8 h.p.—is probably as fast as most people wish for on the level; but the moment one encounters anything like a severe gradient the going is so considerably reduced as to be tiresome by contrast, and seriously to lower the average rate of travelling. It is just here that the game is felt to be worth the candle with a 12 h.p. There is no sense of crawling uphill, and the time saved enables one to run down at a steady pace. I have said that the larger motor is

not without its drawbacks, but they are more than made up for in this way.

Passing through Bourg Argental, we reached the summit, and the descent commenced. The corners were sharp and we would run no risks. At Tournon the road comes down obliquely upon the Rhône, and thence we pursued it for most of the day. It was only a few miles to Valence, the capital of the Department, and we stayed there for breakfast. The walls of the room were adorned with diplomas earned by the proprietor at various exhibitions for skill in cooking; such a professor is of little account among our neighbours, with us he would be a man of mark. The river is here spanned by a noble suspension bridge, and a road follows the stream on either side. We kept to the right bank. Our luck was fairly good, though we had a worry with our tires occasionally, and with the contour of the country in our favour we got on well. We took in petrol at Montelimar (what a convenience it is being able to buy it in almost any village), and my lady friends now tell me that I ought to have brought home nougat from there. The face of the land gradually assumed a softer aspect; indeed before getting to Orange one passes the boundary of the olive-growing region, and the people begin to wear an unmistakably southern appearance. Orange is of course full of historical and antiquarian interest; the Arch of Triumph is perhaps the finest in all France. I have somewhere read that the accumulated débris has actually raised the ground-level nearly three feet, and the whole place still abounds in Roman remains. We were not long



A GROUP OF MOTOR-CARS AT THE ARCH OF TRIUMPH, ORANGE.
(*La France Automobile.*)

in sighting the Papal Palace of Avignon perched upon its hill. We were on familiar ground, and stayed but half-an-hour or so. On starting again, we struck out eastward, and as we crossed the narrow bridge over the Rhône, it began to rain heavily. This afterwards occurred to me as rather curious, inasmuch as the spot is markedly dry in comparison with its surroundings, while the vicinity of Paris to the south and east, where we were drenched on the first day, has the smallest rainfall in the entire country. The wet, however, was not enough to spoil the road, and the going was splendid. Often one could see many kilometres of clear road ahead. Then we let her go, with the accelerator down. Soon it became dusk, but there was not much beauty to forfeit—just the sand dunes which everyone notices out of the carriage windows when he begins to pull himself together after a poor night, and wonder how long it will be before he is in Marseilles. We lit our lamps and sped on again. We had done a very fair day's work, but we proposed to stick to it for some hours longer, as the rain had abated and the sky was bright.

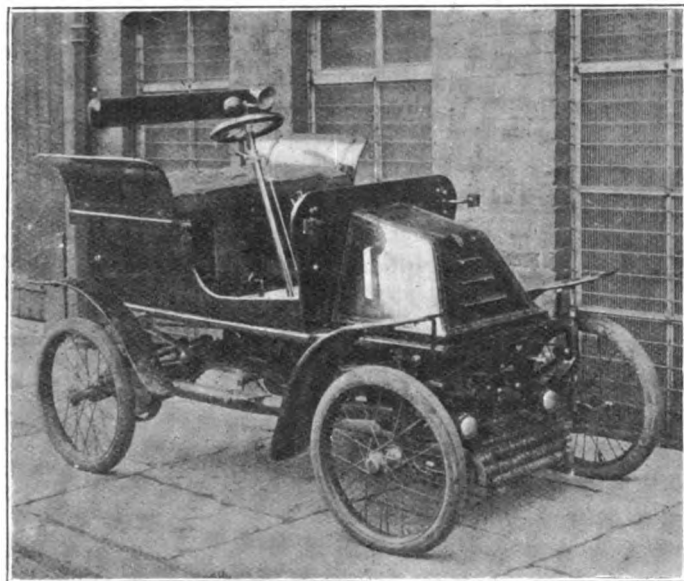
ARUNDELL WHATTON.

(To be continued.)

STIRLING'S MOTOR CARRIAGES, LIMITED, of Glasgow, are now coming to London, a large show room having been taken at Albert Gate Mansions, opposite the barracks at Knightsbridge, S.W. A full range of cars will be on show at the new depot to-day (Saturday).

THE ROTHWELL LIGHT CAR.

THE accompanying illustration shows a new light car which is about to be put on the market by the Eclipse Machine Company, Ltd., of Oldham. Power is supplied by a 6 h.p. vertical petrol engine, which is placed under the bonnet in front, and is supported on a strong underframe, as are also the gear box and countershaft. The cylinder is water-cooled, the circulation being maintained by a pump. The gears provide three forward speeds of seven, fourteen, and twenty-one miles per hour, and one reverse motion; from the countershaft to the rear live axle the power is transmitted by a strong chain. Two powerful and independent band brakes are fitted, either of which



is sufficient to hold the car on any hill, and we understand that they act equally well in both directions. The body is hung on springs independent of the motor and other mechanism, so that there is practically no vibration when the car is stationary and the engine running. The illustration shows a two-seated body, but we understand that future vehicles will have accommodation for four persons. Inclined wheel steering is fitted, and all the changes of speed are controlled by one handle working in a notched quadrant. The road wheels are all 26in. diameter and fitted with pneumatic tires. The weight of the car complete is $7\frac{3}{4}$ cwts.

THE City and Suburban Electric Carriage Company inform us that they have been granted the Royal Warrant as Electric Carriage Makers to Her Majesty the Queen.

MR. EARDLEY BILLING has resigned his position as manager of the Motor Mart, and has started on his own account as the Central Motor Company, 46A, Tottenham Street, Tottenham Court Road, W. A feature of the Central Motor Company's business is the letting out on hire of motor-bicycles.

THE Kensington Motor Company, Ltd., has been registered with a capital of £2,000, to carry on the business of manufacturers and repairers of and dealers in motors, motor-carriages, electro-platers, etc. The first directors are E. H. Clift and W. E. C. King. The registered office is at 83, Hammersmith Road, Kensington.

WITH the liability of frosts which the winter months bring, owners of motor-cars will do well to assure themselves that the water which should circulate freely by means of pumps does not freeze by the way. To prevent such an accident, too frequently attended with disastrous results, it is as well to mix a small quantity of glycerine with the water in circulation. No matter how sharp the frost, water so treated will always remain in a liquid state.

FLOTSAM AND JETSAM.

BY "FLANEUR."

THE decision of the Automobile Club to use names instead of numbers on the cars participating in the Southsea run affords an opportunity for a little comic relief and a little police mystification alike. Numbers are uninteresting; they are also easily deciphered. Names, on the other hand, may amuse the spectators at the appointed halting places, and checkmate the aggressiveness of ambushed policemen or malevolent anti-automobilists when the cars are under weigh. Not that I would for a moment suggest that any scorching should be indulged in; the official time-table removes all inducement to anything of the kind, and for the most part makes it quite impossible. But recent experiences have shown that pace is entirely unnecessary to bring the *chauffeur* into court; he may be driving at eight miles an hour and the sneaks of Reigate and elsewhere will none the less secure his conviction with the greatest ease.

ANYTHING, therefore, that assists in baffling indiscriminate persecution is worthy of adoption, and the selection of the most indecipherable names is a plan to be commended. One has only to turn up one's Lempriere, or even the list of classic names in Nuttall, to find jaw-breakers in plenty which would serve admirably for the purpose in view. Unfortunately the club has limited the length of the chosen names to ten letters; still, good use may be made even of this allowance. A knowledge of Greek and Latin nomenclature is hardly to be expected from intelligent policemen, much less the bumpkins who do duty in rural districts. Why not, therefore, ring the changes with some of the following, which can scarcely be spotted and spelt at sight—Mnemosyne, Callirhoe, Plinthine, Amynone, Astrynome, Osrhoene, Acholoe, Orithyia, Zeuscippe, Aglaopheme or Iphigenia? There are plenty more that are equally mellifluous. Or if classicism be unwelcome, something scriptural might serve, e.g., Kushaiah, Jeshebes, Shemariah, Phibseth, Xerolybe or Ashabish. It is obvious that a policeman would think twice before attempting to write "Xerolybe" in his note-book, with a lively anticipation of his own efforts to pronounce the name in court. While there is this rich choice of appellations it is a positive crime to label the cars with monosyllables like "cob" and "owl," and so convert the procession into a sort of kindergarten for observant youngsters and half-educated "bobbies."

REVERTING to the matter of the Locomobile prosecution at Kingston, which I mentioned last week, I have been wondering what the melodramatic Mr. Weeding Weeding meant when he said that there had been no less than three convictions of light steam-car drivers for displaying a visible exhaust. The only case of which I can find mention was one at Dorking a few weeks ago, when a fine of one guinea and costs was imposed upon a baronet who drove through the main street of the poultry town with a trail of steam behind him. Now there are two things concerning that conviction that distinctly require explanation. In the first place, the emission of steam was temporary, owing to a broken valve, and was, therefore, not illegal, for the wording of the Act with regard to smoke and vapour contains the clear exemption of "from any temporary or accidental cause." On what grounds, therefore, did the bench convict?

BUT there is another still more important point. The specification of a light locomotive is made in the initial clause of the Act, but I have looked in vain throughout the whole Act, and the attendant regulations of the Local Government Board, for any mention of a penalty. If, therefore, the steam car in question did permanently show a visible exhaust, the utmost that the magistrates could legally do would be to declare that the vehicle had no right to the road. To impose a fine was out of their power, and one wonders where they derived their notion of a guinea as a meet penalty. I may add that I have referred this view of the situation to Mr. Staplee Firth, and he bears it

out to the letter. The reference in the Act to what constitutes a light locomotive is a legal definition only, with no penalty attached, and the Dorking conviction, he avers, was altogether *ultra vires*.

THE Aero Club has made a very successful debut, a considerable proportion of affirmative replies having already been received to the preliminary circulars issued from 4, Whitehall Court. From what Mr. Frank Butler tells me the cost of aeronauting is by no means so great as might be supposed. Mr. Butler has already purchased a balloon on his own account, in which with some friends he will make a preliminary ascent at the Crystal Palace this (Friday) morning. With a capacity of 45,000 cubic feet of gas, and accommodation for four passengers, the price is only £160. At three shillings per thousand the cost of inflation amounts to £6 15s. With incidentals in the way of labour, etc., an ascent may be brought off at an outlay of £10, which, considering the novelty of the experience, can hardly be regarded as excessive. It may be mentioned as a fact of interest, by the way, that coal gas has an approximate lifting power of 40 lb. per 1,000 cubic feet, while that of hydrogen is 70lb. per 1,000.

IN announcing, somewhat late in the day, that a motor-car race is forthcoming between the Duke of the Abruzzi and Cavaliere Garibaldi Coltelletti, the *Daily News* adds that the first-named "rides a Paulhard-Levassor made in Italy." Presumably Panhard-Levassor was implied, but even then the information would be wrong. It is the Cavaliere who drives a Panhard; the Duke's car is of local design, and was built at Turin.

PRECIOUS little discrimination appears to be exercised by the editors of "popular" magazines when dealing with technical subjects; so long as the article is "chatty" the qualifications of its writer and the inaccuracies with which it bristles may go for nought. In the November *Pearson's Magazine*, for example, there is a contribution headed "The Sport of Racing Motors," by Herbert C. Fyfe, which is a bald *rechauffe* of newspaper stories with certain imaginative deductions which are as apochryphal as they are absurd. Of King Edward we are told that "His Majesty possesses more than one splendid car, capable of running at speeds almost equal to the best on record." The bare suggestion of the King's serviceable Daimlers, which are fitted with solid tires, and have 12 h.p. motors, being "almost equal" to the flights of a Paris-Berlin 60 h.p. racer is too ludicrous for words. Then the writer proceeds to inform us that the King, "if he entered his cars in races, might well secure some first prizes," and retails the ancient myth about the Serpollet car which his Majesty does not possess, and never has possessed, despite the high falutin' descriptions of the *Daily Mail* and of Mr. Herbert Fyfe anent the "finest car ever built as regards luxury and appearance." In all likelihood, however, this Serpollet legend will linger for a decade, or perhaps longer, with reversionary probabilities of being resuscitated from time to time, and made to do duty for some hotch-potch compilation of the coming century.

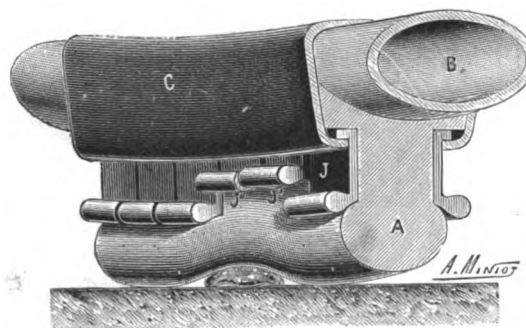
ELSEWHERE in the *Pearson's* article we are informed that the legal pace of mechanically-propelled vehicles ere the passing of the Act of 1896 was three miles an hour. It is added that "the County Council have been endeavouring" to reduce the present twelve an hour limit to one of ten. What is the mysterious body known as the County Council? If "councils" were the word intended the reference would still be wrong; some County Councils have made themselves ridiculous, but not all. On the same page is a picture of "The Hon. C. S. Rolls racing a mile in 1 min. 35½ sec., or 38 miles an hour," the explanation in the adjoining text being that this feat was performed "at Welbeck Abbey." I have a lively recollection of seeing Mr. Rolls go past me in Welbeck Park in May, 1900, when the mean of his two journeys, up and down, worked out at the time above named.

But naturally he was *solus* in a denuded car, whereas the illustration shows Mr. Rolls with three companions all in heavy winter garb and goggles. As a matter of fact, the photograph from which the picture was made is that of Mr. Rolls bringing his 12 h.p. car home from Paris in fiercely cold weather, and far enough from Welbeck Park. But so long as Mr. Rolls was on board that was enough for the magazine, and if the car had been a 3½ h.p. Benz the editor would have been none the wiser. After this little inaccuracy no one will be surprised to learn that a final photograph is labelled "Arrival at Whitehall of the competitors in the 1,000 mile motor race held last year."

A NEW MOTOR TIRE.

"AN Occasional Motorist in France" writes us as follows:—
"Knowing the deep interest taken by motorists in any improvement in tires, perhaps a short account of my visit to the 'Teuf-Teuf' Tire Company's works at Levallois Perret, near Paris, may be of interest to your readers. Happening to be in Paris I took the opportunity offered of calling on a friend, whom I found just starting on his motor-car for the 'Teuf-Teuf' factory to have it fitted with this tire. Asking me to join him, I did so, and was greatly struck with what I saw.

"After being introduced to the patentee, I was taken over the works, and had the tire explained to me in its various stages. The points of the tire are as follow:—(1) It is a combined pneumatic and solid rubber tire. (2) It possesses a complete immunity from puncture, being protected by a solid rubber outer tire. (3)



The impossibility of the tire being wrenched from the rim. (4) Perfect adjustment to the nature of the road travelled, the tire accommodating itself to any obstacle without strain on the air-chamber or wheel rim, independent of the load carried. (5) The two parts of the tire being each distinct in itself. the air-chamber can be removed or replaced without disturbing the solid tire, and in the event (very unlikely) of the air-chamber becoming deflated, the car can proceed on its journey without any inconvenience, to the steering, running on the solid tire till such time that a convenient place can be found to repair the damage.

"I understand that the combined tire has been tested up to 4,000 lbs., and came perfectly through the ordeal. There is an entire absence of sideslip with the tire. I tested it on a road positively ankle deep in greasy mud, with the result that I consider it is peculiarly adapted for heavy van work, as well as for the lighter cars. I understand that sections of the tire may be seen in London, but for the moment I forget the address.

"In conclusion, Mr. Editor, I may say that I am in no way interested in this tire beyond desiring to put before the notice of motorists advantages which, I think, this tire possesses over the ordinary pneumatic now used."

MESSRS. BRADBURY AND COMPANY, LTD., of Oldham, are about to bring out a new motor-bicycle on the Minerva system.

IN addition to their light type of carriage, the Locomobile Company of America will, next spring, place on the English market a heavy steam touring car and a delivery wagon.

CONTINENTAL NOTES.

BY "AUTOMAN."

THE official alcohol contest organised by the Minister of Agriculture, which took place at the beginning of last week, attracted a considerable number of entries, amongst which the principal manufacturers, such as Panhard, Darracq, Peugeot, Delahaye, Gobron-Brillié, Georges Richard, de Dietrich, Gillet-Forest, Bardon, Mors, etc., were represented. The first trial took place on Monday morning, and commenced at half-past six, nineteen vehicles starting out of the Porte Maillot. At the park at Acheres a speed trial took place over a 15 kilomètre course, which was covered by Marcellin on a 6½-h.p. Darracq, using pure alcohol, in 22 min. 50 secs. After the speed trial the cars returned to Paris, the last car arriving at a quarter to six. Only one car failed, a *voiture légère* driven by M. Chauveau. This day included the trials of the first and second sections, that is



NUMBERED CARS IN FRANCE.

(La France Automobile.)

to say motor-cycles and cars up to 650 kilos in weight. The trials for the third section, viz., cars weighing more than 650 kilos, took place on Tuesday of last week. M. Mors, driving one of his 10-h.p. cars, arrived first at the park, and did the 15 kilomètres in 18 min. 49½ secs., making the best time. He was also first back to Paris. On Wednesday the trials of motor delivery vans and waggons took place. There were seven entries, and a Gaillot 6-h.p. waggon did the best time. Most of the cars in the trials used alcohol at 50 per cent. of carburation; a smaller number used alcohol at 75 per cent., while but a very few used pure alcohol.

THERE is a rumour abroad that the Yacht Club of France is about to amalgamate with the A.C.F., and evidently negotiations in this direction have been carried on for some time. The club-house of the A.C.F. in the Place de la Concorde, Paris, is magnificent and very well arranged, as all those readers of the *Journal* who have visited it will testify. It is not, however,

the liveliest place in Paris, and except on rare occasions it is rather deserted, and if the fusion with the Yacht Club will give it a little more animation it will be a good thing. Nowadays most owners of yachts are also owners of automobiles, so that the two sports will be able to go hand in hand from more than one point of view.

EVERYONE who takes an interest in motor-car racing is aware of Girardot's reputation as the "eternal second," and the bad luck that has followed him in big races. The latest thing is that after piloting fast cars continually with impunity, he has been summoned and convicted for excessive speed *on a bicycle*, and as he was away from home when the proceedings took place and absolutely oblivious of their existence, he has been stupefied to learn of the arrival of bailiffs to execute the judgment.

THE hill-climbing trials which will take place on the Cote de Gaillon on the 17th inst. have attracted over sixty entries. The contest has been authorised by the police. Amongst the competitors are Mr. S. F. Edge with a 50-h.p. Napier, and Mr. Mark Mayhew on a similar car. There are two 35-h.p. Mercédés, and a 100-h.p. Jenatzy entered, while Panhard-Levassor, Gladiator, Darracq, Dechamps, Clement, De Dion-Bouton, and Bardon are amongst the competitors, and there are also two Serpollet steam cars and two electric cars. The results of the test will be extremely interesting, and I hope that the English competitors will not disappoint us.

ALL those interested in automobile racing will be glad to learn that Levegh has recovered his health, and is coming to the front again. It will be remembered that Levegh was first for the Gordon-Bennett Cup as far as Poitiers, and that he should have run in the Paris-Berlin, in which, if my memory does not deceive me, he was replaced by Anthony on account of his severe illness. In a few weeks' time he will be able to take to the roads again.

THE Automobile Club at Nice is making strenuous efforts to have the races for the coming season sanctioned, and already has the consent of the mayors of all the localities through which they will pass. It only remains now to get the consent of the Central Government.

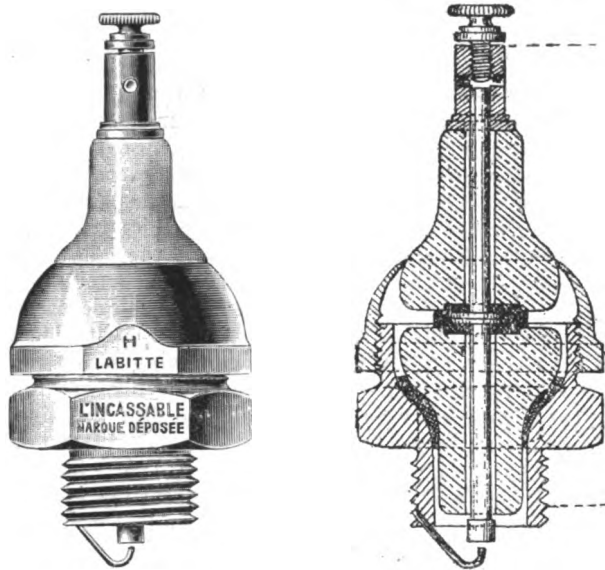
ALL'S well that ends well! and I feel sure that all the readers of the *Journal* will be pleased to hear that the Committee for the Deutsch prize in their meeting on Monday decided to give the prize to M. Santos Dumont, by thirteen votes against nine, thus putting an end to an unfortunate and uncalled for incident. The Marquis De Dion at the meeting led an acrimonious attack on M. Santos Dumont and his friends, but fortunately for the sake of impartiality there were a number of independent people present at the meeting who would not allow any question of nationality to weigh in their minds and by whose vote the plucky young Brazilian was awarded his just due. It is pleasant to have to record that all the scientists on the Committee voted in favour of M. Santos Dumont.

REFERENCE has already been made in these notes to the new French law requiring numbers on cars capable of travelling at a speed of over 30 kilomètres (18½ miles) per hour. The accompanying illustration shows a special lantern which has been introduced by M. Bleriot to meet the requirements of the new regulation, which specifies not only the sizes of the letters and numbers, but the distance between each. The face of the lantern—with three figures and a letter only—measures about 19 in. by 7 in.

THE New Zealand Customs authorities have lately given a decision to the effect that "pneumatic or rubber tires for motor tricycles and quadricycles propelled by oil-engine, electricity, or other such agency," imported into the colony, are to be classed as parts of carriages, the duty being 20 per cent. *ad valorem*.

THE "INCASSABLE" SPARKING PLUG.

OUR illustrations show a general view and section of the "Incassable" or "Unbreakable" sparking plug, for which several advantages are claimed—notably the absence of all cement. The porcelain is made in two pieces which rest on asbestos joints, so that there is no contact with metal. The central metal rod is also in two parts; each part has a flattened end, and these are held together by the external



GENERAL AND SECTIONAL VIEWS OF PLUG.

nuts. The central rods are an easy fit in the porcelains, so that they may expand freely without any danger of cracking the porcelains. The plug is only about two-thirds the length of the usual pattern, and is claimed to give an extra powerful spark. The plug, which is guaranteed to be unbreakable, is made by M. H. Labitte, of Paris, and is being marketed in this country by Messrs. John Child Meredith, Limited, of Summer Lane, Birmingham, who have sent us a sample for trial.

THE Vienna Association of Motor-car Drivers has purchased a car for the instruction of its apprentices.

A GOOD story of the King of Belgium is going the rounds of the French Press. It is said that the King was passing through a small village *incognito*, and stopped at a little farm and asked for a glass of milk. Whilst he was drinking the milk he talked English with his attendants, and the farmers evidently took him for an Anglo-Saxon globe-trotter, and discussed in Flemish what "this idiot of an Englishman" would give them for the milk. The King, it is said, handed a franc to the peasant with the head uppermost, and remarked in Flemish that he would give them his portrait, at which there was a recognition and collapse on the part of the peasants and great merriment on the part of the King.

THE Chief Constable of Birmingham has caused to be issued a placard setting forth the regulations issued by the Local Government Board with respect to the use of light locomotives on highways, and particularly directing attention to the regulations respecting the speed of motor-carriages. The Chief Constable, in specially directing attention to Article IV. of the regulations, adds: "It is to be clearly understood that any person using such carriage is not necessarily entitled to drive at the maximum rate of speed laid down in the regulations, but only at such a rate as is reasonable and proper having regard to the traffic on the highway. The police will strictly enforce this regulation in Birmingham, and it is also to be noted that the Towns Police Clauses Highways Act, 1835, apply to the use of light locomotives. Any person driving any such carriage to the common danger of passengers in any thoroughfare may be apprehended without warrant and charged before a magistrate."

CORRESPONDENCE.

A DUST BLOW-OFF.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—In reference to your remarks under the heading of "A Dust Blow-off," in your last issue, we would like to point out that the arrangement mentioned by you is a portion of Mr. Estcourt's excellent and most successful idea for keeping cars free from dust, as described by him in a letter appearing in your issue of October 5. There is not the slightest question as to the efficiency of the arrangement, as we fitted it to the car in the early spring, and there has been ample opportunity to test it, including the demonstration at Leicester. Since proving its success we have converted a number of cars, including Mr. Owers' 18 h.p., and Lord Hastings' 7 h.p. Daimlers, and are fitting it to all new cars turned out from our factory.—Yours faithfully,

J. W. BROOKE AND CO., LIMITED.

MAWDSLEY BROOKE, Director.

THE GLASGOW TRIALS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Having followed with the keenest interest the discussion on the result of the Glasgow Trials, I fully endorse the opinions of your numerous correspondents, who all agree that the medal went to the wrong car. The only dissenting letter is that from "Enthusiast," in your last issue, which I do not think should go unanswered. He entirely misses the point that Class A was a special class, framed for voiturettes and light cars, declared at a selling price of not more than £250, and the result was to be a guide to purchasers not wishing to exceed this figure. His contention *re* the merit of heavier cars refers to an entirely different class, at a much higher price. I believe I am correct in stating that the particular New Orleans car ran some 1,000 or more miles before its entry at Glasgow, and this is quite good enough for any ordinary common-sense purchaser, as, we may take it, had the car been built too lightly for the class of work it is intended for, the extraordinary performance it made would not have been possible. I find, from taking an average of eleven of the best cars entered in Class A, we get a weight per vehicle of 9 cwt. 7 qrs., and the weight of the New Orleans is 10 cwt. 3 qrs., ample, in my opinion, for good service.

It seems we must conclude that all makers of this particular class of car have been wrong up to the present, and the only car worth considering for 1902 is one propelled by a 5 h.p. motor, weighing at the very least 14 cwt. odd. This edict will go forth to other countries, where it will be regarded as proof of the advancement of motor construction in England.—Yours faithfully,

J. WILLIAMS.

THE NOMENCLATURE QUESTION.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I am pleased to see that "Englishman," in your columns, calls attention to the use of that dreadful word "Garage."

I have already done so myself, but it appears to me that "Englishman's" substitute is almost as bad as the original. I am quite aware that the English language does not provide a word which would replace "Garage," but that is no reason why another French word should be hauled in, and which sounds so much like the English word "Garbage."

"Running Shed" is time honoured in its application to railway locomotion. Why should not "Running Store" play a similar role in regard to road locomotion? "Motor Running Store" would, I think, be self explanatory. "Motor Store" would be read in the same sense as the Americans refer to their shops as stores—namely, a show room for motors, but a "Motor-Running Store" would mean exactly the same thing as a loco-running shed.

If I were driving into a country village I should not hesitate to ask a yokel if he could direct me to "The Motor-Running

Store," but I should hesitate except for the pleasure of observing a look of blank dismay suffuse his features—to ask him to show me the "Garage."—Yours truly,

ALF. R. SENNETT.

THE ROOTS AND VENABLES CAR.

To THE EDITOR OF *The Motor-Car Journal*.

SIR,—With regard to my letter of last month about the Roots and Venables car which I have had now in use for the last twelve months, I forgot to say at the time that I bought this car from a former owner who had had it in use for twelve months and that the car had not been returned to Messrs. Roots and Venables for any repairs during that period. Since I have had it I have carried out what repairs have been required myself. I have since found that the occasional difficulty in starting was solely due to the state of the old ignition tube and to the lower tube leading to same. I have not since had either of the spokes give way and as I am informed that other users of the cars never have this trouble, it was evidently entirely due to some imperfect fitting of spokes and to the bad stone sets in the district in which I reside.

Although not a new car I have made some long journeys upon it; once during last summer from Derby to Reading and back, and I frequently take long runs with my wife and child. We surmount the Derbyshire hills, which, as everyone knows, are very steep, without difficulty, occasionally, of course, on the lowest speed, and I would certainly not be inclined to change this car for any that I have seen on the road. Its general reliability, the ease with which a re-supply of kerosene can be obtained and the absolute safety of the fuel employed are great considerations in the use of the car. I am certainly well-satisfied with the running, and for medical men I should think a car of this type invaluable. It is something to feel that you have not to use that extreme care with lamps or a light of any kind in its neighbourhood that is necessary when using spirit cars.—Yours faithfully,

ROOTABLE.

MOTORS, AXLES, AND TIRES.

To THE EDITOR OF *The Motor-Car Journal*.

SIR,—It would be highly interesting and instructive if Mr. W. H. Astell would give us his views regarding the advantage of vertical over horizontal engines, and perhaps Mr. Austen would also state his. A statement by these two authorities on the relative merits of a live-axle would also be highly interesting. Another point of great importance that is worthy of discussion is the best tire for the back wheels of a business motor-car. I have heard of some medical men who have used solid or compound tires, and these are said to lessen skidding and of course do away with punctures. But what do experts say, is the effect on the engine and other machinery?—Yours faithfully,

CONSTANT READER.

THE MOTOR-BICYCLE FOR 1902.

To THE EDITOR OF *The Motor-Car Journal*.

SIR,—Many who, like myself, prefer the motor-cycle to the motor-car (considering its use to constitute almost an ideal method of transport and enjoyment), will be curious to inspect the 1902 models. Report speaks very well of the recent improvements made in the Minerva type of motor, and we are now also promised a new Werner. The Singer type, fulfilling, as it does, practically all the requirements of the class of riders for whom it is designed, is to undergo but few changes of note, if we except the addition of the conveniently placed air-lever which now admits of control during the actual riding. Two excellent American machines are also on the market, and will probably find large support.

It would be interesting to have various riders' experiences of their mounts for 1901. Regarding the Werner, I have somewhat to modify the opinion I had of it at the outset of the season. An excellent machine, it is inferior in some respects to some rivals

of the Minerva type as regards cleanliness, petrol storage, freedom from slip and general finish—the latter, indeed, being unsatisfactory and evincing oversights and rough work which would not be passed at a Coventry factory. In all these respects machines such as the "Excelsior," and "Phoenix," are uncontestedly superior, and, indeed, in so far as concerns absence of side-slip, the Minerva type is even safer than an ordinary bicycle. The Werner, however—a specially built one—I have ridden, is faster and better than either the Minerva or Singer type on hills. As to relative reliability, I cannot speak, but my engine has given some trouble—no set screw being fitted to hold the gudgeon pin. I had one spoilt cylinder among other mishaps also the result of lax workmanship. At the same time, I gladly acknowledge that the condition and behaviour of the machine, as now righted, are remarkable. Racing cyclists cannot even hang on, while I have easily passed a 2½ h.p. water-cooled De Dion trike on one of our very difficult hills. The machine is coveted by at least a score of enthusiasts who have seen its prowess.

Among the improvements desirable are the following:—(1) Abolition of the present weak and ridiculous band brake and the fitting of two reliable brakes to every machine as the law enjoins. The present brake nearly cost me a bad accident, and two Werner riders unite with me in condemning it as useless and dangerous. (2) A means of easily and cleanly greasing the head. (3) A good silencer which shall not slow machine overmuch, in place of the present makeshift iron pot. (4) An exhaust valve lifter to replace compression tap. (5) A "free wheel" that is really free and does not run as if its bearings were clogged with mud. (6) Less visible wiring and better general finish, now very defective. (7) A cleaner method of lubrication and more petrol space. (8) Optional h.p. of 2, 1½, and 1¼ as riders prefer. For most tourists 1½ or 1¼ would be ample and more economical of petrol, but the 2 h.p. has its merits for many districts. (9) A reliable carburettor that is not one day flooded and the next constantly empty; also removal of all projections which hamper the knees while one is pedalling. (10) An exhaust tap which will, on steep hills, allow of a free exit for exhaust without passing it through silencer, thus economising power, and assisting to keep down heating. (11) The present air-ring control on the right handle-grip is admirable, but the sleeve is apt to work loose. This again is a matter of finish. Also the throttle-valve and advance sparking lever frequently get loose, to an extent destructive to skilful driving.

In conclusion, I may express a hope that more care will be taken in future in sending out these machines and attending to small orders for interchangeable parts, for which one has to wait indefinitely. It is annoying also to receive a spare crank of different pattern to its fellow, and a petrol tank which does not even fit the frame! Such carelessness ought never to be traced to "the Viaduct,"—Faithfully yours, E. D. FAWCETT.

POPULAR PRICED CARS WANTED.

To THE EDITOR OF *The Motor-Car Journal*.

SIR,—I think the suggestion of a road race will do no good to the motor movement; indeed, I think that the sale and use of very fast high-powered cars should be discouraged as much as possible. I should like to see makers turn their attention to the production of voiturettes capable of running at a steady twelve miles an hour at prices ranging from £75 and upwards, according to the number of seats and the horse-power of the engines.

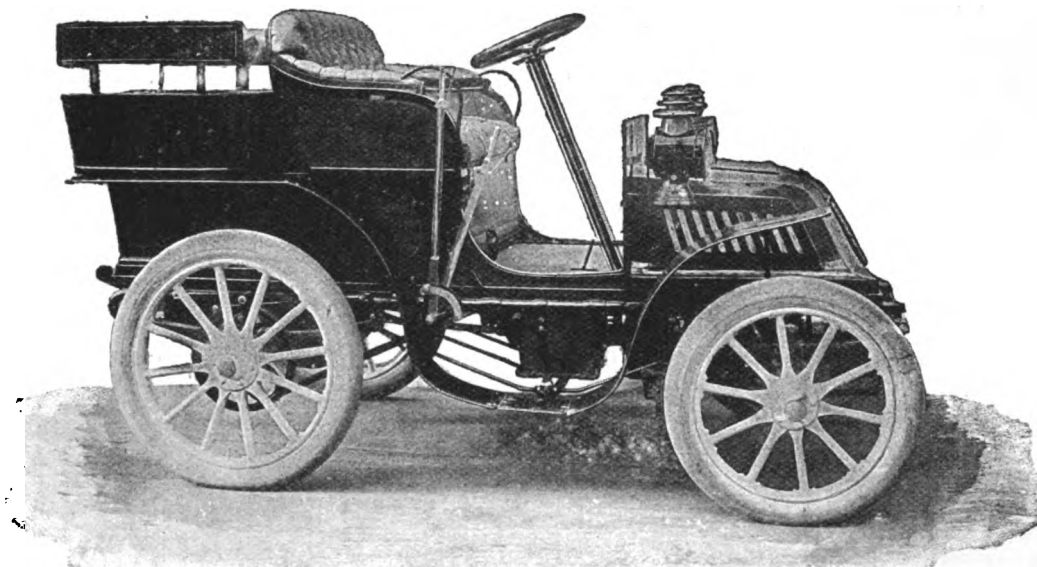
In the present state of the law and public opinion, it seems to me that special attention should be given to producing moderate-paced cars at popular prices, so as to counteract opposition by creating a large class of law-abiding users. Motorists should, in my opinion, slow down to about five miles an hour some little distance away when meeting horses or when rounding sharp curves, and should also pay great attention to going slowly through towns and villages. If strict attention were paid to these points, I think that the speed limit would be less rigorously enforced, or would be repealed altogether.—Yours truly,

CECIL JACKSON.

WITH regard to the letter of the Clipper Pneumatic Tire Company, Limited, *re* Michelin tires, in our last issue, Mr. R. E. Phillips writes:—"As my complaint was not made against the Clipper Pneumatic Tire Company, I should not trespass on your space to reply to the letter of the managing director of that company had he not questioned the veracity of the statements I have made. This gentleman asserts that my statement, that I endeavoured to purchase licensed tires from the Clipper Tire Company, is untrue. In face of my direct statement that I had done so by letter and received a written reply, this is an allegation that any ordinary business man would have hesitated to make without first making the fullest of inquiries. I stated that the letter could be seen at my office, but no attempt has been made to inspect it, and I am given the lie direct. The letter shall speak for itself. It reads as follows:—'11th September, 1901. Messrs. The Clipper Pneumatic Tire Company, Limited. Dear Sirs,—Kindly send me price list of Clipper-Michelin pneumatic tires, and say if you have 800 by 80 in stock for immediate delivery for a car weighing 15 cwt.' This letter was sent down by hand to Clerkenwell Road, and my messenger waited for a reply. He was handed the price list asked for and my own letter, with the following written at the foot:—'Less 10 per cent. off list prices. 800 by 80 out of stock at present; expected next week.' That an inquiry such as this can be completely overlooked—I am putting the mildest construction on it—does not redound to the credit of the gentleman responsible for the management

THE ROCHET LIGHT CAR.

A FEW months ago we illustrated the voiturette recently put on the market by La Compagnie Générale des Cycles et Automobiles Rochet-Petit, of Paris. This company have also followed the general tendency of the times and have introduced a light car, of which an illustration is given herewith. The motor, which is located under a bonnet in the fore part of the frame, comprises two water-cooled cylinders, and develops, at a speed of 750 revolutions per minute, 6 h.p. Electrical ignition is adopted, the water-circulation being maintained by a pump and radiator. The engine transmits its power through a friction clutch to the variable speed-gear, which is adapted to give four speeds forward and a reverse motion. The change speed-gear is similar to that in the heavy touring cars built by the Rochet Company, and as this was described in our issue of August 11, 1899, it is not necessary to describe it on the present occasion. From the gear box, a longitudinal shaft with universal joints transmits the power direct to the rear live axle through the intermediary of bevel gearing. Inclined wheel-steering is fitted, as also are wooden wheels, these being shod with pneumatic tires. A pedal controls the friction clutch and a band brake on the variable speed-gear shaft, while a hand lever at the side operates band brakes on the hubs of each of the rear wheels. The car complete weighs between 9 and 10 cwt., and can attain a speed,



THE ROCHET 6 H.P. LIGHT CAR.

of the company. I now leave it to the good taste of Mr. Siddeley to withdraw the statement he has made. With regard to my other communications with the company, they were per telephone, and although it is possible, it is not conceivable that these communications should have been forgotten, even if they were unrecorded. It only remains for me to add that whatever my professional opinion may be or has been, I have in my private capacity as an automobilist always respected the patent rights of the Dunlop Company."

KING GEORGE OF GREECE and the Duke of Sparta having each lately acquired motor-cars, improvement may be looked for in the roads in Greece.

A SET of castings suitable for small bicycle motors has been put on the market by Messrs. J. H. Norton and Co., of 71, Scrutton Street, Great Eastern Street, E.C., and also by the Carlton Motor Company, of Elm Grove, Cricklewood, N.W.

DR. H. E. DENNY, of Longtown, near Carlisle, recommends any motorist passing through Cumberland in need of supplies or repairs to look up Mr. James Fendley, of the Cycle and Motor Works, Cecil Street, Carlisle.

the makers claim, of 30 miles an hour. The illustration shows a *tonneau*, but any type of carriage body can be fitted.

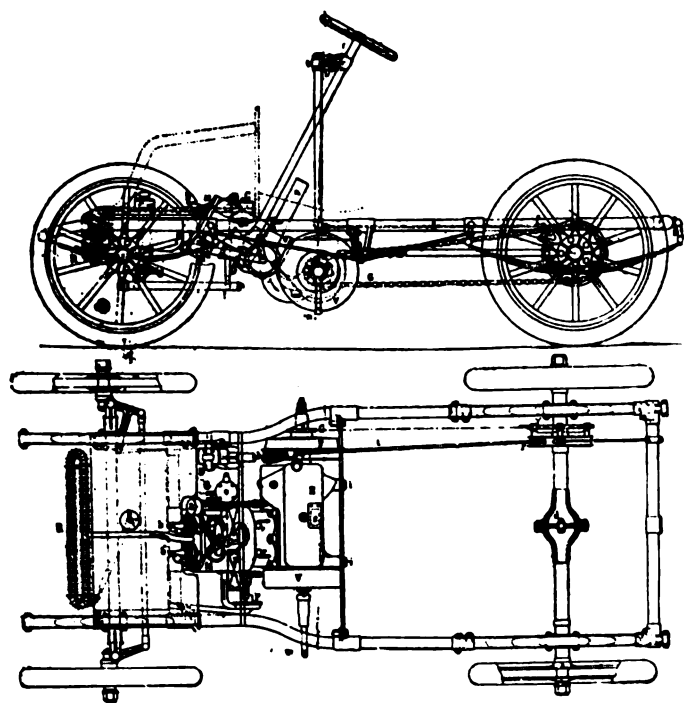
ON Thursday evening next the annual dinner of the Automobile Club will be held in the Whitehall Rooms of the Hotel Metropole.

THE Locomobile Company of America have this week shipped from London four steam "Surreys" to the order of Mr. Zacharias, for the Malayan Transport Company, of Kuala Lumpur, the vehicles being intended to carry mails.

WITH regard to the new Mercedes 9 h.p. light car which the Motor Traction Company are sole importers of, and dealers in, one of these vehicles was taken for a trial trip on Tuesday on a non-stop run from Kennington to Crawley and back, when the principal advantages claimed for the car were developed in an extraordinary degree. We understand that the water-cooling arrangement is especially efficient, the total amount of water consumed during the journey being measurable in the proverbial egg cup, the water in the tank at the end of the trip being furthermore only lukewarm.

THE "BRITISH IDEAL" CAR.

WE are this week able to publish a detailed description of a new car, which, under the name of "British Ideal," has just been put on the market by Messrs. Montague Hawnt and Company, of 146, Clerkenwell Road, London, E.C. The vehicle comprises a number of new features, it being built to the designs of M. Schandel,



FIGS. 1 AND 2.—ELEVATION AND PLAN OF "BRITISH IDEAL" CAR.

of Bordeaux, whose British and Colonial patents have been acquired by Messrs. Hawnt and Company. To deal first with the motor, this in the car illustrated is of $6\frac{1}{2}$ h.p. The engine (Figs. 4 and 5) is of the two-cylinder horizontal type; the cylinders are cast in one piece with the explosion chambers which permits the water jacket to be carried

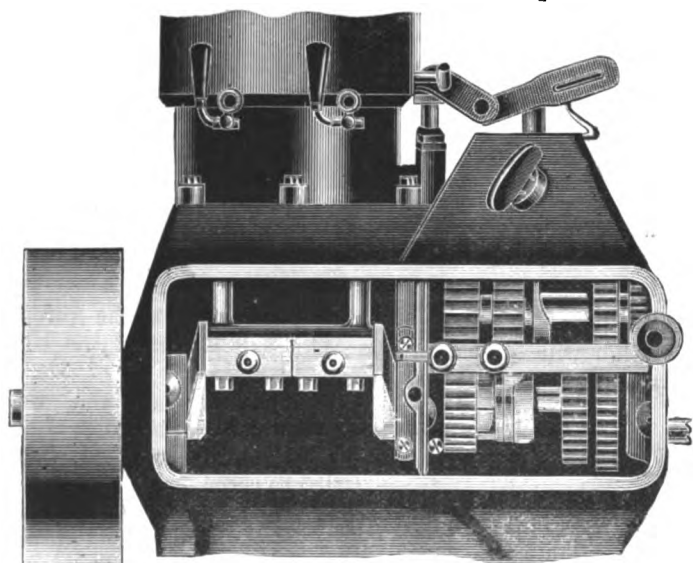
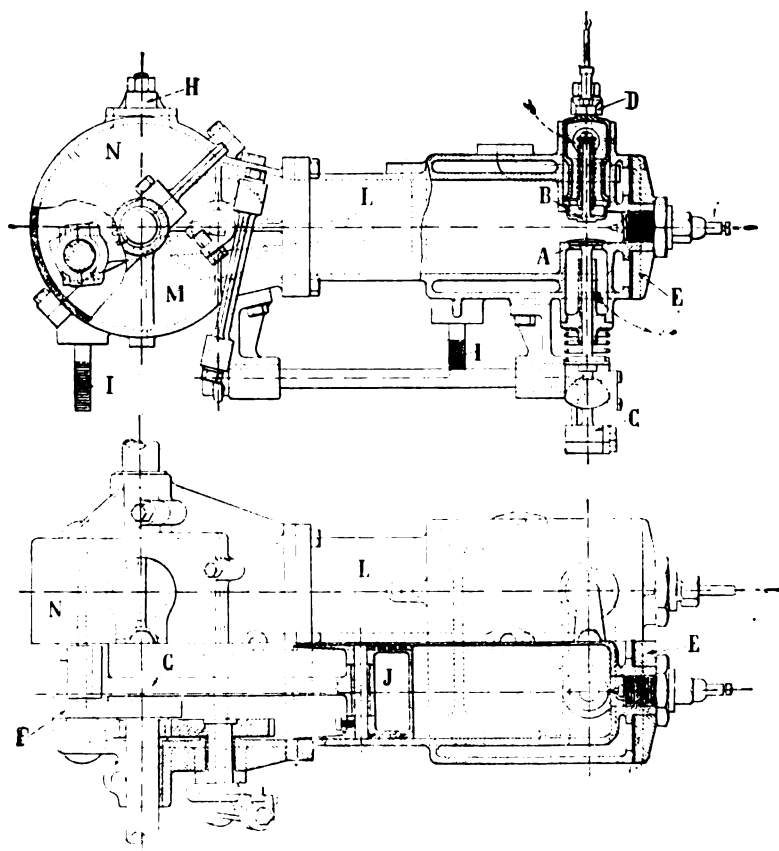


FIG. 3.—VIEW SHOWING INTERIOR OF ENGINE CRANK AND VARIABLE-SPEED GEAR CASE.

around the valves as well as the cylinder proper. It also does away with the packed joint between the cylinder and head, which is frequently a source of trouble. The water jacket is sealed by a separate plate E (Figs. 4 and 5), which is fixed in position by two nuts. By removing this plate the water jacket can be

cleaned out when necessary. The crank case N is of aluminium. It is provided with a door, H, of the same material, which will turn on a stud after a bolt has been removed, and uncover two openings which permit a rapid inspection of the encased parts. The casing itself is so designed that it can be easily removed should repairs have to be made on the crank shaft, the cam-shaft gears, or the connecting rods and pistons, it being unnecessary to loosen the cylinders or remove any of the piping. The arrangement of the valves is also such that they can readily be taken out. An arm D (Fig. 4) is held on the inlet valves by a nut, by unscrewing which the two suction valves B can be withdrawn, as also their seating, and the exhaust valves immediately below, after, of course, disconnecting the springs of the latter. The second motion gear wheels by means of which, through a connecting rod or oscillating lever, the exhaust valves are actuated, are located inside the crank chamber. Electrical ignition is employed while the water circulation is maintained by a pump and radiators. The diameter of the cylinders is 94 mm., and



FIGS. 4 AND 5. ELEVATION AND PLAN OF MOTOR

the stroke 120 mm., the normal speed of the engine being 900 revolutions per minute.

Although the motor is of the horizontal type, it will be noticed from the elevation (Fig. 1) that while it is located in the fore part of the frame it is not fixed horizontally, but at a slight angle with the ground, the cylinder ends being foremost and uppermost. The claim made for this arrangement is that not only does it prevent oil entering the combustion chambers, but it enables the sparking gear to be readily inspected. A special form of spray-type carburettor, automatic in action, is employed to furnish the explosive mixture.

As regards the transmission gear, it may here be mentioned that three speeds forward and a reverse motion are available. The engine shaft is extended at one side and terminates in one half of a friction clutch. The female part of the clutch is carried on the end of a sleeve which surrounds the engine shaft. On the sleeve are mounted a series of spur-wheels, constantly in mesh with corresponding pinions on a short countershaft forward of the engine shaft. The various speeds are all actuated

by one lever on the steering column, the desired pair of pinions being made to transmit the power by means of small clutches. The variable-speed gear is entirely enclosed; in fact, the crank case and the change-gear case are practically all in one, which is dust proof and oil containing. From the countershaft the power is transmitted by a single Brampton roller chain to a sprocket surrounding the differential gear on the rear axle.

The outer surfaces of the clutch on the engine form a band brake actuated by a pedal. The first result of depressing this pedal is to disengage the clutch and so put the motor out of gear from the transmission; by further depressing the pedal the brake is applied. There is also an emergency band brake on the differential gear. This is operated by a hand lever, and like the pedal brake its first action is to disengage the friction clutch on the engine shaft. It should be added that the brakes act equally well, whether the car be running in a forward or backward direction. The frame is of tubular construction, and as it carries the motor and transmission gear, practically any form of carriage body can be fitted, fig. 5 showing a very comfortable four-seated tonneau. The road wheels are of the artillery type, and are all thirty inches in diameter, shod with Clipper-Michelin pneumatic tires. The car complete weighs about nine cwt., and with four persons up can attain a speed of thirty miles per hour. The petrol tank, which is located under the front seat, has a capacity of six gallons, while the water tank, which is located in the fore part of the frame, holds five gallons. Special attention has been devoted to the lubrication of the various parts.

We understand that a 12 h.p. car on similar lines will be ready for the market early in the new year.

WE hear that the Ormonde Motor and Cycle Company, of Wells Street, Oxford street, W., are about to put a new motor-bicycle on the market. A machine on the Minerva system is also about to be introduced by Messrs. W. A. Starley and Co., of St. John's Works, Coventry.

THE fastest mile ever accomplished on a motor-cycle, or automobile of any description, stands to the credit of Osmont, the well-known Parisian motor-tricyclist. Recently he covered a mile on the road near Paris in the world's record time of 58 3-5th seconds, a rate of sixty-two miles per hour, his mount being an 8 h.p. De Dion bicycle shod with Dunlop tires. The distance was accurately measured off, and the time taken by two official timekeepers of the A.C.F.

COL. SIR HOWARD VINCENT, M.P., the Colonel Commandant of the Queen's Westminster Volunteers, in the Regimental Orders for the present month invites the members of the corps to submit designs for a carriage capable of being drawn by three horses abreast or propelled by oil, for the conveyance of one officer, one sergeant, and twenty infantry, with their rifles, great coats, and rations and forage for three days, and, if possible, three cycles and three saddles. The vehicle must not weigh more than 20cwt., and must be sufficiently strong to go over rough ground.

HERE AND THERE.



MR. J. I. THORNYCROFT drives a light 7 h.p. Panhard.

MOTOR-CARS will again figure in the Lord Mayor's Show to-day (Saturday).

MR. ARCHIBALD FORD is interested in the publication of a new book on "Automobilism" which will be ready at Christmas.

IN American automobile circles cars with the engine under a bonnet in the fore part of the frame à la Daimler are known as "Bay windows."

PRINCESS MAUD and her husband, Prince Charles of Denmark, are converts to automobilism. The Princess has recently received from Paris a well-appointed Panhard, which, it is reported, she already drives with considerable skill.

THE inaugural meeting of the winter session of the Nottingham and District Automobile Club took place on the 1st instant. An informal dinner preceded the meeting, at which Mr. E. W. Wells (Vice-president) presided. The Chairman apologised for the

unavoidable absence of the President, Mr. R. Millington Knowles, J.P., after which Mr. Henry Sturmey gave an address on matters generally of interest to automobilists.

AT the last meeting of the Southwark Borough Council, a resolution was adopted to the effect "that a sub-committee of the Works Committee or of the Council (as the Council may deem fit) be appointed to take into consideration the desirability or otherwise of using horseless vehicles for the work of the Council."

MR. C. J. WRIDGWAY writes us from Philadelphia, stating that he has severed his connection with the De Dion Bouton Motorette Company, of Brooklyn, and has taken up an

appointment with Messrs. Banker Bros., of the Automobile Palace, Philadelphia. This concern, in addition to acting as agents for a large numbers of motor-car builders, does the biggest motor-car storage business in Pittsburg.

MESSRS. DE DION BOUTON, Limited, who have removed to larger premises at 28, Brook Street, Bond Street, W., inform us that they are now prepared to let cars out on hire. They have had very many enquiries during the past season for cars on hire, but owing to the difficulty of filling orders in time and finding suitable drivers, they were unable to undertake this class of work.

THE opening of the Shank Bridge at Arniston, Dalkeith, which connects the Edinburgh district with the Gala and South of Scotland districts generally, will be a great boon to motorists, this being a favourite route. The erection has cost £10,000. In the presence of a large company of gentlemen, the bridge was opened the other day by Sir Robert Dundas, who drove across in his carriage and pair, followed by the 6½ h.p. Daimler of Messrs. Adam Young and Son, Eskbank, Dalkeith, in which were the representatives of the Press.



FIG. 6.—THE "BRITISH IDEAL" CAR WITH CANOPY. (See opposite page).

SIR WILLIAM MILLER, has, we hear, ordered a Wolseley car.

We learn that Mr. Leslie Bucknall, of Sevenoaks, Kent, has bought the 40-h.p. Panhard carriage driven by Mr. Jarrott in the Paris-Berlin race, which recently arrived in England.

THE UNITED MOTOR INDUSTRIES, Limited, have removed from 40, Holborn Viaduct, E.C., to larger premises, 42, Great Castle Street, Oxford Street, London, W., where they will be able to keep a still larger stock of motor accessories, etc.

We hear that M. Santos-Dumont, the well-known motor-balloonist, has signified his intention of coming to reside in England, and will, in all probability, become a prominent and active member of the new Aero-Club of the United Kingdom.

It is quite on the boards that a big automobile race will be held in Australia at no distant date. The Dunlop Company is interesting itself in the matter and it is said one of the Melbourne daily papers is likely to come forward with a handsome prize.

THE writer, last week, endeavoured to purchase in London a 960 x 90 mm. Clipper-Michelin outer cover, but was unable to do so, nor was he able to ascertain when it would be possible for him to obtain one. The supplies were stated to be very uncertain.

MESSRS. DENNIS BROS., Limited, of Guildford, ask us to mention that the new building in progress will alone be capable of finding employment for over 150 hands. This is in addition to their present factory, which finds employment for over 100 workmen.

At Dunmow, John Bagster, of Brook-end, Bishops Stortford, was charged with being drunk while in charge of a motor-car at Takeley, on September 29th. After hearing the evidence the Bench retired, and after a short consultation the Chairman announced that the case was dismissed.

MR. F. F. WELLINGTON informs us that he has returned to town and is now living in the house adjoining the works at 36, St. George's Square, Regent's Park, N.W. He will be pleased to give assistance and attention to any motorist who may be in difficulty at any hour of the day, including Sundays.

MR. J. H. KNIGHT, lecturing on "Two Years' Motor-car Progress," on Thursday, last week at the Camera Club, said that the most noticeable fact was that English manufacturers had come to the front. He thought that motor-cars might be allowed to go a little faster than twelve miles an hour without police interference.

CANDIDATES for municipal honours are nowhere without the motor-car. At Stockton last week one of the elected pressed a motor-car into his service, and found the new mode of conveyance an admirable attraction to the working class constituents in the ward, who, eager to enjoy the sensation of riding in a motor-car, went willingly to the poll.

ANNOUNCEMENT is made that a number of wealthy automobilists in New York, who own country places out on Long Island, will build a private road from Roslyn and Hampstead to Long Island City, in order that they may drive their cars as fast as they choose in coming to the city. The road, which will be 23 miles long, will be fenced in.

THE NEW YORK TYRE COMPANY, LIMITED, has been registered with a capital of £10,000 to carry on the business of manufacturers and vendors of, agents for, and dealers in rubber and other tires for cycles, motor-cars, and vehicles, and the business of cycle and motor-car builders, engineers, rubber merchants, etc. The registered office is at Tavies Inn, Holborn, E.C.

It would be seen from our last issue that there was a likelihood of two Aero Clubs being brought into existence. We are glad to learn, however, that the difficulty has been overcome. Mr. Simms, who has been at work on his "pet" scheme for some time, was unaware that the Committee of the Automobile had taken the matter up. Henceforth all energies will be centred on the Aero-Club of the United Kingdom, which has already about 80 members.

THE SOUTHSEA ANNIVERSARY RUN.

THE following is a list of the vehicles that have so far been entered for the Anniversary Run to Southsea, on the 16th inst.

Official Name.	Name of Owner.	Name of Makers, &c.	H.P. of motor.	Motive power.*	Number of seats.	
Allons	Mr. C. Cordingley.	Motor Manufacturing Co.	16	PS	4	NSC†
Atalanta ...	Mr. Noel B. Kenealy.	Delahaye.	10	PS	4	NSC
Antrona ...	Mr. Henry Edmunds.	Daimler Co., Ltd.	10	PS	4	—
Bee	Mr. G. D. Barnes.	Renault Frères	5	PS	4	NSC
Blackamoor	Mr. E. H. Bartlett.	Mors	10	PS	4	NSC
Blondine ...	Mr. Granville M. Kenyon.	Darracq and Co.	6	PS	4	NSC
Bubble	Mr. Owen H. Bayldon.	Reading Steam Carriage Co.	5	S	2	—
Bumper ...	Mr. Thomas Toovey.	Peugeot Frères	8	PS	4	—
Butterfly ...	Mr. Fritz Muhlenkamp.	Panhard and Levassor.	6	PS	4	NSC
Cherub	Mr. T. W. Leith.	Century Engineering and Motor Co.	5	PS	2	NSC
Daisy	Mr. Oswald B. Colls.	Weston Motors	6	S	2	—
Daydreams	Mr. H. Austin	Wolseley Tool and Motor Car Co., Ltd.	20	PS	4	NSC
Doctor	Mr. H. Belcher	Humber, Ltd.	6	PS	4	NSC
Eagle	Mr. Walter Williams.	Daimler Company, Ltd.	6	PS	5	NSC
Electrical...	Mr. Theodore Chambers.	Krieger - Leitner.	9	E	4	NSC
Eve	Mr. Frank H. Butler.	Renault Frères	5	PS	3	NSC
Gleaner ...	Col. H. N. B. Good.	New Orleans Motor Co. Ltd.	3	PS	2	NSC
Gondola ...	Mr. F. W. Rogers.	Daimler Company, Ltd.	6	PS	4	—
Infant	Mr. F. Howard Mercer.	Peugeot Frères	5	PS	3	—
Kathildred	Mr. Harold Johnson.	Peugeot Frères	6	PS	3	—
Kit	Mr. Ballin Hinde.	Panhard and Levassor.	12	PS	4	—
Le Chat Noir	Mr. Oliver Stanton.	Daimler Company, Ltd.	24	PS	4	NSC
La Dor-meuse	Mr. C. K. Gregson.	De Dion Bouton, Ltd.	3½	PS	2	NSC
Le Limacon	Mr. S. F. Edge	D. Napier and Son.	9	PS	4	NSC
La Limace	Mr. T. A. Common.	Motor Manufacturing Co.	6½	PS	4	NSC
Le Papillon	Mr. R. V. O. Graves.	Mors	5	PS	3	—
Leda	Mr. F. E. Swann.	Hurst and Lloyd.	6	PS	4	NSC
Leonidas ...	Mr. John J. Leonard.	Werner	1½	PS	2	—
Novelty ...	Mr. H. Loeffler	James and Brown.	8	PS	4	NSC
Old Blue...	Mr. F. Guy Lewin.	Motor Manufacturing Co.	5½	PS	4	NSC
Ophir	Mr. Ernest Martin.	Motor Manufacturing Co.	6	PS	5	NSC
Owl	Mr. Arthur F. Mullier.	Daimler Motor Co., Ltd.	6	PS	4	NSC
Pacer	Mr. J. Van Hooydonk.	Phoenix Motor Works.	1½	PS	1	—
Paratus ...	Mr. J. M. Gorham.	De Dion Bouton, Ltd.	4½	PS	2	NSC
Petrols ...	The Hon. C. S. Rolls.	Panhard and Levassor.	20	PS	3	NSC
Pioneer	Mr. Frederick R. Simms.	Geo. F. Milnes and Co., Ltd.	12	PS	5	—

* Petroleum spirit is indicated by PS; Steam by S; Electricity by E.

† Vehicles entered for non-stop certificate are denoted by the letters NSC.

Official Name.	Name of Owner.	Name of Makers, &c.	H.P. of motor.	Motive power.	Number of seats.
Premier ...	The Roadway Autocar Co.	Mors	10	PS	4 NSC
Powerful ...	Mr. Theodore Chambers.	British and Foreign Electrical Vehicle Co., Ltd.	8	E	4 NSC
Primrose ...	Mr. Lionel Savory.	Motor Manufacturing Co.	7	PS	2 NSC
Quiet	Mr. Victor Hart	W.T. and S. E. Botwood.	14	PS	4 NSC
Renown ...	The Roadway Autocar Co.	Mors	10	PS	4 NSC
Ripple	Mr. T. W. Staplee Firth	Motor Manufacturing Co.	6	PS	5 NSC
Slowcoach..	Mr. W. White-way	Decauville.....	9½	PS	4 NSC
Soupac	Mr. S. F. Beevor	Daimler Motor Co., Ltd.	6	PS	4 NSC
Split Pin ...	Mr. Roger H. Fuller	De Dion Bouton, Ltd.	6	PS	2 NSC
Tempter ...	Mr. F. B. Collins	De Dion Bouton, Ltd.	2½	PS	3 NSC
Unicorn ...	Mr. Walter Gutmann	Weston Motors	6	S	2 —
Whizzer ...	Mr. Herbert S. A. Smith	Panhard and Levassor	6	PS	4 NSC
Wanderer..	Mr. W. H. Kitto	Motor Trading Co.	7½	PS	4 NSC

The following entries have also been received, but owners have not yet selected names:—

Mr. Mark Mayhew, 20 h.p. Panhard.
 Mr. Dick Farman, 8 h.p. Morisse.
 Mrs. S. F. Edge, 6½ h.p. Gladiator.
 Mr. C. Jarrott, 40 h.p. Panhard.
 Mr. Walter G. Cromlie, 12 h.p. Knowles Chainless.
 Mr. H. T. Cave, 6 h.p. Panhard.
 Mr. G. St. M. Willoughby, 3½ h.p. New Orleans.
 Mr. Alan Hickman, 8½ h.p. Decauville.
 Mr. H. Bevan Swift, 2½ h.p. De Dion tricycle.
 Mr. A. W. Armstrong, 6 h.p. Daimler.
 The Motor-Car Co., Ltd., 8½ h.p. Decauville.
 The Motor-Car Co., Ltd., 8½ h.p. Decauville.
 Mr. G. H. Smith, an Empress car.
 Mr. M. Brooke, a Daimler car.

THE CRUSADE AGAINST UNREASONABLE PROSECUTION.

MR. MOFFAT FORD, the organiser of the Brighton Road Motor Patrol, writes us this week as follows:—

"In my operations for the purpose of combating the unfair action of the police towards motorists, which, I am glad to say, have proved a complete tactical success, I have discovered a very curious phase of automobile human nature, and that is, that until a motorist has actually undergone the process of being summoned and fined he cannot be made to appreciate the danger he runs from this source in every journey he undertakes.

"Two questions arise out of this discovery, which are as follows:—

"(1) Is every automobilist to be allowed to purchase experience in this way, because if he does the results will be (a) victory for the police and (b) death to the motor industry.

"(2) How are funds to be obtained to carry on the crusade; because however benevolent the purpose of a private individual with a red flag towards an advancing motorist may be, he cannot be persuaded to stop his machine for the purpose of contributing his mite towards the general funds established for his benefit. His reasons for not stopping, I presume, are somewhat as follows:—(a) There are police about. Good! Where are they? Thanks. This information he can obtain without stopping. (b) Nonsense. If there are police about I am quite smart enough to see them and slow down in time. I am not going to stop for anybody. And so on they go, because the road has been cleared for them by private enterprise.

"Now then, I think question 1 will be answered by everyone who has the interest of the industry at heart by an emphatic no. But question 2 needs a little thought before a reply is given. We have seen that the idea of making the path straight for the motorist and collecting a subscription from him towards the funds for that purpose is impracticable.

"I do not think that the automobile public generally will subscribe towards a general fund, for the very reason, as I have stated, that they

can in only one way be made to appreciate the danger such a fund would be utilised in obviating; although I am certain that the more public spirited amongst automobilists would be only too happy to contribute towards such a fund. As a matter of fact, I have received several offers of this nature which I have not yet been able to accept, because I hardly think that I, personally, am the proper party to receive such subscriptions.

"I venture, therefore, to suggest that this is a matter for manufacturers, agents, and the trade generally to take up for themselves, because if no one takes it up the trade will suffer and if it is properly taken up the trade will benefit.

"Let us see what an organised motor patrol for the three principal roads radiating from London itself for a distance of fifty miles would cost. We must bear in mind that the police have nothing else to do but lay in wait for motorists, and that they are prepared to do this every day for a twelvemonth if they wish to; consequently, our motor patrol must be prepared to do the same, and motorists can get no men to work for them on such permanent duty unless they pay them for doing so. Now I think that one cycle patrol man for every ten miles of roadway would be sufficient; that means five men for fifty miles of the Portsmouth road, and five men for fifty miles of the Great North road, and five men on the Brighton road, at say, 26s. per week (policeman's wage). Fifteen men at 26s. per week each would cost, say, £20, and this sum would make these roads 'safe' for motorists for one week. The question is, are those manufacturers and agents, who are largely interested in the London trade, prepared to subscribe amongst themselves £20 per week for six months for the purpose of preventing their trade being damaged and assist in its greater development. This is just an idea of mine for getting the necessary funds, and those automobilists to whom I have already proposed this idea seem to think pretty well of it.

"We have a practical scheme before us, but it needs funds, as I have shown, to carry it out."

FURIOUS DRIVING CASES.

At Towcester, William Sheppard, of Towcester, was summoned for furiously driving a motor-cycle at Abthorpe, on October 22nd. Defendant pleaded not guilty. P.C. Warman said on the date in question he was on duty in Abthorpe parish when he saw defendant driving a motor-tricycle towards Towcester at a very furious rate. By Mr. Sheppard: There was no one in the road. It would have been a dangerous pace if there had been. Mr. Sheppard said he had full control of the machine, and he did not endanger anyone, for there was no one in sight. The machine would not travel anything like twenty miles an hour. The magistrates said it was necessary to warn drivers of motor vehicles, but as there was no one about at the time, they would inflict no penalty, but only ask the defendant to pay the costs, 3s. 6d.

At Bakeswell Petty Sessions, Alfred James Poole, of London, described as a motor engineer, who did not appear, was charged with furiously driving a motor-car at Taddington on September 4th. Police-constable Wright said he timed the car, which went 700 yards in fifty-two seconds. He saw the defendant the same night going eighteen miles an hour. Orlando Hambleton, shoemaker, said "there was just a whirl of dust and the car was past." It was going at least eighteen miles an hour. Wm. Bown, farmer, said defendant was travelling at twenty miles an hour, and he could not see the car for dust. Harry Store, a coachman, swore defendant was travelling fourteen or fifteen miles an hour. The Chairman said he regretted that Poole was not in the dock, which was the proper place for him. It was a scandalous thing for a man in his position to drive about country villages and make himself a general nuisance. He would be fined £10 and costs.

At Brentwood, Mr. C. K. Peache, of Byfleet, was fined £3 and costs, for driving a motor-car at more than twelve miles an hour. The defendant, the police said, travelled from Ingatestone to Brentwood at twenty-one miles an hour.

At Hythe, William Barron was summoned for driving a motor-car at Selloe at excessive speed. P.C. Patrick said about 4.45 p.m. on October 1st he saw defendant on the Ashford Road, near Selloe, driving a motor-car at twenty miles an hour, having covered a quarter of a mile in forty-five seconds. Witness was accompanied by P.C. Haines. They were both at the end of the distance and both had watches with ordinary second hands. The Chairman: Were you expecting motor-cars to come by?—Witness: Yes, sir. We were there for that particular duty on account of numerous complaints. The defendant, who gave evidence, said that to the best of his belief he was travelling eleven miles an hour. It was impossible for him to go twenty miles an hour. The Bench inflicted a fine of £5 and 13s. costs.

At Ashford, Harold L. Cash, of the Clarendon Hotel, Gravesend, was summoned for driving a motor-car at Challock on the 12th ult. at a greater speed than twelve miles an hour. Defendant pleaded guilty to travelling above the limit, but said he was not going at the rate the policeman said he was—twenty-nine miles an hour. Sergeant Dann, of Ashford, stated that he was on duty on the Canterbury road between Challock and Chilham, with Corporal F. Fowle and P.C. Chandler, when he timed the defendant in travelling over a distance of a fifth of a mile, which was previously marked out. The defendant covered the distance in twenty-five seconds, this being at the rate of over twenty-eight miles per hour. A fine of £5 and 11s. 8d. costs was imposed.

At Huntingdon Petty Sessions, Randolph Wemyss, of Wemyss Castle, rifehire, was summoned for furiously driving a motor-car on the North Road. The hearing of the case occupied nearly three hours and ended in a fine of £3 3s. being imposed. Mr. Staplee Firth, who defended, gave notice of appeal.

At Ashton-under-Lyne, Frank Stockton, engineer, of Stalybridge, was summoned before the bench for furiously driving a motor-car. Police-constable Bratt proved seeing the defendant driving from Stalybridge to Ashton at the rate of twenty-five miles an hour. He was fined 10s. and costs.

At Guildford, Oscar Heindorff, of Witley, was summoned for driving a motor-car through Witley at a greater speed than twelve miles an hour, on the 13th ult. Sergeant Jarrett said that about 4.15 p.m. on the day in question he saw the motor coming along the Milford-road. He had measured a distance of 176 yards, and the car covered that distance in fifteen seconds, which gave about twenty-four miles an hour. Defendant stopped when asked, but said he did not think he was driving too fast. Mr. R. J. Cooke, who appeared for defendant, said that as there were only ladies on the car, and as they objected to come to a police-court, defendant must plead guilty.—Defendant said he was not intentionally going too fast.—Fined 50s.

At Altrincham, Ralph Jackson, of Altrincham, was summoned for having furiously ridden a motor-car at Baguley on October 2nd. The case was stated by a constable, who said defendant was driving at a rate of between twenty-six and twenty-eight miles an hour. Defendant denied driving at an excessive speed. He was testing a motor-cycle designed by himself, and it was not a motor-car. Defendant, who had been previously fined, was now fined £3 and costs.

At Kingston, Mr. Rowland Brown, of Earl's Court, was summoned for driving a light locomotive at a greater speed than twelve miles an hour, at London Road, Coombe, on October 3rd. Defendant was represented by Mr. Staplee Firth, who asked for an adjournment of the case, as his client was involved in civil action through a collision with a stone-cart at the time he was stopped by the police. The Bench acquiesced in the application, and the case was adjourned for a week.

At the Bolton Police Court, T. H. Thwaites, of Astley Bridge, was summoned for furiously driving a motor-car in Blackburn Road, Astley Bridge, on the 24th ult. Police-sergeant Plimmer deposed to seeing defendant's car travelling at the rate of twenty miles an hour. This was denied by Mr. Fielding, on behalf of the defendant, who with a witness stated that the gear of the machine precluded a greater speed than ten miles an hour being obtained. Defendant said he had travelled 7,000 miles with the car, and at the speed he was going on the 24th ult., when the officer saw him, which was not more than eight miles an hour, he could pull up within six feet. A fine of 10s. and costs was imposed.

Reported above are 10 prosecutions for furious driving. In 1 case the summons was dismissed, while in 9 cases fines amounting to a total of £32 13s. without costs were inflicted.

RUN DOWN BY A MOTOR CAR.

At Brompton County Court, last week, before Judge Stonor and a jury, Mrs. Sarah Goddard, a sempstress, of Markham Terrace, King's Road, Chelsea, brought an action against Mr. Edgar G. Lister, 78, Cheyne Court, Chelsea, claiming damages in respect of personal injuries, and loss sustained, owing, it was said, to the defendant's negligent driving of a motor-car. Mr. Hemmerde, counsel, appeared for the plaintiff, and Mr. Herbert Jacobs, counsel, defended. The plaintiff stated that on 28th April last she was crossing Brompton Road, near the top of Sloane Street. Before stepping off the kerb she looked both ways, and only saw a 'bus in front. On reaching near the middle of the road the defendant, in his motor-car, came along from Piccadilly towards her at a very fast rate. She stood for a moment, and when the car was within a yard or two of her she was startled by the loud sound of the horn; the next moment the car dashed into her. She was knocked down with great violence, and dragged along a considerable distance. Her right knee and ankle were badly bruised, and her face and shoulder also were slightly injured. After being treated at St. George's Hospital she was attended by a private practitioner, but had not yet fully recovered. The defendant stated that he had pulled up to allow some people to pass, and had only just started again when the plaintiff, who appeared to lose her head, ran back right in front of the car. He had two efficient brakes upon his car. The Judge: At what pace were you going? The defendant: I should say four miles an hour at the outside, and if the woman had not turned back, it would have passed safely. The jury found that the plaintiff "lost her head," and ran back in front of the motor-car, so contributing to the accident. This was a verdict for the defendant, for whom judgment was accordingly given. Counsel for the defendant intimated that his client intended making a payment to the plaintiff.

THE HORSE THAT DIDN'T LIKE MOTOR-CARS.

At the Brighton County Court, in a claim for compensation for the death of a valuable horse, the question as to the responsibility of a hirer when in charge of such an animal was the chief point in dispute. The plaintiff, Mr. James Stuart Smith, a livery stable keeper in Steine Street, Brighton, claimed £50 damages from Mr. Cecil Witherby, of Hanover Park, Peckham, on the ground that the latter had last August "wrongfully" driven the horse which he had hired from Brighton to Ringmer, whereas he had

only hired the animal from Brighton to Bramber; and that in consequence the horse met with an accident and had to be killed. Plaintiff stated that the horse in question was a "funny one with motors," and that had he known that defendant intended driving to Ringmer he would have sent another horse, as there were usually many motor-cars on that road, whereas the Bramber road was comparatively free from them. Expert evidence was called to prove that the horse was killed after injuries sustained by shying at a motor-car. It was agreed on both sides that there was no negligence in the actual driving, so that the point on which counsel argued at most length was as to whether or not a special route had been prescribed for this particular horse. His Honour decided in favour of the plaintiff, being of opinion that the horse had been let out on the understanding that it should go to Bramber only, and that the defendant, in deviating from that route, practically made himself the "insurer" of the horse.

A DISHONEST MOTOR-BUS DRIVER.

At the South Western, London, Police Court, William Fenver, a motor-bus driver, was charged with stealing 2s. 2d. belonging to Mr. F. J. Bell, proprietor of the motor-omnibuses plying between Putney and Piccadilly. Police-sergeants Moore and Mew, attired in civilian clothing, entered the defendant's 'bus at Putney and tendered a shilling for their fare. The prisoner was seen to put the coin in his pocket instead of into the box provided for the purpose, and gave the officers 4d. change. Another passenger handed him 6d., and this he also put into his pocket. The fares of five other passengers he put into the box. On the return journey the officers handed him 2s., and after he had given them 1s. 4d. change, he pocketed the florin. At the end of the journey the two officers arrested him, and he was found to be possessed of 18s. His explanation of his conduct was that he had no coppers for change, and was therefore unable to put the fares in the box. Mr. Bell said every driver was provided with change, and there was a stringent rule that all fares should be put into the box by the passengers themselves. The prisoner was sent to gaol for twenty-one days.

DAMAGES FOR A DOG.

At Dundee, last week, proof was led in an action raised against a cycle agent, in which pursuer asked for £6 in connection with the death of a collie dog, which was run over by a motor-car driven by defender in the Lochlee Road on August 27th. Pursuer alleged that the accident was occasioned through the negligence and fault of the defender in driving his motor-car in a reckless and unwarranted manner and at such a rate of speed as prevented the defender having the motor-car under proper control. Defender, on the other hand, said the dog dashed in front of the car, and it was impossible to avoid the accident. The Sheriff said he was of opinion that if defender had not been going so fast the accident could have been avoided. Dogs and cats, blind people and drunkards, had as much right on the streets as motor-cars. He thought there should be guards in front of wheels of motor-cars, so as to drive a dog aside if it collided with it. He awarded the pursuer £3 damages, with 10s. expenses.

PANHARD ET LEVASSOR v. THE MOTOR MANUFACTURING COMPANY.

MR. JUSTICE COZENS-HARDY, in the Chancery Division, last week ordered this action, with the consent of both parties, to stand out of the list until November 25th. It was stated that the plaintiffs sought an injunction to restrain defendants from using the words "Panhard and Levassor" in connection with motors manufactured in this country. The defence was that the words did not denote that the motors were made by plaintiffs, but meant a particular kind of manufacture. Negotiations were on foot for a settlement.

MERCERS' COMPANY v. THE AUTOMOBILE AGENCY.

ON Wednesday Mr. Justice Kekewich acceded to an application to postpone the hearing of this action until the 19th November. The action was one to restrain the defendants from carrying on business in such a manner as to cause a nuisance to the plaintiffs.

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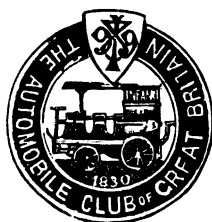
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COMMENTS.



THE anniversary dinner of the Automobile Club is to take place at the Whitehall Rooms, Hotel Metropole, as we go to press. It is understood that the principal speakers of the evening will be the Rt. Hon. the Earl of Onslow, Under Secretary of State for the Colonies, who will reply to the toast of His Majesty's Ministers, which will be proposed by the Rt. Hon. Sir Francis Jeune, K.C.B., president of the Probate and Divorce Court.

The toast of the evening, viz., The Automobile Club and its Affiliated Clubs, will be proposed by the Rt. Hon. Henry Chaplin, M.P., who, as president of the Local Government Board, introduced the Locomotives on Highways Act of 1896, and will be replied to by Mr. Roger W. Wallace, K.C., chairman of the Club and Sir Alfred L. Jones, K.C.M.G., the chairman of the Liverpool branch of the Club. Amongst the guests are the Duke of Sutherland, member of the General Council of the Club, the Rt. Hon. G. Shaw-Lefevre, Sir Lewis M'Iver, Bart, M.P., Col. Elmslie, President of the Experimental Sub-Committee of the Mechanical Transport Committee of the War Office, and Mr. Williams Benn, chairman of the Highways Committee of the London County Council.

The Anniversary Run to Southsea.

WE are informed by the Automobile Club that 190 vehicles have been entered for the run to Southsea, to-day (Saturday). The run will take place irrespective of the state of the weather. The Committee of the Automobile Club, whilst in no way authorising any speed in excess of the legal limit, are instituting a minimum time for each stage of the journey, in order to prevent wilful and flagrant defiance of the law. If a vehicle arrives at the end of a stage before the expiration of the minimum time, the vehicle will be disqualified from obtaining a non-stop certificate, and the driver of the vehicle may be disqualified from taking part in any future trial run or race held under the competition rules of the Club. Further, there will be intermediate timekeepers, and if it be found that a vehicle has been driven at a high speed for the first part of the stage, thus necessitating an absurdly low speed for the latter part of the stage, the vehicle and driver will be subject to similar disqualification. Speaking generally, therefore, it is hoped that so long as the vehicle in front is not in obvious difficulties the drivers will refrain as much as possible from passing. The Club Committee beg that, in view of the fact that this is the largest collection of vehicles which has ever been seen in this country, drivers will co-operate with the Committee in making the run a success, in avoiding all risks and possibilities of accident, and especially in avoiding the causing of inconvenience to other users of the road.

Two Cups Offered.

In connection with the run, Mr. C. Cordingley offers a prize of a ten-guinea cup for the car having the best appearance, both as regards the car and its occupants. The prize to be given in accordance with the votes of competitors to be recorded at Cos'am. Mr. Edmunds, Chairman of the

Tours Committee, being anxious to encourage the moderate driving of motor-vehicles, is also giving a cup to the member of the Automobile Club owning the car among those receiving the diplomas under non-stop conditions, which starts punctually from Horse Guards Avenue and arrives last at the end of each stage. In case of ties, this cup will be given to the car running nearest to the twelve miles per hour average over the whole run.

A Scotch Anniversary Run.

WHILE motorists down south will be wending their way to Southsea, the western section of the Scottish Automobile Club will be enjoying a run from Glasgow to Luss, starting from Woodside Crescent, Charing Cross, at one o'clock in the afternoon. The Committee invite all automobilists, whether members of the Club or not, to take part in the run, and it is hoped that members will make a special effort to enlist the support of their friends. Mr. H. M. Napier has extended a general invitation to the party to afternoon tea at Luss.

The Aero Club.

THE inaugural meeting of the Aero Club of the United Kingdom took place on Wednesday evening at Whitehill Court. Colonel Templer occupied the chair, and there was an attendance of forty members and friends. The chief business of the evening was the election of M. Santos-Dumont to the honorary membership of the Club, and the decision to invite this distinguished aeronaut to a banquet to be held towards the end of the present month. On Friday two of the members most active in the formation of the Aero Club—Mr. F. H. Butler and the Hon. C. S. Rolls—were, weather permitting, to make a balloon ascent from the Stamford Bridge grounds.

A New Series of Articles.

IN view of the increasing attention which is being devoted to the question of navigating the air, we are glad to be able to announce that we have arranged with an expert to write for us a series of articles on "Mechanical Flight Up to Date." The articles, the first of which will appear shortly, will be fully illustrated. Much useful information of a reliable nature will be embodied, which should serve as a guide to the many tyros who are no doubt contemplating an early flight. In the course of the articles it is proposed not only to deal with the experiences of aerial navigators, past and present, but also with the construction of air-ships and the motors by which they are propelled.

The Automobile Club's Winter Session.

THE first house dinner of the winter session of the Automobile Club will take place on Wednesday, December 11th, at 7.30 p.m. It is hoped that after the dinner, Professor Hele-Shaw, LL.D., F.R.S., may be able to arrange to read a paper on "roller bearings." The reading of the paper will be followed by a discussion. In 1902, house dinners will be held and papers will be read on the second and fourth Wednesdays in every month, up to and including March. Messrs. Longman

intend to publish next year, as one of the Badminton Series, a book on motoring. The book, which has been undertaken by Mr. Alfred Harmsworth, who will enlist the assistance of some of the members of the Automobile Club, is intended for the guidance and assistance of ladies and gentlemen who have no technical knowledge, and who are about to purchase, or have recently purchased, motor-vehicles. The Club Committee feel that it would be in the interests of the motor movement if members of the Club were to render assistance in making the important parts of the work as clear and as perfect as possible. Five papers will therefore be read after house dinners during the forthcoming season, which will be specially written for the Badminton book, and members will be invited to discuss the papers with a view to bringing them to perfection. The subject of the papers will be:—(1) The possible idiosyncrasies (other than ignition) of the petroleum spirit engine. How to discover and remedy them. The Hon. C. S. Rolls is to be invited to read this paper. (2) Ignition in petroleum spirit engines. Systems. Possible failures and how to discover and remedy them. (3) Reminiscences. This chapter, while intended to convey instruction to beginners, is at the same time designed to contain amusing incidents of the early days of motoring. These incidents might, if not recorded very quickly, be forgotten. A member of the Club will read a paper comprising the most amusing and, at the same time, instructive incidents within his knowledge, and other members will be asked during the discussion to relate additional incidents in order that the best incidents may be selected and included in the book. (4) Electric vehicles. (5) Steam vehicles.

A Chance for Motor-Cars.

RECENTLY we commented on the growing network of tram-lines with which London was becoming surrounded, and deplored, from the point of view of the pleasure-loving motorist, the difficulties that are being added to an easy and safe way out of the great Metropolis. Those who had feared the further destruction of the roads in Middlesex will regard with complaisance the refusal of the Light Railway Commission to sanction the scheme of the Middlesex County Council tramway scheme from Wembley to Harrow, the Cricklewood to Harlesden proposals, the Harrow to Edgware system, and the Kilburn High Road tramway. Surely, with all these proposals receiving some degree of local support and not finding favour with the Commissioners, there ought to be a splendid opening for a public motor-car service in some of these districts.

Motor-Bicycles.

AT the Coventry Technical Institute on Friday, last week, a lecture was given upon motor-bicycles by Mr. G. D. Leechman, Hon. Secretary of the Cycle Engineers' Institute. In the course of his lecture Mr. Leechman said the motor-bicycle was the smallest and lightest automobile vehicle made. As such it possessed certain advantages, and he thought, taking the horse-power into consideration, it was the fastest and most economical to run. The motor-bicycle could not be regarded as a single entity, but as consisting of two separate and distinct parts—the motor and the bicycle, or, rather, the bicycle and the motor. Two points to decide were, which wheel to drive, and where to place the motor, so as to drive the bicycle easily and avoid side slip. Some people supposed it was an advantage to have the centre of gravity low, but he held that purely from a balancing point of view on a bicycle it was desirable to have the centre of gravity as high as possible in order to avoid side slip. There were two causes of side slip. First, from riding over uneven, greasy surfaces, and in this case if the centre of gravity was low the rider would not have a chance to recover himself. The higher the centre of gravity the slower the oscillation and the more chance of correcting any disturbance. The other source of side slip was set up by counteracting the centrifugal force in turning round corners, but in regard to this matter the position of the centre of gravity did not make any difference and did not enter into the calculation.

Mr. Leechman went on to consider such points as the position of the motor, inclination of the cylinder, the question of brakes, and the durability of belts. A number of slides were shown to illustrate the various types of motor-bicycles which have been introduced.

A Cure for Insomnia.

WHEN the medical profession seriously studies the effect of automobilism on the health of those who indulge in the sport, we believe a great impetus will be given to the progress of the motor-car. The average Englishman is a utilitarian, and if he is assured that he can secure a healthy body while rapidly doing his business he will be all the more easily converted and conquered. It is said that the use of the motor-car has practically cured a tendency to insomnia from which His Majesty the King had suffered for some time. The frequent motor-car trips in which His Majesty indulged while on the Continent, some of which were pictured as well as described in our columns, were not unassociated with the desire to get rid of sleeplessness; and apparently they proved most successful. As an appetiser the motor-car is a boon to hotel proprietors; as a preservative of health it will not prove so lucrative to the doctor.

Another Warning.

DESPITE the insistence with which we have endeavoured to persuade motorists to conduct themselves in a reasonable way, there are still drivers who ignore the feelings of others and persist in disregarding ordinary courtesy. They are a small minority, it is true; but the majority suffer because of their foolishness. The other day, a Panhard car, driven by a Frenchman and carrying two passengers, stopped at the establishment of Mr. H. L. W. Lusted at Alresford (Hants), for petrol. After being supplied the driver started the engine, and in turning round drove right on to the pavement, almost pinning a sergeant of police to the wall. Had the driver reversed about ten yards, there would have been ample room for his evolution. Not satisfied with that, he started off quickly, and ere the town was left was reported to be travelling at the rate of sixteen miles an hour. The wonder is that the policeman did not wire forward and have the driver summoned. Such conduct is most reprehensible, and we sympathise with motor-car repairers and others who are friendly with the local police, for incidents such as this tend to create bad feeling; and in these days of threatened legislation motorists cannot be too careful with regard to inciting the forces of ignorance and prejudice against them.

The Regulation of Motor-Vehicles.

ON August 1st last the Club Committee of the A.C.G.B.I. appointed a Special Legislative Committee to consider what should be the provisions of a new Act for the regulation of motor-vehicles. The Committee includes, among others, the following gentlemen:—The Right Hon. Sir Francis H. Jeune, K.C.B.; the Right Hon. Sir J. H. Macdonald, Lord Justice Clerk of Scotland, and Mr. Eric Chaplin. The Committee first met on August 22nd, and have since held several meetings. It has been found that the matter is one which requires most careful consideration, and it is possible that the suggestions of the Committee may be submitted to the members of the Club at an evening meeting during the forthcoming winter session.

The 1902 Nice Week.

WE have received a copy of the preliminary programme of the week of fêtes organised by the Automobile Club of Nice. The "week" will be opened by a *Corso Fleuri*, or procession of decorated automobiles, on Sunday, April 6th. On Tuesday, April 8th, there will be a speed contest over the Nice-Aix-Senas-Salon-Nice road, the distance being 462 kilometres, and a race for tourist cars over the Nice-Druguignan-Nice road.

(193 kilometres). On Wednesday and Thursday the various competing cars will be placed on exhibition in the *garage* of the A.C.N. Friday, April 11th, will see the mile and flying kilometre speed contest on the Promenade des Anglais, Nice. The annual La Turbie hill-climbing contest will be held on Saturday, April 12th, the festivities being brought to a close on Sunday, April 13th, by a *Concours d'Elégance*.

Half-Penny Motor-Buses.

THE syndicate interested in placing motor-buses on the streets of Birmingham is now awaiting the sanction of the Watch Committee to run the new vehicles over the six selected routes. It is hoped that this will be obtained in time to allow of the inauguration of the service on New Year's Day. The vehicles are seated for fourteen passengers, and it is estimated that the time occupied by each journey will be half that of the larger horse-drawn vehicles. A three minutes' service is proposed each way, on the six routes, each of which is from a distant suburb to the heart of the city. It is also proposed to institute halfpenny fares for workmen in the small hours of the morning. With such a liberal programme the popularity of the motor-bus should be assured.

Names, not Numbers.

THE humblest little sea-craft is deemed worthy of a name, which is ornamental as well as useful. Our horses, dogs, cats, and all other pets are also given quaint or affectionate titles; why not motor-cars also? If any system of classification comes into force for motor-cars, the advisability of adopting names instead of numbers might be considered by the authorities. Whilst such a brand as "X 112" disfigures a car, it is not very distinctive as a means of quick identification, and yet is an eyesore to the owner. But he would be rather proud to see a sweet-sounding name gracing his car. A few enthusiasts have already adopted that custom, and there is no reason why it should not be general. A list of ships' names, or race-horses', would supply the necessary materials amply, and the custom of adding the native place, nautical fashion, might be followed. Thus, "Iris, London"; "Nancy, Edinburgh"; "Mercury, Liverpool," would look well in neat lettering on the back panel, and would give a sense of closer proprietorship to a vehicle than when it is a nameless one, known only by the title of its species.

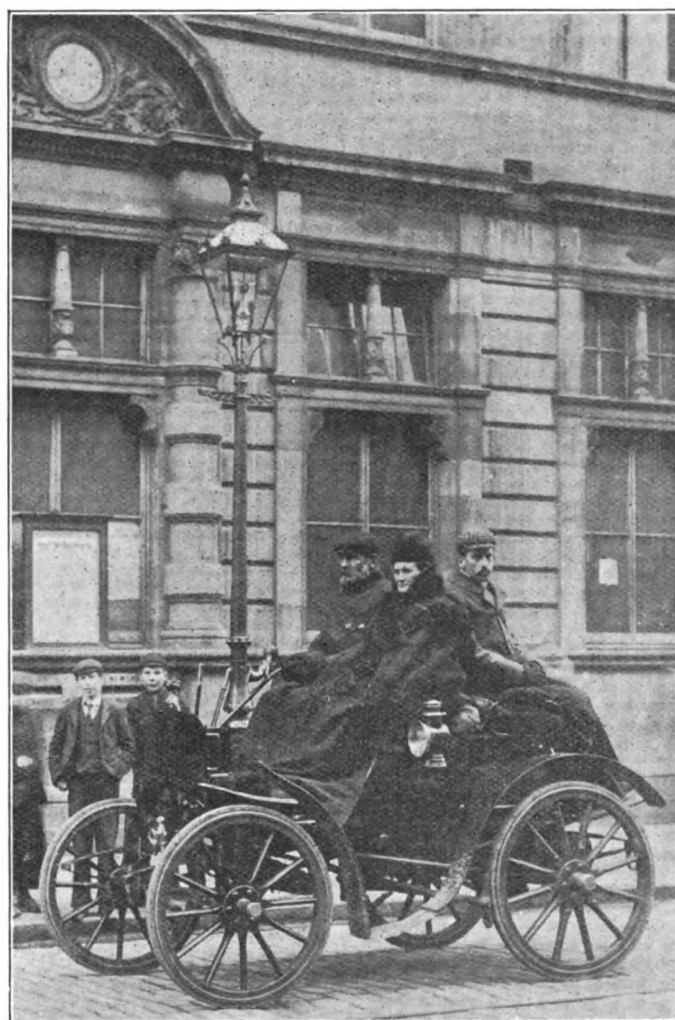
Ludicrous Law.

To an Irish County Council stands the credit of having brought into force one of the most absurd local laws ever set down. The enactment, which came into existence a month ago, is due to the genius of the County Council of King's County, and runs to this effect:—"Any cyclist or person driving a motor-car, on approaching a car, carriage, etc., drawn by a horse, mule, etc., which shows signs of restlessness, must, on being signalled to do so by the person in charge, dismount and must remain dismounted as long as may be deemed necessary." It may be difficult to guess how such a law came into force; but it is due to the amateur law makers following an old model drawn up years ago for the regulation of cycle traffic in the days when horses regarded bicycles with terror. The King's County solons added the words "driver of motor-car" after "cyclist," and thought they were thoroughly up to date. Now, the regulation as to cyclists dismounting, has been vetoed many years since in England and Scotland, as it was shown to be needless. At the time originally formulated, it may have served a useful purpose; but it is the height of stupidity to revive the rule now and make it applicable to motor-cars. Yet the law to that effect is now in force in King's County, and every motorist passing through it is liable to prosecution if he does not dismount at the behest of any apprehensive driver. It is evident that the law-makers hold the idea that extra control is obtained over a motor-car when the steersman dismounts! There will be extra amusement, too, for the lookers-on, in that the other passenger on the front seat has generally to be shed to enable the *chauffeur* to

comply with the law. The regulation is monstrous, ludicrous, and the Automobile Club of Ireland should at once see to the matter, as other County Councils may at any moment take it into their heads to pass similar laws.

The Dust Nuisance.

AT the last meeting of the Committee of the Automobile Club a report was submitted from Professor C. Vernon Boys, F.R.S., and Mr. Worby Beaumont, M.Inst.C.E., as to the devices submitted in competition for the prize of £100 offered by the Club for the best method of preventing dust raised by motor-cars causing annoyance to other users of the road. It was decided that, as the report was to the effect that none of the devices submitted were satisfactory, the period for the submission of devices for competition for the prize should be extended.



MR. W. CREBER ON HIS ALBION CAR AT PERTH POST OFFICE.

A Winter Run.

To settle a friendly wager, Mr. W. Creber undertook to drive two passengers to Perth and back on a twelve-miles-per-hour motor-car on a fixed date. Leaving Gorbals, Barrhead, at 5.30 a.m. on the 31st ult., the journey was made through Glasgow, Stirling, and Auchterarder. The roads in places were heavy from recent rains, and the fact that four different steam road-rollers, with their accompanying patches of new metal, were passed, will speak for itself. A cold east wind had to be faced during the whole of the outward journey, but with all, as the day advanced and the sun came through occasionally, the trip

became more enjoyable; and after a good run without stopping, except for policemen's signatures when leaving Glasgow, the party landed at Perth post office at 11.35, where the photograph under the clock, reproduced herewith, was taken. After lunch the journey home was resumed at 1 p.m., and with only one stop for petrol at Stirling, home was reached at 7.40, after a very enjoyable run of 134 miles. The car used was the Albion, which ran so successfully through the Glasgow Trials as A 6.

Second Thoughts are Best.

IN consequence of the announcement of nine motor cases at Guildford, several automobilists not directly concerned looked in last Saturday on the proceedings, but the nine were absent, and Hamlet was performed with the Prince of Denmark omitted. Inquiries as to the source of the false news, with which the reporters of the local papers were taken in, were unsuccessful, though rumour had it that the summonses were all in order for distribution, but a magistrate could not be got to sign them, some being for the heinous offence of walking ten yards from one's car and thus leaving it unattended. If this be true, it would appear that a dim idea of the technical meaning of the adjectives "frivolous" and "vexatious," as applied to legal proceedings, is beginning to reach the minds of the rural tribunes, which—is it too much to hope?—may in due course percolate to those of the inferior representatives of law and order.

Mending their Ways.

THE instructions of the Surrey County Council appear to be bearing fruit, at least in the Godalming district, as when about a mile from the latter town on Saturday, en route for Guildford, we noticed no less than three steam-rollers at work together within a space of two or three hundred yards, rapidly reducing about that length of fresh-laid stones to the smoothness of a track. Nor did the similarity end there, for that very bit of road had been previously carefully surveyed and measured by the police with a standard bit of string, and though there were no timekeepers on duty at the moment, they had only the previous day successfully recorded their prowess at the Godalming Borough Bench, at the expense of a well-known member of the A.C.G.B.I. It is evidently intended that no material obstacles shall lie in the way of well-attested records on this motodrome, though we are glad to see that the one referred to is to pass the scrutiny of a higher court.

A Glasgow Protest.

THE recommendations of the Automobile Club as to the awards in connection with the recent motor-car trials at Glasgow have not been received with unanimous favour, and the Hozier Engineering Company, Limited, has submitted a letter to the Council of the Glasgow Exhibition which will doubtless receive adequate attention. In this letter complaint is made of the exclusion of the climb of Whistlefield Hill from the official programme. It is pointed out that the Argyll voiturette built by the Hozier Company did not lose a single mark in the whole 535 miles and carried its full complement of four passengers over every hill on all the routes. In the Fintry hill-climbing test it received 110 marks and in the Gleneagles hill test it was credited with 152 marks. An average speed of 5.21 miles per hour was attained by the Argyll voiturette in ascending the Whistlefield Hill and that while carrying four passengers. The weight of the car is 10 cwt. and alongside these points in its favour are given some of the results obtained by other cars. Comparing these the Hozier Engineering Company feels some perplexity at the decisions arrived at and suggests that before the awards are made absolute the Council of the Exhibition should be furnished with further information so that it may have a complete return on which to base the awards.

Hampshire and Motor-Cars.

THE question of the regulation of the speed of motor-cars was considered by the Hampshire County Council on Monday. The Earl of Portsmouth remarked that the real way of putting a stop to reckless and unprincipled driving was to give magistrates power, where there was a previous conviction for such an offence, to impose on the driver a large fine or commit him to prison. Owners of motor-cars were rich people, and it was no penalty to them merely to inflict a fine of £10. Mr. Evelyn Ashley considered that no one should be allowed to take charge of a motor-car without a certificate of competency, and he did not think it right that the roads should become schools for persons to learn to drive and steer automobiles. The Council decided to support a proposal that motor-cars should carry an identifying number, but refused to adopt a motion in favour of granting certificates of competency. A proposition by the Earl of Portsmouth, that in cases where the driver of a motor-car had been three times convicted of furious driving, the magistrates should have power to impose a fine not exceeding £100 was defeated; but, on the motion of Mr. J. Gathorne Wood, a resolution was adopted to the effect that the present maximum penalty of £10 was not sufficient.

Hunting and Automobiles.

THE motor-car is likely to be much in evidence in the hunting field this year. Young though the season is, accounts of its appearance come from all quarters, particularly the Midlands. Of course, the automobile does not follow the hounds across country, but by sticking to the roads may enable its occupants to get a fairly good idea of what is going on. It is also a valuable auxiliary to the man in pink, inasmuch as it conveys him to the meet, where he finds a fresh horse awaiting him, and whisks him rapidly home again after the excitement of the run is over.

A MOTOR-LORRY is the latest innovation at Billingsgate Market. The Anglo-Tagus Company have decided in future to transport the oysters from their beds at Rainham, Kent, to the market by means of an automobile. The first lorry left Rainham at half-past ten on Thursday night last week, and reached Billingsgate Market at half-past five the next morning, with its freight of three tons of oysters.

MR. E. J. COLES, of Upper Holloway, is about to put a new petrol car on the market under the name "Belle." The vehicle will be built somewhat on the lines of the Benz gear-driven cars, but the engine—of 6 h.p.—will be located in the front of the frame, which will carry a *tonneau* body. In the run to Southsea to-day (Saturday) Mr. Coles will drive a novel form of locomobile steam car. The car is a standard one as regards under frame and mechanism, but the body, which has been designed by Mr. Coles, takes the form of a hansom cab.

IN their annual report to the shareholders, the directors of the new Centaur Cycle Company, Limited, Coventry, remark that, whatever may be the future of the motor-car trade, profits appear to be unattainable in its present stage of evolution, and the only asset makers have to place against large expenditure is the experience gained. In their experiments they have endeavoured to purchase experience as cheaply as possible, and the experimental expenditure has been provided for out of the profits of the cycle department.

AT the last meeting of the Standing Committee of the A.C.G.B.I., a letter was submitted from the secretary of the Sports Committee of the A.C.F. stating that all the clubs concerned, with the exception of the Belgian Club, were in favour of the rule limiting the weight of racing vehicles being applied to the race for the Gordon Bennett cup. The standing Committee recommended that if this club be the only one that is in favour of there being no limit in the weight of vehicles for the Gordon Bennett cup it should not oppose the introduction of the weight limit.

AUTOMOBILISM AND AEROMOBILISM.

THE somewhat sudden recognition of the importance of the problem of aerial navigation as one (to put it cautiously) within measurable distance of scientific, if not of economic solution, is a noticeable event at the present time, which the remarkable and well-deserved success of M. Santos-Dumont has done not a little to bring about. It is true that there have been recurrent waves of interest in the subject—if we include aerostation as its minor but less theoretical branch—ever since the inauguration of the latter 118 years ago; but they have broken to little or no practical end, and the societies that have been formed since Marey Monge advocated a European Aeronautical Society in 1847 have, with nothing but ballooning as a *raison d'être*, mostly died of inanition or survived in a semi-comatose state, while the advances that have been made are almost entirely due to a few able and—too often literally—self-sacrificing experimenters. There have been many obscurer workers, nevertheless, in whom the happy combination of zeal, means, and knowledge has been lacking, and perhaps in no other branch of human progress has so much valuable time and money been fruitlessly expended through ignorance of the work of previous investors in the same line.

Thus it is that a certain amount of distrust—almost of discredit—has attached to the ardent worker in this field, and his appearance as a would-be *confrère* of the automobilist almost, in the eyes of some, needs an apology, a view which Dumont's achievement, far as it seems to some of us from the real solution of the problem, has, as an apparent and tangible success, done much to dispel. But apart from this, the steps made in other directions towards the desired end are far greater than is generally believed. The valuable data collected by Lilienthal, and extended by Pilcher, both martyrs to the cause; the records of Maxim, Langley, Chanute, and Herring, and especially the latter's contributions to the chief remaining problem of the aeroplane, namely, the difficulty of balance against the irregularities of the wind, show a better case for the "heavy" air-ship than outsiders generally realise. Both sections are aware of their debt to automobilism in the matter of evolving light and manageable sources of power, and only request tolerance and encouragement until they shall have more fully justified their claim to be enrolled under its banner; an end which will need all the assistance that a combined body of enthusiasts can offer. Much can doubtless still be done by experiments with models; but from the nature of the case these are less instructive and reliable than in most matters of mechanical construction, and costly and elaborate experiments will be necessary on a large scale, the encouragement of which, together with the circulation of knowledge and the exchange of views on the subject, should be the primary object of an Aero Club. In the meantime, ballooning *per se* is an inexpensive and healthy pastime, so long as its votaries are not led to neglect the principal object of their organisation, to hasten the evolution of the "airy navies" of the twentieth century, and to ensure that a fair proportion of them at least shall be the outcome of British enterprise. R.W.B.

At the Law Courts, on Wednesday, an order for the compulsory winding up of the Autocar Supplies, Limited, was made on the petition of Mr. G. W. Gorden Tamplin.

MR. G. H. WARNE, of Warne's Hotel, Worthing, has invited the members of the Automobile Club to luncheon on Sunday next, the 17th inst., to inspect his hotel and new motor garage.

THE three days' "At Home" held by the Locomobile Company of America at their new depot at South Kensington, last week, resulted in a great success, close on 400 people visiting the same. The company had the showrooms for the three days specially decorated with flowers and plants, and had a part of them converted into a miniature drawing-room, tea and coffee being handed around by the lady typists. Among the number of well-known people who called were the Baron and Baroness Campbell, and Miss Barber, daughter of Mr. A. Lorenzo Barber, the president of the company.

CORRESPONDENCE.

MOTOR-BICYCLES FOR 1902.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—As many cyclists will be thinking of being "pushed by a pint of paraffin" next season, it may be of benefit to some if I give my experience as a bicycle motorist during the present year, and may be a guide to the uninitiated respecting the kind of machine to be sought after without having to pay for one's own inexperience, or for the experiments of the manufacturer. Anyone who has tasted the delights and recognised the feasibility and possibilities of the motor-bicycle will have little difficulty in acquiescing in my opinion, that this machine will soon be more popular than the more expensive and luxurious motor-car.

Now for my experience. I have travelled nearly 1,000 miles on a Bayliss, Thomas and Company's "Excelsior"; have also tried the "Singer," the "Werner," and the "Kitto." The engine of the first-named (reputed as $1\frac{1}{2}$ h.p.) is altogether inadequate for English hills. I found my machine unable to climb gradients of 1 in 25 without pedalling assistance; and also an acclivity of 1 in 12 (unless a very short steep one which might be rushed by impetus) without having to dismount altogether. The "Singer" is much better in this respect, and the "Werner" and "Kitto" are far superior hill climbers. My chief objection to the "Singer" I tried was its liability to side-slip. The "Werner," though effective, is a noisy machine; besides which, owing to the close proximity of the engine to an unnecessarily wide and also unadjustable handle-bar, considerable vibration is communicated to the hands and arms. The "Kitto" also errs somewhat in this matter of vibration, but has a lively little engine of good hill-climbing ability. I lay great stress on the importance of hill-climbing power, for a motor-bicycle enables its possessor to travel so far afield that one is bound to soon encounter all kinds of country and hills. The "Kitto" and the "Singer" are the most silent of the machines I have mentioned, which is a very vital matter to both rider and driver in the present unsatisfactory state of equine education. Regarding speed, I have attained on the "Excelsior" speeds of twenty-four and twenty-six miles per hour on a good level road. The engine (Minerva) I found soon got "tired"—any motorist familiar with air-cooled motors will know what I mean—in fact, I have known a certain gradient which the machine would climb when cool, which it could not climb when the engine became hot, except with pedalling assistance. There is, however, one good feature about this machine, and that is that the bottom bracket position of the engine gives great immunity from side-slip and freedom from vibration.

The foregoing practicable observations have naturally given rise to certain points which I commend to the notice of every cyclist who may be contemplating becoming a motorist. I have embodied them in a description of what my experience would define as an ideal (and I am sure not impracticable) machine; at any rate, it is that machine which most nearly approaches it that I shall order for next season:—

Horse-power.—Eschew the so-called $1\frac{1}{2}$ h.p. machines, the net horse-power of which often does not equal even 1. Insist on having $1\frac{1}{2}$ "net," "actual," or "brake" h.p. If 2 b.h.p., all the better. To be doubly sure upon this all-important point, ask the maker whether he will guarantee that the machine will carry a twelve stone individual up a gradient of 1 in 12 or 1 in 15 without assistance, and, with pedalling, a gradient of 1 in 8. If you have to dismount for 1 in 7 you need not grumble. Manufacturers do not begrudge these guarantees with motor-cars. A low-power engine has no reserve to cope with the following likely contingencies: Natural decline in efficiency through heating, especially in warm weather, the ideal time for motor-ing, hill-climbing, indifferent petrol, weak ignition, and extra luggage weight.

Ignition.—To avoid the inconvenience of recharging accumulator have the Simms-Bosch magneto ignition; or a combination of dynamo and accumulator, such as the Avery dynamo,

constantly feeding a small accumulator, by being operated by small friction wheel off the back rim.

Trembler.—See that trembler and contact screw are durable. I found that the Minerva required renewing at the end of nearly every hundred miles at a cost of about 4s.

Petrol Tank.—Capacity to travel at least 120 miles without refilling.

Carburettor.—Spray or pulverising type.

Transmission.—Chain drive; but if belt, then the twisted hide pattern with well-cut transversely corrugated motor pulley to prevent slipping.

Gear.—Eighty or ninety, to avoid being "winded" by the necessarily rapid pedalling when assisting, as speed must always be brisk to maintain engine power.

Frame.—Reinforced "flexible" or other strong spring frame.

Brakes.—Two Bowden brakes.

Tires.—2½ "Clinchers," which are splendid non-slipppers.

Exhaust.—To have a silencer nearly silent.

Levers.—"Sparkling Advance" and "Quantity" levers to be operated from handle-bar.

General.—In addition there should be automatic lubrication, two speeds, with free engine (otherwise exhaust-lift) outlet cocks (not nuts) for old petrol and for refuse lubricant.—Yours truly,
PETRO.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I can fully endorse all that Mr. Fawcett states regarding desirable improvements in motor-bicycles generally, but in the Werner particularly. This type of machine is found to possess ample power, in fact at times too much power to be able to get a low speed for town riding. With everything in the best order, I should say it is the fastest machine on the market; but, alas! I should also say the worst finished in detail. Before I could get anything like good results I had practically to overhaul every part of mine. A few of the worst features were: First, the motor pulley not in line with driving wheel, causing much trouble with the V belt, necessitating the fitting of a new motor pulley; second, sparking gear badly fitted and coming loose, owing to bad threads on the screws and nuts, etc.; third, exhaust box worthless as a silencer, the noise when running at fair speed being distressing; fourth, accumulator sent out with the plates imperfectly "formed"—mine took fifteen repeated charges and discharges to get into anything like proper order. The capacity, as stated by the makers ("Dinen," Paris) is 20 ampère-hours, tests with accurate instruments proved it to be only twelve. I seriously doubt whether this would mean 500 miles running, let alone 1,500. The brake is most defective, and I had to fix a spring to help it to release from the drum, as it nearly caused a serious accident through jamming. A reliable belt-fastener is also much needed, also better work in the carburettor—mine leaked at the top. These details being improved, the Werner would, in my opinion, become very popular.—Yours truly,

ELECTRICAL ENGINEER.

BROKEN CONES.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Can any of your readers throw light on following? I ride a 2½ h.p. water-cooled De Dion tricycle. Nearly every two weeks I break a cone, it is always the same one, that is, the outer bearing on the right hand driving shaft next to wheel. The collar is torn off and the balls have grooved the shaft. It has been replaced about six times. What is the cause?—Yours truly,
PUZZLED.

THE NOMENCLATURE QUESTION.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I cannot agree with your correspondent, Mr. Sennett, that "Motor-Running Store" would be an ideal English substitute for the French word *garage*. Everyone seems bent on

having an English equivalent, however, so I would suggest that it would be preferable to have a simple and not a compound word. In this light the suggestion is most obvious. We have "cooper-age," "anchor-age," "vicar-age," etc., therefore why not "motor-age"?—Yours faithfully,
H. S. HALFORD.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—"Garage" is awful. We have "coach-house," "gig-house"—why not "car-house" or "motor-house"? Again, we have "cart-lodge"—why not "motor-lodge" or "car-lodge"? Any simpleton would know what these words mean.—Yours truly,
ANTI-FOREIGN.

POPULAR-PRICED CARS WANTED.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—The opinions expressed by Mr. Cecil Jackson's letter in your last issue will be readily endorsed by a great many readers of your interesting journal. We have constantly before us your tabulated statement of prosecutions for furious driving. A steady twelve miles per hour run should be quite sufficient speed for all ordinary purposes, which is far beyond what we get from our hay-motors. This would make us law-abiding users and baffle the man in blue if drawn into the vortex of the law courts.

The popular light car for two persons, to be generally serviceable and lasting (although light), in my opinion, cannot be produced at so low a price as £75; but certainly such may be constructed with a motor, say, of 3½ or 4 h.p. and geared to 4, 8, and 12 miles per hour, with light combination wood and iron wheels and solid tires (if not too rigid for light cars), and supplied at or below £100, subject to a fair cash discount. If a car of this description was brought into the market and fairly advertised, that your readers might know where obtainable, there certainly would be a plethora of orders received. At present none of the manufacturers advertise such cars at popular prices.—Yours faithfully,
GEORGE S. BRIDGMAN.

THE Clipper Pneumatic Tire Company, Limited, write:—"We have read Mr. Phillips' letter published in your issue of November 9th. As to the letter which Mr. Phillips states he addressed to this company, and the memorandum stated to have been made upon it by someone in our employ, we can only say that we have no trace whatever of any communication of the kind, nor can any of the officials of the company recollect anything of the circumstances alleged by Mr. Phillips. However, accepting Mr. Phillips' statements as correct, what do they amount to? That he asked for immediate delivery of certain tires, and that he was informed that the tires in question were not in stock, but were expected the following week. Could anything be more reasonable than such a reply? Surely if Mr. Phillips was as anxious as he professes to be not to infringe the patentees' rights, he would have taken the common-sense precaution of ordering his licensed tires at the same time as he ordered his car, instead of waiting until his car was finished, and then purchasing infringing tires, because forsooth he was unable to purchase a pair of tires across the counter."

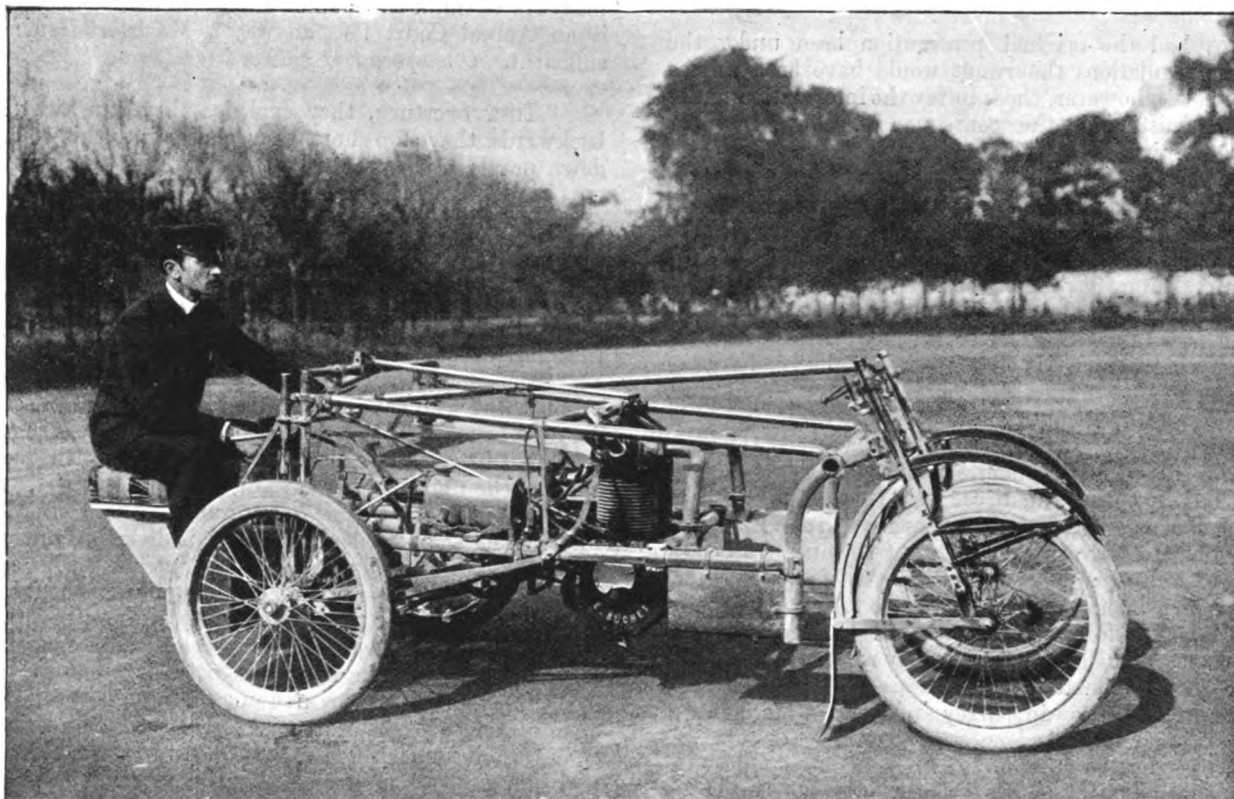
[We cannot insert any more letters on this subject.—ED. *Motor-Car Journal*.]

THE Eastbourne Town Council at a recent meeting adopted a resolution "that the Committee take into consideration the advisability of obtaining powers for electric trams or motor omnibuses."

AN annual challenge cup for motor-cars propelled by alcohol is announced from France. M. Pierre d'Arenberg, an enthusiastic advocate of alcohol as a motive power, has endowed the cup, which will probably be run for simultaneously with the Paris-Bordeaux race.

THE Scarborough syndicate, recently formed for providing a service of motor-cars at Scarborough, has now had the first of the cars on the streets for a month, and pronounces the result of its working to be quite satisfactory. Two more cars are expected in the course of a week or two, when some of the most distant suburbs will be regularly connected with the town.

The Truffault Racing Car.



(La Locomotion.

FLOTSAM AND JETSAM. BY "FLANEUR."



A MACHINE—we use the term advisedly—which attracted considerable attention at the recent race meetings at Deauville and Ostend was that designed and driven by M. Truffault, and of which we are able to give a very clear illustration herewith. At the first glance the machine appears exceedingly complicated, but after inspection is found to be very simple. The frame, which is of strong tubular construction, measures 6ft. by 3ft. The rear wheels are 4½ ft. apart and are fitted as on a car, while the front ones are carried between spring forks of the cycle type, 2½ ft. apart. The driver's seat is located right at the rear, projecting behind the frame. The motor—a two cylinder 12 h.p. Buchet, is supported on the frame exactly midway between the front and rear road wheels; it transmits its power by a single belt to a pulley on the rear axle. Although only one mechanical speed is available, it is claimed that by the variable electrical ignition and a jockey pulley acting on the belt any speed from ten to 100 kilometres per hour can be attained. At the Deauville race meeting in September last M. Truffault came out first in his class, covering the mile in 1 min. 28 2-5 sec.

THE executive of the Rhenish Automobile Club decided at a recent meeting to abandon races, the last having resulted in financial loss. In future it is proposed to apply the resources of the Club to acquiring motor-cars for the use of members who do not possess cars of their own. The first vehicle which the Club proposes to purchase is a large one, seated for twelve passengers.

THE Northern Motor Company, acting in conjunction with Messrs. John Hutton, Sons, and Co., of Dublin, have just established themselves in new premises in Montgomery Street, Belfast, for the sale of motor-cars. The Northern Motor Company inform us that they are willing to lend a motor-car to any owner of horses in their district for the purpose of enabling the animals to become accustomed to automobiles.

THE way of transgressors is hard, but the way of motorists is harder. Ere long they will have lost all confidence in the administration of justice. From unpaid magistrates it is, of course, useless to expect much; the fact is regrettable, but is none the less devoid of ambiguity, the experiences of the last few years having left no possible room for doubt. Where the High Court is concerned, however, the time for callous indifference has not yet arrived, but it is certainly coming, despite the traditional respect which the average Englishman entertains for the statute law. To be asked to regard as "luminous" the judgment in the Mayhew appeal case is too much for even the long-suffering automobilist; his lexicon suggests a word that is in every sense more apposite, and that is "puerile." Any lingering doubt that may remain is as to whether it is not an insult to the schoolboy to rate his intelligence so low.

A PLAINER issue never came before a court. The judges were simply asked to state whether fast driving was *per se* to the "common danger"; that is to say, assuming the absence of all animate obstructions, is high speed of itself a menace to the public safety? The case was destitute entirely of collateral issues. There was no necessity for the sifting of evidence as to whether any "passengers" were on the road or not; it was admitted that no one was even in sight with the exception of the policeman, and it was not attempted to prove that he in his own person represented the menaced community. As Mr. Mayhew, moreover, was summoned and convicted under the "common danger" clause, there was no chance of dragging in the other three under which he might have been arraigned.

An automobilist is subject to four regulations affecting speed. He may not drive "at any speed greater than is reasonable and proper, having regard to the traffic on the highway." He may not drive "so as to endanger the life and limb of any person." He may not drive "to the common danger of passengers"; and lastly, of course, he may not drive "at a greater speed than twelve miles an hour."

OBVIOUSLY, had the original prosecution been under the fourth of these regulations the result would have been unmistakable. The police, however, chose to lay the information under the third, and must abide the consequences. Now, in what manner did the distinguished judges approach the question to be decided, and in what way did they display that subtlety of analysis, that masterly penetration that one regards as the essential characteristics of the judicial mind? The plain man would scarcely have failed so pitifully. They simply burked the issue, and did the very thing that the layman might be expected to do, but which we specially employ our judges not to do, and that is not to run off at a tangent. The Lord Chief Justice combated the contention that a man driving on a straight road free of passengers was not driving to the common danger by asking, "Suppose there was a passenger round the corner who would be inconvenienced by a motor coming at this pace?" To the plain man, less overburdened with ponderosity of intellect, it is obvious that once round the corner the driver would be amenable to the common danger clause if there were passengers round the said corner, but not before. Every driver of a fast car must of necessity slow up before the corner is neared, and even if this were not essential to his own safety, and left merely to his own consideration and good feeling for others, he cannot be accused of the offence until he has actually committed it by rounding the corner at full speed. Lord Alverstone's hypothesis would suggest that, if there were a lights by-law in Surrey and none in Middlesex, a driver approaching the boundary on the Middlesex side was *ipso facto* an offender, because he *might* be about to cross over without stopping to light his lamps. This is precisely the type of reasoning that policemen and the average unpaid magistrate habitually display; from the judges of the Court of Appeal we look for higher logic.

MR. JUSTICE DARLING's scintillating wisdom is, of course, a matter of universal knowledge. Experience so profound as his and judgment so mature, so sobered by years of experience on the Bench, would lead us to expect nothing in the way of ill-considered comment. Did he disappoint us? "Supposing," he said, "that there were two or a dozen passengers, and it was found that what was done endangered only one, would you say that that was not an offence, because it was not a common danger?" There is only one possible answer which the plain man can make in the wholesome simplicity of his sanity. If language has any meaning at all, the word "common" implies plurality, and if only one person were endangered the danger could not be common. Judges may affect to think differently, but the English language will retain its significance none the less, however much it may be judicially burlesqued. Nor can the plain man see what bearing this ridiculous hypothesis had upon the issue when no evidence whatever was given as to "two or a dozen passengers," the policeman being the only person on the road.

As for the ultimate decision, voiced by the Lord Chief Justice, it can only be described as one of the most extraordinary deliverances that ever dumbfounded the lay mind. "A consideration of the rule under discussion," he said, "showed, at any rate, that the justices, upon evidence before them of a high rate of speed, might say that such a high rate of speed was to the common danger of passengers, though no particular passenger was shown to have run out of the way or to have fled for his life, or to have taken steps to avoid being run down. Therefore, even on uncorroborated evidence, it was open to the justices to say in this case

that the driving was to the common danger." The magistrate can do no wrong; that is the sum and substance of this judgment. The validity of evidence is of no account. A policeman may bring a man into court and charge him with intent to murder because he carried a sharp knife. The magistrates may say that the possession of such a weapon implies a desire to kill. Proof is superfluous of any killing or murderous desire alone; the magistrates think the man is guilty, and that is enough. What is an Appeal Court for, anyway? Magisterial surmise is all-sufficient. *O tempora! O judices!*

"THEY overturn, they explode, they run away, they run backwards, they stop short, they charge into things, they knock down people, and apparently quite of their own innate wickedness, and quite regardless of the most strenuous effort on the part of their drivers to control their erratic movements." This terrible indictment of automobile vehicles appears in an article by Miss Clifford in a sixpenny magazine published by the Datchelor School at Brixton. The medium is scarcely influential or authoritative, but the matter is perhaps the most unconsciously amusing that has ever been written about motor-cars. It is probably expressive, moreover, in concrete form, of what a good many people think who have no practical knowledge of the subject, but may have seen an odd car or two of an old type struggling up a steep hill in the first speed, or doing that which does more to alienate the uninitiated than anything else, namely, standing in the street with the engine left running. Miss Clifford's capacity for drawing the long bow, however, is diverting in the extreme. She describes the advent of an automobilist who called on a brother *chauffeur* residing two doors away from the fair maligner. The first car "snorted for some minutes" every time it was driven home, but the visitor's was of a different kidney. It arrived at three o'clock, and its occupants entered the house. Then the owner and the man on whom he had called came out again to try to stop the snorting. "They got on the car, and in the car, and under the car, first both together, and then one in and one under, and *vice versa*; the snorting increased rather than abated." Various other evolutions are described by this veracious chronicler, who solemnly avers that the car snorted for over four hours, and "all the time two able-bodied men were straining every nerve to stop the annoyance."

It is useless to inform the lady concerned that the engine could have been stopped in a second, and that the men were probably endeavouring to locate some trouble while keeping the motor at work. But her charitable attempt to find "one good point" in the motor-car is the most amusing item of her paper:—"It keeps its owner out of mischief when he is not riding it." This forcibly reminds one of the schoolboy's essay on pins. "Pins," he wrote, "have saved thousands of lives." He was pressed for an explanation, and thereupon added, "by people not swallowing them." The summing up of our vitriolic critic, however, would gladden the heart of a parish councillor of the Arbuthnot type. "I consider them nuisances," she loftily observes, "and would propose:—(1). All motor-cars to be heavily taxed, and the revenue so derived to be devoted to giving pleasure to non-drivers. (2). No motor having an objectionable smell to be allowed anywhere on any pretext. (3). Any motor-car driver driving over anyone to be executed immediately. (4). Any motor-car frightening anyone—not absolutely in the last stage of nerves—to be heavily fined or imprisoned." Now we know what to expect. But Miss Clifford really ought to have explained how she would fine or imprison a car!

THE Commercial Attaché at H. M. Embassy at Berlin reports that the motor-car industry is undoubtedly making much progress in Germany, and improvements are continually being made, not only in style and general appearance, but also in thoroughness of manufacture. There is an increasing demand for such conveyances all over the country, especially for delivery vans in large towns.

A WINTER RUN IN 1900.

(Concluded from page 645.)

WE reached Aix (en Provence) going strong and in the best of spirits. A fine town, the modern part well laid out and well lighted, we thought, as we passed along the main street between the trees and under the electric lamps which are hung above its centre line. But our hopes of enjoying a drive in the moonlight were dashed before we arrived at the end of it. It was the old trouble. We searched for the cause of leakage, and finding a good sized hole, determined to retrace our steps and make an early start again in the morning. The faulty tubes were to be patched before turning in, so as to give ample time for the solution to dry. The procedure of the previous night was repeated with the waiter, and had a similar excellent result. We were all at the door, muffled and goggled, before it struck six. At first, however, it seemed as if our exertions were to be thrown away. Ill-fortune dogged us. We were down on the rim before the sun had fairly risen. In the circumstances my readers will understand that it was not easy to be philosophical. After a delay of twenty minutes, perhaps, we ran on a few miles, and then it happened again. This time we thought that we were really done for. All the tubes brought from Clermont were burst, and we had nothing left but those that were mended, and these in our previous trial had not stood up for more than a dozen kilometres. We had a second additional consignment at Nice station, but we scarcely dared to hope that our stock would carry us on so far. It looked as if the trip was to end in failure just as we were entering upon the last and most beautiful stage of it. It proved to be a case of luck changing at its very worst moment. The tube we put in now endured the rest of the journey, though it kept us a little anxious and compelled us to go slowly over bumpy bits. For the most part the surface was well-nigh perfect, but here and there we came suddenly upon stretches full of hollows two or three inches deep all across the road, looking as if the upper layer had been neatly sliced off. The crust of the earth, as one can see in exposed sides of broken hills frequently, is formed of very shallow strata of brittle material, and this material seems to be employed for the road mending. This sort of thing is very hard upon pneumatics when bearing the weight of three persons, and luggage probably weighing not far short of another.

We pushed on through Brignolles and Draguignan to Fréjus, where we took our noontide meal and had some conversation with a French automobilist upon the subject I have just mentioned. We knew the amphitheatre well, so went on at once to tackle the long ascent over the Esterelles Mountains. It is a steady rise of some six miles, and at the bends the gradient is frequently sharp; yet we took the entire incline from bottom to top at an average speed of twelve miles, timing ourselves by the kilometre stones with a chronograph. It was as good an instance as one could have of the gain in a day's run from really sufficient power. Following our usual practice, we took the other side cautiously. One or two of the corners where accidents have occurred through reckless or incapable driving are pointed out; indeed, my friend had himself been witness of one case in which a *chauffeur*, not allowing enough for the slip of his wheels in getting round at high speed, had let his car, a brand new one, shoot over the edge and smash itself to atoms in the valley below. Mercifully everyone jumped clear, and their excitement, he said, as they danced about and gesticulated, was extremely funny. Cannes was remarkably empty, and we heard the same story at all the ordinary resorts of our countrymen. Soon after leaving the last of the straggling villas there was a straight of perhaps a couple of miles, where the railway line keeps close company with the road, and there happened to be a train coming along in our direction. It caught us up, and we went for all we were worth, and, running beside it, gained considerably before we had to slacken for a cart blocking the way. The trains along the coast are not excep-

tionally good, but, such as it was, we certainly beat this one, as it steamed freely between stations, and the engineer gave us a friendly wave of the hand. Nice was decorated with Venetian masts and flags for the impending automobile carnival, but here again the usual signs of the British occupation were not evident. As we were going gently along the Promenade des Anglais I was amused to see my friend, in saluting the driver of a coach whom he knew, take off his mask, and this, he afterwards explained, was because the gentleman in question had told him that his horses had no stupid prejudices against motor-cars, but could not be induced to pass quietly a face in goggles. Our lame tire had been behaving so admirably that we did not lose any time in going to the station for the reinforcements awaiting our need. The Corniche was less dusty than I have generally seen it, and the lovely gardens of Monte Carlo were even fresher than usual; the feature everywhere was the mimosa in the first glow of its golden glory. We chanced to get a glimpse of two big German Daimlers. Monsters they looked, and the former, which we saw in motion, left an imposing idea of what it might do. It was but little further to Mentone, and we pulled up at the Cap Martin in time for a good tub before tea was brought in. We had had a perfect day, and had come a couple of hundred miles over what we both agreed must be the most magnificent road for scenery and surface anywhere to be found. The day before we had covered a similar distance—over 400 miles in two days; and I do not see why we should not have maintained that average from the first and arrived in three days, instead of four and a half, if we had not had more than the average delays on account of tires.

ARUNDELL WHATTON.

THE Locomobile Company of America have made a donation of ten guineas to the funds of the Motor Union.

THE Salon de l'Automobile organised by the A.C.F. will open its doors to the public on December 10th at 1.30, when M. Millerand, the Minister of Commerce and Industry of the French Republic, will preside at the inauguration.

STATE SENATOR COCKS has told the farmers of Long Island that he would throw a board studded with nails before any motorist whom he saw riding rapidly. Long Island is supposed to be a civilised State, and Mr. Cocks is a State Senator.

THE transportation of a huge statue of Vercingetorix, by Bartholdi, from the sculptor's studio in Paris, to Clermont Ferrand, a distance of 400 kilometres, has been much discussed. Both railway and boat offered many inconveniences, but the difficulty has been solved by the construction of a special steam-motor by Messrs. De Dion-Bouton. It is expected that the journey will occupy four or five days.

THE magnificent old Corniche road from Nice to the convent of Laghet, passing by La Turbie, is to be served by a system of electric motor-cars taking the necessary current from overhead wires. One feature of the system is the ease with which the motor-cars will make way or pass round any carriage they encounter, the connecting wire being sufficiently long to allow of such deviations.

THE Pawtucket Steamboat Company, of Pawtucket, R.I., U.S.A., have introduced an attachment for steam carriages that prevents the fire from blowing out or burning back, and does away with the smoke pipe. It is claimed that by the use of the device no amount of wind will affect the fire. It keeps a current of air flowing up through the burner, keeps it from warping, and increases the draught and steaming capacity.

THE four Locomobile steam-cars which are being sent out to the Malay States to the order of Mr. Zacharias all had to be refitted with the Clarkson burner and other improvements. As the temperature in the shade in that district in which they will run frequently reaches 90 or 100 degrees a petrol-fired car could not be used, it was only by the application of the Clarkson paraffin burner that the use of these cars was possible for carrying the mails in this part of the world.

CONTINENTAL NOTES.

BY "AUTOMAN."

VISITORS to the Paris Automobile Exhibition will be able to see Santos-Dumont's navigable balloon No. 6, the Committee having prevailed upon him not to take it away from Paris until late in December. M. Santos-Dumont hesitated somewhat before consenting, but it was represented to him that he owed to the Parisian public, who have so enthusiastically taken his part in the various troubles he has gone through, an opportunity of seeing the famous air-ship which successfully sailed round the Eiffel Tower and won the £4,000 prize. This decided him, and certainly the most interesting exhibit will be this balloon, which will be suspended from the roof of the Grand Palais.

TALKING of the troubles of poor Santos-Dumont they seem to have continued to the end, and even when he went to the Aero Club to receive the well earned Deutsch cheque the Committee of the Club tried to saddle him with the expenses of a lawsuit which is being brought against the Club for the nuisance and damage caused by the residue from the manufacture of the hydrogen which filled the famous balloon. In the meantime, the energetic young Brazilian is to be at work on his No. 7, which is to make its *debut* at Monaco, where the Prince has placed at the disposition of M. Santos-Dumont a piece of land on the seashore. The Prince also intends to build a balloon shed and a hydrogen manufactory at his own expense, and so place all the facilities possible at the disposition of the young aeronaut. No. 7 is to be a much larger airship, with two motors of 45 h.p. each, and a propeller at each end of the keel. The balloon, which will still be of the familiar shape, will cube 832 metres, and be 44 metres long by 6 metres in diameter. It is to be ready early next February, so that those who winter on the Riviera will have an additional attraction in following the fortunes and adventures of No. 7, which it is estimated will be able to travel at a rate of forty miles an hour, and will also be able to take passengers on board.

THE experiences of M. Santos-Dumont have created quite a movement in the direction of aeronautics, and there is to be another big money prize offered for competition. This time M. R. Lebaudy, who is a wealthy sugar refiner, has come forward with a prize of £1,000, and M. Henri Deutsch has offered a similar sum. The Aero Club, on the other hand, are proposing an air-ship race from Paris to Meulon and back.

A NEW candidate for aeronautical honours has turned up, and, strange to say, he too is a Brazilian, M. Augusto Severo by name. His air-ship is said to have already been tried successfully in the harbour of Rio-de-Janeiro. It cubes 2,000 metres, is thirty metres in length, can take several passengers, and beat up against a strong wind—so it is said. M. Severo has fixed his headquarters at Vaugirard, and expects before the end of the month to sail over Paris, and show off the capabilities of his invention, which differs somewhat from that of his fellow-countryman.

I MUST not finish with aeronautics without mentioning to the readers of the *Journal* the first annual exhibition of "Gravity Flying Machines," organised by the *Auto-Velo*, under the patronage of the Aero Club, and which took place on Wednesday and Thursday last week at the Velodrome of the Parc des Princes, near Paris. There were some twenty entries, about which I hope to be able to give some further details next week.

TO-MORROW (Sunday), from 12 till 4, the hill-climbing competition on the Côte de Gaillon will take place. There are 73 entries. The record is held up to now by Béconnais, who did

the kilomètre of nine per cent. gradient in 58½ seconds. This year the record will probably be lowered by several competitors. Every kind of motor vehicle is represented, from a bicycle up to the 50 h.p. Napier.

THE *Auto-Velo* is organising a tourist motor caravan to leave Paris and travel to Nice at the time of the Nice races. It is proposed that it shall be organised on similar lines to the tourist section of the Paris-Berlin race, that is to say, with two classes, one controlled and the other not controlled.

HERE AND THERE.

THE Duke of Manchester has just purchased a 12 h.p. Darracq car from the British Automobile Commercial Syndicate.

WE understand that the Anglo-American Oil Company, Limited, have reduced the wholesale price of Pratt's motor-spirit in London 3d. per gallon.

A NEW small motor, with accessories suitable for motor-bicycles, has just been put on the market by the Empire Autocar Supply Company, of Marylebone Road, London, W.

MR. H. M. FLETCHER, a member of the A.C.G.B.I., warns motorists against using the road between Woking and Chertsey. Mr. Fletcher says about a mile and a half of this road has been thickly covered with loose, sharp, flinty gravel, and that no steam roller has been used.

THE Wolseley Tool and Motor-car Company inform us that they recently received, within fourteen days, orders for no less than thirty-seven cars of 5.10 and 20 h.p. Amongst others who placed their orders during that period were Lord Willoughby de Eresby, Colonel the Hon. C. Bingham, Major Cotes, Colonel Isherwood, Sir Hickman Bacon, Bart., and Mr. E. Gray.

ON Saturday last a somewhat serious accident befel Mr. T. J. Stevens, of Coventry, whilst riding a motor-bicycle on the Coventry road. Some passers-by discovered him in an unconscious state near his machine, which was uninjured, and took him into Kenilworth. Subsequently Mr. Stevens was taken home in a carriage suffering from severe wounds about the head.

THE second general annual meeting of the Aberdare Valley Motor Company, Ltd., was held on Friday last week, when again a satisfactory balance-sheet was presented. The company is one of the oldest public service concerns still at work in the country, having commenced operations in October, 1899. The manager and engineer of the company is Mr. W. Parker-Thomas, and it speaks much for his management that the company should have done so well.

A new design of body for motor-cars has been registered by S. J. Lilley, carriage builder, Welford Place, Leicester. It is an elegant design of motor-gig, and is convertible to a *tonneau* to carry either two or four passengers. There is ample room in the carriage, and each passenger can secure a very comfortable position, and perfect freedom from cramping of legs. Mr. Lilley has had considerable experience in body making for the motor trade, and is agent for the county of Leicester for the Motor Manufacturing Company, Ltd.

IN the latest type of motor-coat designed by Mr. T. H. Holding, of Maddox Street, W., he has embodied points of such great advantage that we cannot help calling attention to them. Think of a coat that shall sit well and a man may walk about in, or wear as an ordinary coat off the "box" and yet has the following advantages when he sits down:—No strain on the lap, freedom for the knees, and yet costing but a trifling more than an ordinary over-garment, and having nothing to render it unsightly as an ordinary coat. The coat is made of splendid material, and so scientifically constructed as to render it absolutely impervious to wind and cold air, and yet is so comparatively light that a man may walk in it. Another remarkable novelty is Mr. Holding's motor-vest, which is practically a suit of clothes in a vest. It is made of leather, soft and delicate to the touch.

ON Wednesday next, the 20th inst., a meeting of manufacturers and sellers of electric motor-cars will be held at the Automobile Club to consider the question of trials.

THE Automobile Club is offering a prize of £5 for the best design for the Club plaque, to be attached to hotels and to the establishments of repairers appointed by the Club.

THE second annual dinner of the Yorkshire Automobile Club will be held at the Great Northern Hotel, Leeds, on Friday, December 6th.

IN addition to motor-bicycles, the Quadrant Cycle Company, of Birmingham, are, we hear, about to bring out a new motor-tricycle, constructed on novel lines.

THE British Automobile Commercial Syndicate have received the first of the new type of De Dion-Bouton voiturette, and it is now to be seen at 97 and 98, Long Acre. We understand that this firm have ordered 200 of these cars.

THE four Daimler public service cars and the 6 h.p. Cannstatt Daimler 'bus of the Aberdeen District Motor Service Company,

THE Austrian War Minister contemplates bringing a Bill before Parliament which will render every motor-car liable for service in case of war. All vehicles will have to be registered for this purpose, and once a year brought before a military commission to decide if the car is to be retained on the service roll, or if it is useless for military purposes. The owners of the cars will receive compensation in case their vehicles should be commandeered.

THE New Grappler Pneumatic Tyre Company intimate some important changes in the process of manufacture and in goods marketed since the issue of their last catalogue a year ago. Perfect immunity from tire troubles is claimed under the new process, though attention is called to the fact that users frequently fail to obtain this owing to their fixing tires to cars which are much heavier than the tires were designed to carry. Grappler motor tires range from Class A, capable of carrying 120 lbs. per wheel when loaded, to Class E, which will carry 500 lbs. per wheel under similar conditions. Each class is made in a large variety of sizes. Motor-bicycle tires up to 28 in. diameter are also made under the same process.



LAYING OUT THE FOUNDATIONS FOR THE LOCOMOBILE CO. OF AMERICA'S NEW WAREHOUSE AT SOUTH KENSINGTON.

Limited (in liquidation), are to be put up for sale by auction to-day (Saturday).

THE Southfields Laundry, Southfields, S.W., is about to put in service a 7 h.p. Daimler motor-van. The car was brought up from Coventry by road, and is now being fitted to a van body specially constructed by Mr. S. Tilley, coach builder, Merton Road, Wandsworth.

WE learn that the recently-formed Motor Cycling Club will hold its first general meeting at the Champion Hotel, Aldersgate Street, E.C., at 7 p.m. on Tuesday, the 19th inst., when the recommendations of the Provisional Committee will be considered. All motor-cyclists desirous of joining the new Club are invited to attend.

THE Turin correspondent of the *Velo* states that Mr. Cecil Rhodes met with an accident on Saturday last while on his way from Milan to Turin, the motor-car in which he was seated having collided with a carriage coming in the opposite direction. Mr. Rhodes was thrown out, but, happily, escaped with a few bruises on the arms and forehead. Both the motor-car and carriage were much damaged.

IN our issue of September 28 we announced that the Locomobile Company of America had decided to control their English business at South Kensington, and that with this view a large area of land at the back of their depot at Sussex Place had been acquired. On this land, as will be seen from the accompanying illustration, a large building is now in course of erection, consisting of two floors, each 180 feet long by 60 feet wide, the height from the basement to the peak being 39 feet. This building, where the shipping business is to be handled by direct delivery on to the main floor, is led up to by a wide roadway from the main street, the whole of the cars and parts being delivered direct on to the floor, where they will be stored prior to being transferred to the showrooms as required. The basement of this building will be devoted to repairs and the assembling of the parts as they arrive from America. In addition, branching off the main entrance, is a 12-foot roadway at the back of the depot, leading up to a special storage building, measuring 68 feet by 21 feet, where arrangements will be made for cleaning, oiling, and storing vehicles belonging to private owners at a fixed monthly or annual rate.

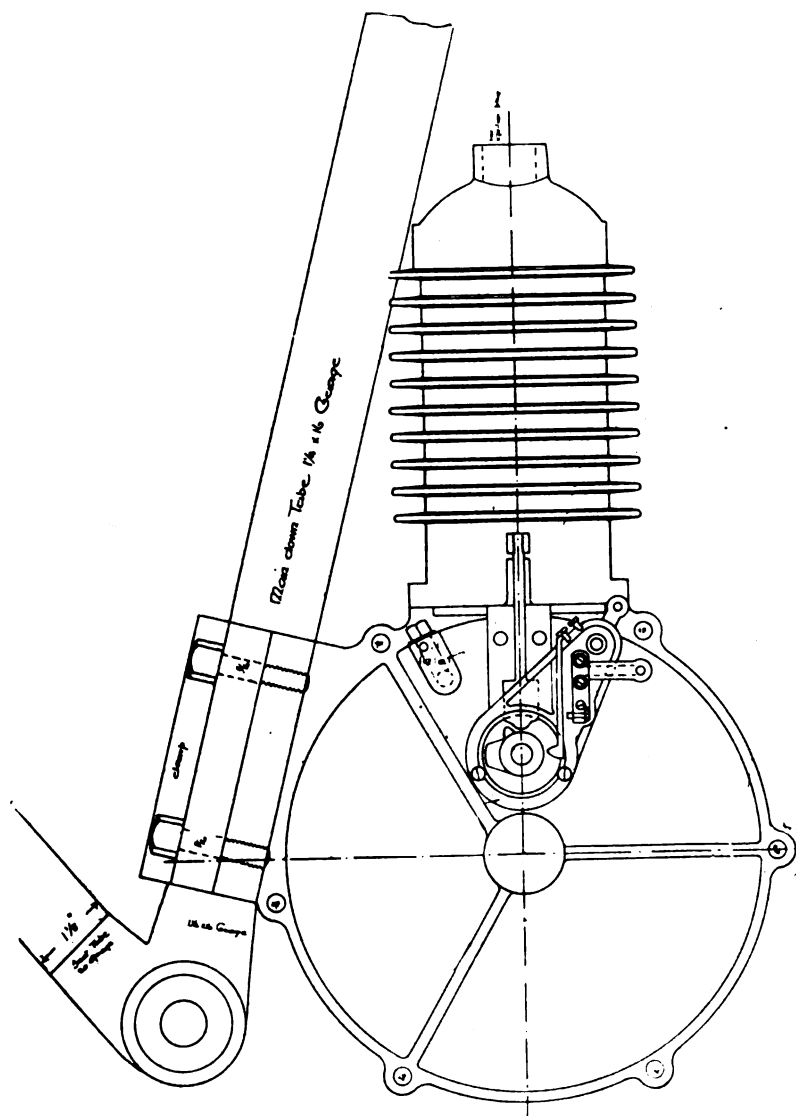
THE CARLTON BICYCLE MOTOR.



THE accompanying illustrations show a general view and section of a new petroleum-spirit air-cooled motor, intended for use on motor-bicycles, which has just been put on the market by the Carlton Motor-Company, of Elm Grove, Cricklewood, N.W. The engine, which comprises a number of special features, develops $1\frac{1}{2}$ h.p., the normal speed being 1,400 revolutions per minute. By means of the variable electrical ignition this can be increased up to 2,000 revolutions. A neat form of contact is fitted, also a novel design of spray carburettor. The latter, which is being made in several sizes, is mechanically controlled, the feed of petrol and air being regu-

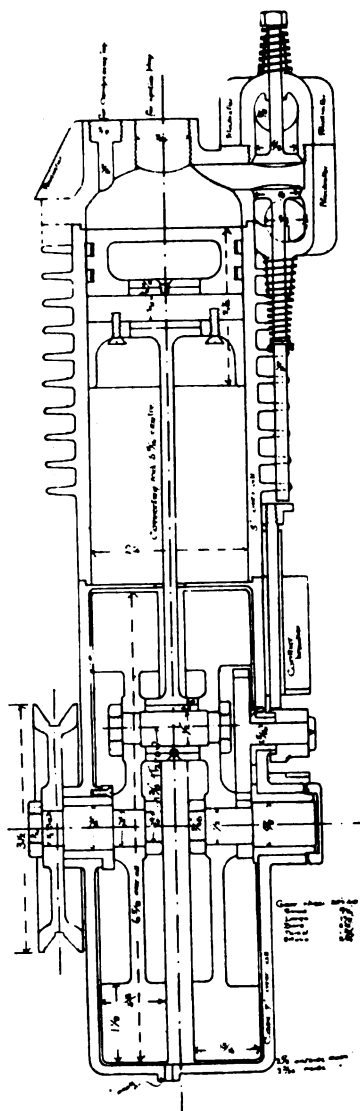
main shafts are made of steel, while the crank case is of aluminium. The latter metal is also used for the silencer. The engine, which weighs 30lbs., is made in two patterns—one with clips, to allow of its being fastened below the bottom cross tube of the frame, and one arranged for attachment above the main tube, the latter form also having a detachable clamp to attach to the seat tube. The Carlton Company are also building complete motor-bicycles and constructing larger types of water-cooled engines from $3\frac{1}{2}$ h.p. single-cylinder up to 9 h.p. double-cylinder.

IN view of the satisfactory results obtained by motor-cars during the recent automobile tour of Italy, the Italian Minister of War has decided to award prizes each year to manufacturers who



ELEVATION.

lated automatically. The makers inform us that they have tried ordinary paraffin oil, methylated spirits, and petrol with the new carburettor and that the engine has given identical results without any alterations. It will be noticed that the sparking plug is located in the centre of the head and that the compression cock is at the side of the plug. The cylinder and other castings are made from a special pot metal mixture of iron which results in a tough material specially adapted for light work. Phosphor bronze bearings of large size are used throughout and great care has been devoted to the question of lubrication. On the top of the flange of the engine-shaft bearing is cast an oil cup, from which the oil is conveyed to the bearing by means of a hole through the latter, the oil cup being kept filled by the splash of the oil in the crank case. The connecting-rods, pinions, and



SECTIONAL ELEVATION.

have applied themselves to the perfection of the motor-vehicle with conspicuous success.

The municipal authorities of Aix-la-Chapelle have lately acquired a motor street-watering cart. The vehicle was built by Messrs. F. Scheibler, of that town.

THE directors of the Edinburgh Autocar Company have issued a report asking the instructions of the shareholders on the question of "whether the business is now to be finally wound up, or whether the shareholders are prepared to adopt some scheme for obviating enforced realisation to meet the remaining debentures, and preserve the business and goodwill until the motor-car may be perfected to such an extent as to justify the company conducting its business on the scale originally proposed."

THE SOUTHSEA ANNIVERSARY RUN.

TO-DAY (Saturday) the motoring world will celebrate the fifth anniversary of the coming into operation of the Locomotives on Highway Act, 1896, by a tour to Southsea. The event, which has been organised by the Automobile Club of Great Britain and Ireland, has brought forth no less than 192 entries, a full list of which is given on another page. From this list it will be seen that not only are steam and petrol cars well represented, but that it includes a couple of electric cars which will essay to make the long run.

The vehicles will draw up and start in the order of their arrival in Horse Guards' Avenue, Whitehall, S.W. The first car will be on the near side of Horse Guards' Avenue, close to its junction with Whitehall, and facing the Horse Guards' clock. The other vehicles should, on arrival, be driven into position immediately in the rear of the last car in the procession. The start will take place at 9.30 a.m. Time-cards should be filled in by the timekeepers on passing the starting point. No passing will be permitted until beyond the top of Egham Hill, the speed of the procession to that point being regulated by the leading car. If a vehicle, during the procession, cannot be kept close to the vehicle immediately in front of it, the driver must draw to the near side and sign to the drivers following to pass him; otherwise breaking rank prior to the top of Egham Hill or at starting places will involve disqualification for certificates. On arrival at the top of Egham Hill vehicles must draw up close to the near side of the road; they must keep in the same order as on arrival, and gradually move up to the starting flag, where they will be re-started at quarter minute intervals in order to avoid inconvenience to other traffic. Vehicles arriving there after the starting flag is removed may proceed on their journey without halt. Speed must be carefully moderated to eight miles per hour in passing through all town and villages, and within them passing or speed in excess of eight miles per hour are prohibited. The Committee of the A.C.G.B.I. beg that drivers will respect the law as to speed; will use every caution in turning corners and passing through towns and villages; and will show every consideration for other users of the road, especially those in charge of restive horses. The tour is in no sense a race, and, as it is desired by its means to popularise motor-vehicles, drivers are besought to avoid driving at unlawful speeds. At the stopping flag outside Winchester, stop for time cards to be filled in. Luncheon will be taken at Winchester. The signal to re-start will be given on the outskirts of Winchester at 3.15 p.m. No vehicle will be permitted to start before that hour, and vehicles must draw up in single file on the near side, and on no account abreast, in the order of their arrival at the re-starting point. Cards should be presented to the timekeepers on starting from this point in order that time may be recorded. On arrival at seventeenth mile stone from Cosham (on R.) before entering Cosham, the vehicles must draw up in their order of arrival on the near side of the road. Cards should be presented to the timekeepers there in order that times may be recorded. The vehicles must remain at the seventeenth milestone from Southampton, outside Cosham, until the signal is given to start, and will then proceed in procession to the Gordon Road on Southsea Common.

Stops that are made to light carriage lamps, or stops made to render assistance in the case of accident or serious personal injury, will not be counted as stops, subject to the satisfaction of the Committee that such stops were necessary, and that no repairs, adjustments, or lubrication, etc., were effected to the vehicle during such stops. Stops for punctures will disqualify for a non-stop certificate.

A dinner will be held at the Portland Hall, Kent Road, Southsea, at eight p.m., which all those (including ladies) taking part in the tour may attend. The Hon. John Scott Montagu, M.P. for the New Forest Division of Hampshire, will take the chair.

Below we give an outline of the route which will be followed, together with the intermediate mileages:—

Miles from London.	THE ROUTE.	Intermediate Mileage.
—	London (Whitehall)	—
—	Putney Bridge	—
—	Richmond Park	—
—	Twickenham	—
—	Hounslow Heath	—
22½	Staines	—
24	Egham Hill (stop)	1½
28½	Sunningdale	4½
32	Bagshot	3½
36½	Blackwater	4½
41½	Hartford Bridge	4½
45½	Hook	4½
51½	Basingstoke	5½
57½	Popham Lane	5½
63½	Lunway's Inn	6½
66½	Kingsworthy	2½
68½	Winchester (lunch)	2
69½	St. Cross	1
72	Twyford	2½
74	Fishers Pond (turn left)	2
76½	Lower Upham	2½
79	Bishop Waltham	2½
83½	Wickham	4½
86½	Fareham	3½

89½	.....	Porchester	.....	2½
92½	.....	Cosham (stop)	.....	3
93½	.....	Hilsea	.....	1½
95½	.....	Landport	.....	2
97	.....	Portsmouth	.....	1½
98	.....	Southsea	.....	1

Lighting up time, 5.9 p.m.

A Blue Flag = turn to the right; a Lemon Flag = turn to the left.

THE RIGHT TO STORE PETROL.

IN the King's Bench last week, the appeal in the case Godfrey v. Napier was heard. The appellant, a County Council inspector, summoned the respondent, Napier, who was a motor-car manufacturer, for storing a quantity of petroleum otherwise than in pursuance of the regulations of the local authority. It appeared that, prior to the Highways and Locomotives Act of 1896, which laid down the conditions under which motor-cars or light locomotives might be used on highways, the regulations as to storage of petroleum and liquid fuel was left, under the Explosives Act, in the hands of the local authority; but under the statute of 1896 it was put under the Home Office, and the Secretary of State was required to make regulations, and had done so. The respondent, however, the inspector alleged, had rendered himself liable to penalties, because he had kept a quantity of petroleum spirit, in regard to which it was urged, that he should have taken out a licence. The metropolitan police magistrate, before whom the matter came, declined to convict, and hence the present appeal.

Mr. Daldy appeared for the County Council in support of the appeal, while Mr. Minton Senhouse appeared for the respondent. In the course of Mr. Daldy's argument, the Lord Chief Justice asked: Is not this really an attempt by the County Council to substitute their own regulations for the Secretary of State's regulations? Mr. Daldy: That is what my learned friend might say. I left it to him to say it.

The Lord Chief Justice, without calling upon Mr. Minton Senhouse, after considerable discussion, delivered judgment. He said that under the Explosives Act of 1871 nobody could keep petroleum, except in certain quantities, unless under a licence of the County Council, who had power to annex to it such conditions as to storage as the local authority might deem expedient. Then came the Act of 1896, which for some reason—probably because road locomotives—required special regulation independent of local authorities—provided that the keeping of petroleum, etc., for the purposes of light locomotives, should be subject to the regulations of the Secretary of State, which should have effect notwithstanding the provisions of the Explosives Act. What he was deciding was that it was not the County Council who were to fix the regulations, but the Secretary of State. The summons here was not for not keeping petroleum in accordance with the Secretary of State's regulations, nor was it contended that, even if it were kept in accordance with those regulations, there were other conditions beyond those which the County Council might lay down. He gave no decision as to whether there might not be some other conditions, because the Secretary of State had not covered the ground. But in this case the respondent was summoned because it was said the petroleum had been kept otherwise than in pursuance of a licence, which he understood to mean kept under conditions not authorised by the County Council. In his opinion the County Council were not entitled to impose upon the keepers of petroleum different regulations to those imposed by the Secretary of State. Then it was contended that this was not kept for the purposes of light locomotives, because respondent only manufactured them; but the magistrate had found that it was used for testing locomotives in running along the roads in the neighbourhood. The words of the Act, "for the purpose of light locomotives," were perfectly general, however, and it was perfectly possible for the magistrate to come to that conclusion. If the contention was that the County Council was still to have the power to make regulations inconsistent with those of the Secretary of State, he thought it was wrong. The other Judges concurred, and the appeal was dismissed with costs.

It is therefore now definitely settled that manufacturers, merchants, and agents of motor-cars may store petrol, or may use or keep the same on their premises for use, and for the purpose of running their cars, without a licence. If, of course, any of these should commence to sell petrol they would then have to have a licence under the Petroleum Act.

MOTOR-CAR COLLISION.

AT Cardiff County Court, Richard Powell, boilermaker, Barry, sued Walter Mules, of the Albion Hotel, Penarth, for £20 damages caused to a horse and trap while the defendant was driving a motor-car—negligently, it was said. Plaintiff said that while driving along the Sully Road, which is only some 9 ft. wide, the motor-car came round a curve 50 yards away at about fourteen miles an hour, and, though he put his hand up and shouted, "Stop," pulling the pony aside, a collision occurred. No warning was given by the motor party. The defence was that the motor-car when it touched the trap was "crawling," and that the damage was due to the rearing and running away of the pony. His Honour gave judgment for plaintiff for the full amount, attributing the accident to the motor-car running round a corner without care.

THE SOUTHSEA ANNIVERSARY RUN.

THE following is a list of the vehicles that have so far been entered for the Anniversary Run to Southsea, on the 16th inst.

Official Name.	Name of Owner.	Name of Makers, &c.	H.P. of Motor.	Motive Power.*	Number of Seats.
Ablaze ...	Mr. E. W. P. Peull	Boyer Prunell	4½	PS	2 NSC†
Accessible..	Mr. C. K. Harding	Century Engineering and Motor Co.	6	PS	2 —
Achilles ...	Mr. Walter Munn	De Dion Bouton	4½	PS	4 NSC
Acme	Wilson and Pilcher.	Wilson and Pilcher.	5	PS	4 NSC
Advance ...	Mr. W. Acton	Sports Motor Co.	4½	PS	2 NSC
Aimée	Mr. A. E. J. Steele.	Sports Motor Co.	3½	PS	2 NSC
Albany	Locomobile Co.	Locomobile Co.	5	S	4 —
Albatross...	Mr. P. Frost Smith	Cannstatt Daimler	6	PS	2 NSC
Alloas	Mr. C. Cordingley.	Motor Manufacturing Co.	16	PS	4 NSC
Aluminium	Mr. W. D. Astell.	New Orleans Motor Co.	7	PS	2 —
Anadyomene	Mr. C. L. Freeston	New Orleans Motor Co.	7	PS	4 NSC
Antrona ...	Mr. Henry Edmunds.	Daimler Co., Ltd.	10	PS	4 —
Atlantida ...	Mr. Noel B. Kenealy.	Delahaye.	10	PS	4 NSC
Atom	Mr. S. F. Edge.	Gladiator	6½	PS	4 NSC
Au Revoir.	Mr. C. G. Knight	De Dion Bouton	3½	PS	4 —
Babette ...	Mr. J. D. Hill.	Panhard and Levassor.	6	PS	4 NSC
Bee	Mr. G. D. Barnes.	Renault Frères	5	PS	4 NSC
Belber	Messrs. Davis, Allen.	Wisconsin Works.	1½	PS	1 NSC
Belle	Mr. E. J. Cole	Locomobile Co.	4½	S	2 —
Blackmoor	Mr. E. H. H. Bartlett.	Mors	10	PS	4 NSC
Blake ...	Mr. W. H. Roberts.	Daimler Motor Co.	6	PS	6 NSC
Blondine ...	Mr. Granville M. Kenyon.	Darracq and Co.	6	PS	4 NSC
Bösewicht	Mr. Reginald E. Bickerton.	Dennis Bros....	6	PS	4 NSC
Boston	Locomobile Co.	Locomobile Co.	5	S	2 —
Bride	Mr. W. C. Bersey.	Panhard	8	PS	2 NSC
Bridgeport	Locomobile Co.	Locomobile Co.	5	S	2 —
Briton	Mr. G. Foster Pedley.	Daimler Motor Co.	6	PS	4 NSC
Bubble	Mr. Owen H. Baylton.	Reading Steam Carriage Co.	5	S	2 —
Buckeye ...	Mr. Walter C. White	White Machine Co.	6	S	2 —
Buffalo	Locomobile Co.	Locomobile Co.	5	S	2 —
Bumper ...	Mr. Thomas Toovey.	Peugeot Frères	8	PS	4 —
Buoyant ...	Mr. H. T. Cave	Panhard and Levassor	6	PS	4 NSC
Butterfly ...	Mr. Fritz Muhlenkamp.	Panhard and Levassor.	6	PS	4 NSC
Buzzard ...	Mr. M. H. Buckea.	Motor Manufacturing Co.	7	PS	4 NSC
Buzzer	Ormonde Motor Co.	Antoine Fils and Co.	1½	PS	1 NSC
Caer Gybi	Mr. Alan A. L. Hickman.	Decauville	8½	PS	4 NSC
Castelnau ..	Mr. Horace O. Stratford.	Decauville	8½	PS	4 NSC
Cellerimus.	Mr. Claude Browne.	Wolseley Motor Car Co.	10	PS	5 NSC

Official Name.	Name of Owner.	Name of Maker, &c.	H.P. of Motor.	Motive Power.	Number of Seats.
Centaur ...	Mr. H. H. Clarke	Burns	3½	PS	2 —
Charmer ...	Mr. Charles Jarrot.	Panhard and Levassor	40	PS	2 NSC
Chemineau	Dr. E. Lehweß	Durkopp	10	PS	6 NSC
Cherub	Mr. T. W. Leith.	Century Engineering and Motor Co.	5	PS	2 NSC
Chicago ...	Locomobile Co.	Locomobile Co.	5	S	2 —
Clarence ...	Mr. Arthur Goodwin.	Vincke and Co.	24	PS	4 —
Cockatoo...	Mr. W. L. Jones.	Century Engineering Co	5	PS	2 NSC
Colleen	Mr. Worby Beaumont.	—	—	—	—
Comet	Mr. H. M. Case	De Dion Bouton.	2½	PS	1 —
Courier	Mr. A. E. Wilson.	Peugeot Frères	4½	PS	2 NSC
Crab	Mr. Paris Singer.	D. Napier and Son.	16	PS	4 NSC
Cumfy	Mr. Ernest Owers.	Daimler Motor Co.	18	PS	4 NSC
Cunctator..	Mr. Ernest de Wilton.	Panhard	6	PS	4 NSC
Daisy	Mr. Oswald B. Colls.	Weston Motors	6	S	2 —
Daydreams	Mr. H. Austin	Wolseley Tool and Motor Car Co., Ltd.	20	PS	4 NSC
Diadem ...	Lanchester Engine Co.	Lanchester Engine Co.	10	PS	4 NSC
Diana	Mr. H. H. L. Lewis.	Daimler Motor Co.	6	PS	4 —
Dick	Mr. C. Friswell	Peugeot Frères	7	PS	2 NSC
Doctor	Mr. H. Belcher	Humber, Ltd.	6	PS	4 NSC
Dot	Daimler Motor Co.	Daimler Motor Co.	4	PS	2 NSC
Dolores	Mr. J. Taylor N. Davies.	Daimler Motor Co.	6	PS	4 NSC
Donnachie	Mr. J. J. Robertson.	Hurst and Lloyd.	6	PS	2 —
Dragon	Mr. Dick Farman.	Morisse et Cie.	8	PS	4 NSC
Eagle	Mr. Walter Williams.	Daimler Company, Ltd.	6	PS	5 NSC
Edna	Mr. Harold Norfolk.	Renault Frères	4½	PS	3 NSC
Egalité ...	Motor-Car Co., Ltd.	Société Decauville.	8½	PS	4 NSC
Eileen	Mr. W. Fountain.	Motor Manufacturing Co.	8	PS	4 NSC
Elbanna ...	Dr. Murphy ...	De Dion Bouton.	4½	PS	4 NSC
Electrical...	Mr. Theodore Chambers.	Krieger - Leitner.	9	E	4 NSC
Eva	Mr. Frank H. Butler.	Renault Frères	5	PS	3 NSC
Falcon	Major H. Stuart Murray.	Century Motor Co.	5	PS	2 NSC
Favorite ...	Mr. John Smith.	Decauville	8½	PS	4 NSC
Firefly	Mr. Lionel Savory.	Motor Manufacturing Co.	7	PS	2 NSC
Fraternité	Capt W. Corke.	Decauville	8½	PS	4 NSC
Freedom ...	Mr. E. W. Hill	Motor Manufacturing Co.	7	PS	4 NSC
Geegee	Mr. Alfred Dunhill	Renault Frères	4	PS	2 NSC
Gipsy	Mr. Alfred Ledger	Daimler Motor Co.	6½	PS	5 —
Gleaner ...	Col. H. N. B. Good.	New Orleans Motor Co., Ltd.	3	PS	2 NSC
Gondola ...	Mr. F. W. Rogers.	Daimler Company, Ltd.	6	PS	4 —
Guiltless ..	Roadway Auto-car Co.	Renault Frères	4½	PS	4 NSC
Hotspur ...	Mr. T. Bernard Percy.	New Orleans Motor Co.	7	PS	4 NSC

* Petroleum spirit is indicated by PS; Steam by S; Electricity by E.
† Vehicles entered for non-stop certificate are denoted by the letters NSC.

Official Name.	Name of Owner.	Name of Makers, &c.	H.P. of Motor.	Motive Power.	Number of seats.		Official Name.	Name of Owner.	Name of Makers, &c.	H.P. of Motor.	Motive Power.	Number of Seats.	
Impi	Mr. John H. Gretton	Motor Manufacturing Co.	7	PS	4	NSC	Owl	Mr. Arthur F. Mulliver.	Daimler Motor Co., Ltd.	6	PS	4	NSC
Infant	Mr. F. Howard Mercer.	Peugeot Frères	5	PS	3	—	Pacer	Mr. J. Van Hooydonk.	Phoenix Motor Works.	1½	PS	1	—
Ion... ..	Mr. Roger W. Wallace, K.C.	Motor Manufacturing Co.	8	PS	4	NSC	Paratus ...	Mr. J. M. Gorham.	De Dion Bouton, Ltd.	4½	PS	2	NSC
Iris	Mr. W. J. Peall	Daimler Motor Co.	12	PS	4	NSC	Parnassus...	Messrs. J. Parr and Co., Ltd.	J. Parr and Co., Ltd.	6	PS	4	NSC
Jabberwock	Mr. Harry J. May	Motor Manufacturing Co.	5½	PS	4	NSC	Patricia ...	Daimler Motor Co.	Daimler Motor Co.	6	PS	4	NSC
Jenny Wren	Mr. A. Hines	De Dion Bouton	3½	PS	3	—	Paulus	Mr. A. Deacon	J. Parr and Co.	6	PS	4	NSC
Kathildred	Mr. Harold Johnson.	Peugeot Frères	6	PS	3	—	Pegasus ...	Messrs. J. Parr and Co.	J. Parr and Co.	6	PS	2	NSC
Kit	Mr. Ballin Hinde.	Panhard and Levassor.	12	PS	4	—	Peggy	Mrs. Manville	Gladiator	6	PS	4	NSC
Klipsepring..	Mr. Alex. L. Miller	Morgan Donne	2½	PS	2	NSC	Pendennis	Daimler Motor Co.	Daimler Motor Co.	6	PS	4	NSC
La Dor-meuse	Mr. C. K. Gregson.	De Dion Bouton, Ltd.	3½	PS	2	NSC	Petrel ...	Mr. C. W. Brown.	Pieper.	3	PS	3	NSC
La Limace	Mr. T. A. Common.	Motor Manufacturing Co.	6½	PS	4	NSC	Petrolls ...	The Hon. C. S. Rolls.	Panhard and Levassor.	20	PS	3	NSC
La Mira ...	Mr. W. J. Jones	Elans	3½	PS	2	—	Philard.....	Mr. R. E. Phillips.	—	—	—	—	—
La Panne...	Mr. E. M. C. Instone.	Motor Manufacturing Co.	12	PS	5	NSC	Philo.....	Mr. C. Rhind-Tuff.	Hurst and Lloyd.	8	PS	4	NSC
Lady Mary	Mr. W. M. Hodges.	Daimler Motor Co.	6	PS	4	NSC	Pioneer.....	Mr. Frederick R. Simms.	Geo. F. Milnes and Co., Ltd.	12	PS	5	—
Lancaster ..	Mr. A. G. Reynolds	Benz	3½	PS	2	—	Premier ...	The Roadway Autocar Co.	Mors	10	PS	4	NSC
Le Chat Noir	Mr. Oliver Stanton.	Daimler Company, Ltd.	24	PS	4	NSC	Powerful ...	Mr. Theodore Chambers.	British and Foreign Electrical Vehicle Co., Ltd.	8	E	4	NSC
Le Gamin...	Mr. H. Bevan Swift.	De Dion Bouton, Ltd.	2½	PS	1	NSC	Primrose ...	Mr. Lionel Savory.	Motor Manufacturing Co.	7	PS	2	NSC
Le Limacon	Mr. S. F. Edge	D. Napier and Son.	9	PS	4	NSC	Puffer ...	Mr. G. T. Langridge.	Morgan Doune.	5	PS	4	NSC
Le Papillon	Mr. R. V. O. Graves.	Mors	5	PS	3	—	Quiet	Mr. Victor Hart	W.T. and S. E. Botwood.	14	PS	4	NSC
L'Avenir ...	Mr. J. Chitty.	Fernandez and Co.	5	PS	4	NSC	Ravina	Mr. Ernest Estcourt.	Daimler Motor Co.	6	PS	4	NSC
L'Espérance	Mr. W. B. Colquhoun.	Gladiator	6½	PS	4	—	Redivivus...	Mr. C. L. Schwind.	Daimler Motor Co.	6	PS	4	NSC
Leader ...	Mr. Alfred Burgess.	Motor Manufacturing Co.	—	PS	—	NSC	Reliable ...	Mr. T. Ratcliffe.	T. Ratcliffe ...	1½	PS	—	NSC
Leda	Mr. F. E. Swann.	Hurst and Lloyd.	6	PS	4	NSC	Renown ...	The Roadway Autocar Co.	Mors	10	PS	4	NSC
Legal Limit	Mr. A. Holford Gower	Sports Motor Co.	9	PS	4	NSC	Ripple	Mr. T. W. Staples Firth	Motor Manufacturing Co.	6	PS	5	NSC
Leonidas ...	Mr. John J. Leonard.	Werner	1½	PS	2	—	Robin ...	Mr. Nevill Copland.	Societe Chainless.	12	PS	4	NSC
Lewis	Messrs. Davis, Allen	Wisconsin Works	1½	PS	1	NSC	Rocket	Mr. St. M. Willoughby.	New Orleans Motor Co.	3½	PS	2	NSC
Liberté ...	Motor-Car Co., Ltd.	Société Decauville.	8½	PS	2	NSC	Romsey ...	Mr. Wilfred Ashley.	D. Napier and Son.	16	PS	4	—
Lodden.....	Mr. F. Watson	Daimler Motor Co.	9	PS	6	NSC	Rotifer ...	Mr. Alfred Cornell.	Benz.	7	PS	3	NSC
Loxwood ...	Mr. W. G. King	Wolseley Motor-Car Co.	10	PS	4	—	Rover ...	Mr. W. G. H. Bramson.	Buchet.	12	PS	4	NSC
Luigi.....	Mr. E. J. Harrison.	Humber-Aster	3	PS	2	—	St. Elmo ...	Mr. John Hutchings	Darracq et Cie.	6	PS	4	NSC
Marion	Mr. C. Bunker	Renault Frères	2½	PS	2	NSC	Sans Souci	Mr. A. G. S. Lyford	New Orleans Motor Co.	6	PS	2	NSC
Mercury ...	Mr. J. Underhill.	Wolseley Motor-Car Co.	10	PS	4	NSC	Santos	Mr. W. J. Peall.	Daimler Motor Co.	6	PS	4	NSC
Miranda ...	Mr. C. Vernon Pugh.	Lanchester Engine Co.	10	PS	5	NSC	Scorpion ...	Mr. F. Albert Bonsor.	Motor Manufacturing Co.	8	PS	6	—
Muriel	Mr. J. Muir	Decauville.....	8½	PS	4	—	Shamrock	Mr. H. C. C. Shaw.	Panhard and Levassor.	7	PS	4	NSC
Mannacat	Mrs. H. G. Allen.	New Orleans	6	PS	3	NSC	Silent	Mr. H. A. House, Jun.	Steam Car Co., House's System	10	S	4	—
Newport ...	Locomobile Co.	Locomobile Co.	5	S	2	—	Sloth.....	Dr. C. Whitehall Cooke	De Dion Bouton, Ltd.	3½	PS	2	NSC
New York	Locomobile Co.	Locomobile Co.	5	S	2	—	Slowcoach..	Mr. W. White-way	Decauville.....	9½	PS	4	NSC
Niagara ...	Locomobile Co.	Locomobile Co.	5	S	2	—	Sluggard ...	Mr. C. Johnson	New Orleans Motor Co.	7	PS	4	NSC
Novelty ...	Mr. H. Loeffler	James and Brown.	8	PS	4	NSC	Snail.....	Mr. Mark Mayhew	Panhard and Levassor	20	PS	2	NSC
Odear	Mr. W. Wheatland.	Panhard and Levassor.	7	PS	4	—							
Old Blue...	Mr. F. Guy Lewin.	Motor Manufacturing Co.	5½	PS	4	NSC							
Ophir	Mr. Ernest Martin.	Motor Manufacturing Co.	6	PS	5	NSC							
Osprey	Mr. H. O. Hall	Darracq et Cie	9	PS	4	—							

Official Name.	Name of Owner.	Name of Maker, &c.	H.P. of Motor.	Motive Power.	Number of Seats.	
Snipe	Mr. Roland Browne.	Wolsley Motor Car Co.	10	PS	4	NSC
So-So	Mr. L. Schlenheim.	Motor Manufacturing Co.	12	PS	6	—
Soupac	Mr. S. F. Beevor	Daimler Motor Co., Ltd.	6	PS	4	NSC
Split Pin ...	Mr. Roger H. Fuller	De Dion Bouton, Ltd.	4½	PS	2	NSC
Standard...	Shippey Bros., Ltd.	Milwaukee Automobile Co.	5	S	2	—
Sundayboy	Mr. A. W. Armstrong	Daimler Motor Co.	6	PS	4	NSC
Swallow ...	Mr. H. H. Kenyon.	Darracq et Cie.	6½	PS	4	—
Swift.....	Mr. J. Edward Walter.	Decauville.....	8½	PS	4	NSC
Tempter ...	Mr. F. B. Collins	De Dion Bouton, Ltd.	2½	PS	3	NSC
The Beacon	Mr. C. P. Cunliffe.	Decauville.....	8½	PS	4	NSC
The Flirt...	Mr. F. H. Buckmaster	De Dion Bouton, Ltd.	4½	PS	4	NSC
Tired Tim	Mr. O. E. Lord	Mors	24	PS	4	—
Torpedo ...	Century Motor Co.	Century Motor Co.	5	PS	2	NSC
Tourist.....	Mr. G. Iden	Motor Manufacturing Co.	7	PS	4	NSC
Traveller ...	Mr. E. Baruch-Blaker	Dennis Bros.	2½	PS	—	NSC
Twencent...	Mr. J. L. Souhami.	Hurst and Lloyd	4	PS	4	NSC
Uncle Sam	Earl Russell...	Haynes-Apperson.	8	PS	4	NSC
Unicorn ...	Mr. Walter Gutmann	Weston Motors	6	S	2	—
Valkyrie ...	J. S. Critchley	Daimler Motor Co.	16	PS	4	NSC
Vega.....	Mr. Carlton J. Lambert.	Pieper.....	3½	PS	2	—
Vera	Mr. H. H. Rees	De Dion Bouton	3½	PS	3	—
Vernon.....	Mr. F. C. Vernon Wentworth	Decauville	8½	PS	4	NSC
Vishnu.....	Lanchester Engine Co.	Lanchester Engine Co.	10	PS	4	NSC
Vixen	Century Motor Co.	Century Motor Co.	5	PS	2	NSC
Voiture ...	Mr. A. W. Mills	De Dion Bouton	4½	PS	3	—
Waif	Mr. Mawdsley Brooke	Daimler Motor Co.	7	PS	4	—
Wallcreep .	Mr. H. G. Burford	G. F. Milnes and Co.	16	PS	5	—
Wanderer..	Mr. W. H. Kitto	Motor Trading Co.	7½	PS	4	NSC
Waveneyll.	Mr. S. A. Bailey	Stirlings, Ltd.	7½	PS	—	—
Whizzer ...	Mr. Herbert S. A. Smith	Panhard and Levassor	6	PS	4	NSC
Worm	Mr. G. H. Smith	United Motor Industries, Ltd.	4½	PS	4	NSC
Xenia	Mr. Alex. Marcet	Decauville	8½	PS	4	NSC

MOTOR-CAR DRIVER IN TROUBLE.

At Plymouth, Thomas Walter, motor-car driver, was charged with being drunk whilst in charge of a motor-car in Union Street the previous evening. P.C. Ormes said at the tram terminus he saw defendant, who appeared to be intoxicated. On being spoken to he became abusive, and was locked up. The Bench remarked that it was very dangerous for a man not sober to be in charge of a motor-car, and fined defendant 20s. and costs, or seven days. George Cooker, engine driver, was charged with obstructing the police in Bank of England Place. The motor-car which had been driven by Walter was standing in the place pending the arrival of its owner, Mr. Mumford, of Mutley, and defendant was alleged to have interfered with P.C. Burrow for twenty minutes whilst he was clearing the street, and he also disputed the right of the police to take away the driver. Defendant said he was only looking after

the motor car, and thereby prevented an explosion by putting down the lever. Fined 5s., or three days.

LICENCES.

At Preston Police Court, James Walmsley, coachbuilder, was summoned for keeping a motor-car without a licence on September 25th. Mr. Child, supervisor of inland revenue, said there had been considerable correspondence with the defendant, who had refused to take out a licence. The defendant said the car and several others were the property of James Walmsley and Co. He had made and patented the carriage bodies, and had taken the cars out for experimental and demonstrative purposes, running to his residence in the suburbs and as far as the Lake district. The Chairman said the case was brought as a test case, and defendant must pay a fine of 20s. and costs, or one month.

AN APPEAL DISMISSED.

In the King's Bench Division, before the Lord Chief Justice, Mr. Justice Darling, and Mr. Justice Channell, the case of Mayhew v. Sutton was heard. The appellant, Mr. Mark Mayhew, sought to set aside a conviction by the Justices of Bucks, who had fined him upon an information preferred by Police-superintendent Sutton for driving a motor-car to the common danger of the public at Denham. It was set forth in the information that Police-constable Payne stated at the hearing that about 7 p.m. on Sunday, April 28th, he was on duty at Denham and saw a motor-car coming down Red Hill at a terrific pace. He walked into the centre of the road and held up both arms, and when the car came round the corner, about 340 yards from where he stood, the driver could see him, and drove straight up to him, and he just had time to step on one side when the car passed him, and the driver brought the car to a standstill sixty yards away from where he passed him. The driver was, he said, the appellant. No evidence was given before the magistrates that at the time in question there were any passenger or passengers on the highway, or that any passenger was endangered. The magistrates convicted and fined Mr. Mayhew 10s., with 8s. 6d. costs. The Lord Chief Justice, in giving judgment, said that the Justices upon evidence before them of a high rate of speed might say that such a high rate of speed was to the common danger of passengers, though no particular passenger was shown to have run out of the way, or to have fled for his life, or to have taken steps to avoid being run down. On the uncontradicted evidence it was open for the Justices to say that in this case the driving was to the common danger. The other Judges concurred, and the appeal was dismissed.

RUN DOWN BY A MOTOR-CAR.

THOMAS ALFRED AUSTIN, licensed victualler, of Euston Road, N.W., sued the Motor Mart Company, Limited, to recover £50, damages in respect of injuries sustained through being run down by a motor-car belonging to defendants. Plaintiff stated that on Saturday, August 17th, he was riding on his bicycle along Euston Road, and proceeded into Woburn Place for the purpose of getting into Russell Square on the north side. He had just entered Russell Square, when a motor-car dashed into his machine and threw him violently to the ground. When he got up the motor-car was on the hind wheel of his machine. He was on the right-hand side of the road, about four yards from the kerb, when the collision took place. Cross-examined, witness admitted that he had not held up his hand whilst trying to cross the road in front of the motor-car. Other witnesses having been called by plaintiff, Harry Lindop, the driver of the motor-car, was called for the defence. He stated that when driving towards Russell Square he saw two carts and two cyclists travelling in front of him. In endeavouring to pass the carts he had to pull out to the off side, and in drawing out he continually rang his bell. At the corner of Woburn Place he noticed plaintiff pulling out to the right, without giving any warning. He (witness) saw that a collision was likely to occur, so in trying to avoid it he directed his car in the same course as taken by plaintiff, in the hope that he would be able to steer clear of him. In that effort he was unsuccessful. The Judge, in summing up, drew attention to plaintiff's admission that he gave no signal as he pulled out to the right on entering the square. The jury found for the plaintiff with £15 damages.

TWO MOTOR-CAR FATALITIES.

EAST SUFFOLK was recently the scene of two fatal accidents, in both of which a motor-vehicle figured. Mr. John Henry Skipper, cycle manufacturer, of Lowestoft, who was riding a "motor-quad," was killed at Kessingland through a bolting horse and tumbril colliding with his cycle. The other occupant, Mr. Norton Sawyer, escaped with an injured head. The driver of the tumbril, Mr. Frank Cutts, a Benacre farmer, admitted that he had no light, and the jury blamed him for his neglect. In the second case, Ernest William Aldred, a carter, whose horses were frightened by a motor-car owned by Mr. Mulholland, of Worlingham Hall, was endeavouring to stop them bolting when he was knocked down, and a wheel went over him, causing death. It was not observed that Aldred's horses were giving him trouble till the motor-car was nearly up to them. "Accidental death" was the verdict, but the jury thought the driver of the motor-car should have exercised more care.

FURIOUS DRIVING CASES.



At Wigton Police-court, Mr. W. Fletcher, of Cleator Moor, Cumberland, was fined £1 and £1 4s. costs for furiously driving a motor-car at Aspatria on October 16th. A coachman named Stalker said the car was travelling at a speed of twenty miles an hour through the town. Mr. Brookbank, of Whitehaven, the defendant's advocate, admitted the fact, but said that the defendant had driven all over England and a greater part of Scotland without previous interference by the police.

At Solihull, Gilbert Burnett, of Stoke Green, Coventry, was summoned for driving a motor-car at a furious rate on September 25th, so as to endanger the lives of passengers. Mr. Maddocks, of Coventry, appeared for the defence. From the evidence of Sergeant Rose, it transpired that he saw a motor-car on the Coventry Road, near Sheldon, being driven at the rate of twenty-five miles an hour. In the car was Mr. Belcher, the managing director of the Humber Company. The officer signalled to the defendant to draw up, and the car was brought to a standstill in about a dozen yards. Defendant said he had no power on, and that the car was not going more than twelve miles an hour. There were no persons on the road at the time, and the officer had made an admission to the same effect. Mr. Maddocks commented on the admission, and said that the summons should have been taken out for travelling at an excessive speed, if there had been any offence. People, he said, were accustomed to judge the speed of motor-cars by the noise the car made, and imagined that they were travelling at a greater speed than was the case. Under the circumstances the magistrates dismissed the case.

At the Morpeth County Petty Sessions, Arthur E. George, engineer, of Newcastle, was charged with driving a motor-car furiously at Longhorsley, on September 25th. P.C. Batey stated he saw the defendant driving a motor-car at Longhorsley at a rate of not less than eighteen miles an hour. Defendant, who was fined £5 and costs, said that, with four engines going the top speed of the car was twenty-five miles an hour; two of the four engines were broken, and the car could not get more than half that speed.

BEFORE the Kingston County Bench, Mr. Roland Brown, of Earl's Court, was summoned for driving a light locomotive down Kingston Hill, on October 3rd, at a greater speed than twelve miles an hour. Mr. Grimwood Mears, barrister, appeared for the defendant, who, he said, was travelling on the Continent. Constable Winter said that, in his opinion, the car was going at the rate of about seventeen miles an hour. Witness called upon defendant to stop. Mr. Brown put on the brake, swerved to the side of the road, and ran into a tip-cart, breaking the axle of the cart, and otherwise damaging it. The two men in charge of the tip-cart stated that in their opinion the defendant was driving at the rate of seventeen miles an hour. Mr. Mears held that the evidence of these witnesses was not admissible. They stated that "in their opinion" the defendant was driving at the rate of seventeen miles an hour. But no "opinion" could be evidence against a defendant unless it was the opinion of an expert, and he submitted that a policeman and two labouring men were not experts on speed. He would have accepted the evidence of the constable if he had timed the defendant with a stop-watch. The Chairman: But I saw a case the other day where the time by a stop-watch worked out at 125 miles an hour. Mr. Mears: In that case, sir, there was something wrong with the escapement. The Bench imposed a penalty of £3 11s. 6d., including costs.

At Cranbrook Police Court, Charles Whittington was summoned for driving a motor-car at excessive speed near Ashford. According to police evidence defendant covered a measured quarter of a mile in 57 seconds, which worked out at a speed of over fifteen miles an hour. Defendant obtained an admission from the constable that it was not a stop-watch that was used for timing the car. In defence it was stated that the constable was in plain clothes and rushed out with a stick and stopped the car. Mr. Whittington said it was unreasonable to expect motorists to stop for every man who rushed after them with a stick, as the man might be a robber. Defendant added that his brother was with him riding a bicycle which was not being pedalled at the time, and therefore could not have been going at the rate of fifteen miles an hour. Fined 10s. and costs.

At Dunster, A. Ducros, of 14, Regent Street, London, W., was summoned for driving a motor-car, in the parishes of Selworthy and Culbone, on the 3rd August last, at a greater speed than twelve miles an hour. Defendant did not appear. Seven persons gave evidence, and defendant was fined the maximum penalty of £10, and also ordered to pay £3 7s. 6d. for witness and court fees.

At Godalming, Mr. J. H. Gretton, of London, was summoned for driving a motor-car beyond the legal speed of twelve miles an hour, on Sunday, the 27th ult. Defendant pleaded not guilty. P.C. Cheesman deposed that on Sunday, October 27th, at 12.55 p.m., he was on duty in Meadow, where he saw the defendant driving a motor-car at a greater speed than twelve miles an hour. Directly it passed him he signalled to P.C. Galloway, at the same time starting his stop-watch. Immediately P.C. Galloway signalled that the gentleman had passed him witness stopped his watch. It registered 20 sec., and the distance was 176 yards. He made the speed of the car eighteen miles an hour. Cross-examined: He admitted the hour on the watch was 12.20 instead of 12.55. The Mayor said the Bench thought these points were quite immaterial; the constable had given his evidence

very clearly, and they perfectly understood what he meant. P.C.s. Galloway and Finch having corroborated, defendant called Ernest Instone, who said he was one of the managers of the Motor Manufacturing Company. He examined the car which defendant was lent on the Saturday, and which was in witness's show-room, at Holborn Viaduct. He found it was not in a satisfactory condition, and it was not capable of going more than twelve miles an hour. The carriage would run from ten and a-half to eleven miles. By the Bench: It was not customary to lend out carriages not in condition, but defendant expressed a wish to have this one. In perfect condition the car would run at fifteen miles an hour, and not more. The valves were probably wrong. Robert Bunkall, a motor driver, in the employ of the Motor Manufacturing Company, deposed to accompanying defendant. When they were stopped the defendant asked the constable to show him his watch. He said it was not right. On the journey they had to stop to overhaul the car. He should say it could not go twelve miles an hour. Witness brought the car away, and examined it subsequently. It was a new one, but the engines required overhauling. Defendant himself then gave evidence, and stated that he had driven a motor-car for four years, and had never been stopped before or had the slightest complaint against him. He could assure the Bench that he never travelled on this journey more than twelve miles an hour, and pointed out how easily the constables might have made a mistake in the distance, considering the way in which they measured it with a piece of string. The Bench, after a brief deliberation, said, according to the evidence, it was very clear that the motor-car was travelling beyond the legalised speed, and the fine imposed would be £2 2s. and costs. Defendant gave notice of appeal.

At Reigate, Albert Arthur Jordon, of London, was summoned for furiously driving a motor-car. Defendant did not appear. Inspector Pullen stated that on October 27th the defendant was driving a motor-car at Merstham in the direction of Brighton. He covered a measured distance of 176 yards in 16 sec., which worked out at 23 miles an hour. The Bench wished to know how the timing was carried out. The inspector replied that he stood at one end of the measured space, and a constable at the other. When the car passed him the constable signalled to witness, who then took the time with a stop watch. Fined £2 and costs.

At the same court, Henry Ward, of South Norwood, was said to have been travelling at twenty miles an hour. Police-sergeant Southcott said he stood at the beginning of the measured distance, and with a newspaper signalled to Inspector Pullen when the defendant's car crossed the beginning of the measured distance. This was at a different part of the road, and was on a hill near Merstham. A representative of the defendant pleaded guilty, and the defendant was fined £2 and costs.

At Eastbourne, James Davis, of Terminus Road, was summoned for furiously driving a motor-car in Latimer Road and Eshton Road, on October 23rd. Mr. Lawson Lewis defended. Detective Sergeant Ransom stated that at 4.30 in the afternoon of October 23rd he saw defendant driving a motor-car down Latimer Road. He turned the corner very sharply into Eshton Road, scattering some children who were in the road in all directions. The car was going quite twelve miles an hour. Cross-examined by Mr. Lewis: Defendant did not blow the horn of the car until he had scattered the children. In witness's opinion, it was a miracle some of them were not run over. Other witnesses having been heard, defendant stated that the car was travelling at that time about seven or eight miles an hour. There was scarcely any traffic about, and he blew the horn before turning the corner from Latimer Road into Eshton Road. He always turned corners slowly. If he did otherwise the tires of the motor-car would come off. Mr. Gustave Naussier, a visitor to Eastbourne, said he also was in the car on October 23rd. While passing through the town the car travelled at the same pace as an ordinary hansom cab in London. Mr. Davis blew the horn to such an extent as to amount to a great nuisance, and he turned the corners as carefully as any man could do. The pace throughout the journey was nine miles an hour at the outside. Mr. Lawson Lewis, addressing the Bench for the defence, said the case was one of opinion against sworn testimony. The Bench retired to consult, and on returning the Mayor said: We are unanimously of opinion that the pace this car turned round the corner was neither reasonable nor proper, and that it was to the common danger of the passengers. We shall impose a fine of £5 and costs.

At Romford, Mr. William Astell, of Twickenham, was summoned for driving a motor-car at a greater speed than twelve miles an hour, at Romford, on October 8th. P.C. Brown, of Brentwood, said that at 7.48 p.m. on Tuesday, October 8th, he was on duty near Brentwood Post-office, when he saw a motor-car proceeding in the direction of Romford "at a most furious pace." He called to the driver to ease up, but he was going so fast that witness expected he could not hear. Witness went to Brentwood Police Station and telephoned to Romford for the car to be stopped. Superintendent Creasy said P.C. Brown's telephone message was received at 7.50 p.m. He sent instructions for P.C. Putman to stop the car at the Golden Lion corner and take the name and address of the driver. Witness went towards the Golden Lion Hotel and passed Romford Post-office at 8.5 p.m. He reached the corner just as the motor-car was stopped. Defendant was the driver. The distance travelled by the car from the place where P.C. Brown saw it to the place where it was stopped was just over six miles. Defendant gave evidence, and said he brought the car from Chelmsford for a friend. They lit up between Chelmsford

and Brentwood, and did not stop again until they reached Romford. He did not see P.C. Brown, and he absolutely denied that he travelled through Brentwood at a furious pace. He was prepared to swear that P.C. Putman told him he had come from Brentwood in twenty minutes. It was absolutely impossible for the car to travel the distance in the time. He was prepared to swear that he did not travel more than twelve miles an hour. The Chairman: The Court are fully satisfied. You will be fined £1 and 19s. 10d. costs. We think it is very desirable that the police should stop motor-cars when they are going at extreme speed.

WHEN IS A MOTOR-CAR NOT A MOTOR-CAR?

This conundrum was put to the Justices sitting at Dewsbury, one day last week, and in a roundabout sort of way was "given up." There was a case, of course—that of the Police v. Fitton's Brick and Tile Company, Limited, the defendants being charged under the Locomotive Act of 1896 with using a light locomotive, to wit, a motor-car, which, when on the highway at Thornhill on the 15th October, emitted dense black smoke from its chimney. Under that Act, said Mr. Wardell, from the County Council Office, there must be no smoke or visible vapour, and a breach of the measure rendered an offender liable to a penalty of £10. He stated that he should prove the offence, and then Mr. Nicholson, who was for the defendants, intervened, and said no offence had been committed under the Act in question, and that, if there had been an offence, it was under the Locomotives Act of 1878. Mr. Wardell said the owners of the car had clearly committed an offence under the first named Act.—Mr. Nicholson denied that, and remarked that the vehicle was a locomotive. The Bench, under the advice of their Clerk, dismissed the summons.

DAMAGES.

In the Sheriff Court at Forfar Mrs. Ann Cather Mitchell, or Lumsden, sued Alexander Ross French, dentist, Forfar, for £75 on behalf of herself and £25 for her child in respect of personal injuries caused by being knocked down by a motor-car driven by the defender on July 13th, 1900. The pursuer contended that the car was driven in a negligent manner. Sheriff Substitute B. P. Lee found that the defender was not at fault, and absolved him, but without expenses. On appeal Sheriff Johnston recalled, and gave decree for £20 to the pursuer and £10 to the child, with expenses. The Second Division, on appeal, affirmed the judgment of the Sheriff-Principal.

A PARTNERSHIP DISPUTE.

In the Durham Court of Chancery, the case of Metcalfe v. Duncan, a claim by Alfred Michael Metcalfe, of Sunderland, for a sale of partnership property, the defendant being Sydney Duncan, also of Sunderland, was heard. Mr. Gawan Taylor, in making the petition, said the plaintiff and defendant were lately partners in a company known as the Northern Motor-car Company, and the action was brought to obtain an account of the sale of the partnership property. The partnership was dissolved in June, 1900, and the only asset was a Daimler motor-car, which was in the possession of Mr. Simpson, coachbuilder, Sunderland. The plaintiff took legal advice, and the result was the issue of a writ on August 13th, 1901. The Registrar in Chambers made an order for accounts, and an inquiry as to profits, but counsel was instructed that the registrar had no power to order a sale. He (counsel) was perfectly willing that the costs of both parties should be taxed and paid. Mr. Mundahl, for the defendant, said the latter was willing that the motor-car should be sold, and he had used every effort to dispose of it by advertising. They were willing to pay the incidental expenses, but the plaintiff had taken legal advice, and incurred legal expense which was not necessary. Defendant was not willing to pay the costs of the plaintiff's private solicitor. His Honour, in his judgment, said he saw no reason to depart from the usual course, which was to make the usual order of winding-up, for the sale of the assets, and for the paying of costs, taxed by registrar in Chambers. The amount which then remained must be divided between the parties. An order was made accordingly.

ROAD MENDING AND MOTOR-CARS.

At the Bullingdon Petty Sessions, James Dew, of Reading, was summoned for driving a motor-car on the footpath at Culham on October 11th. Defendant did not appear. Mr. Bromley Challoner prosecuted for the Culham Rural District Council, and said that the defendant drove along the road from Culham Station to Abingdon, and when he came to the place where the road was being mended went on the footpath. Although the road was not sufficiently comfortable for the defendant to pass over it he could not be allowed to get out of the road and drive on the footpath for 150 yards. An engine driver employed by the Oxford Steam Ploughing Company, named Bennett, said he saw the defendant come along the road with a motor-car. Defendant asked him to go back and roll the stones down for the motor-car. He said he could not as he would waste too much time. Defendant then took the car out of the road and drove along the footpath. When defendant returned he again went along the footpath. Mr. Tompkins, District Surveyor to the Council, said he saw defendant drive a four-wheel car on the footpath for 150 yards. He got on to the footpath 100 yards before he came to the stones. The stones did not obstruct the road to other people who went along it. Fined £2, the full penalty, and costs.

NO LIGHT.

At Westminster Police Court, George Edgley was summoned by the police for failing to comply with the orders made by the Local Government Board with respect to lights on a motor-car. Police-sergeant Hawley, deposed that at five minutes to ten on the night of the 2nd ult. Mr. Edgley was driving a light locomotive without a rear red light at Broad Sanctuary, Westminster. A solicitor for the defendant pleaded guilty to the offence, and Mr. Sheil imposed a fine of 40s. and costs.

THE EXHIBITION QUESTION.

THE Secretary of the Automobile Club asks us to publish the following:—

"In the advertisement columns will be found an important announcement by the Committee of the Automobile Club on the Exhibition question. It will be recollected that on June 11th representatives of all the manufacturers of and agents for motor-vehicles in this country were asked to meet at the Automobile Club for the specific purpose of deciding whether there should be more than one Automobile Exhibition in London per year, and, if so, which Exhibition should be the only one to be recognised by the trade. A decision was come to, *nemine contradicente*, in favour of one exhibition only, and that the Automobile Club's Exhibition at the Agricultural Hall, and the Automobile Club was empowered to refuse space at that Exhibition to those who acted disloyally to the trade in this respect.

"It has been pointed out that this arrangement might act unfairly on British manufacturers, as foreign firms might exhibit at a Crystal Palace exhibition, and their agents here might exhibit at the Agricultural Hall Exhibition, while the British manufacturers could exhibit only at the latter. It will be seen by the announcement of the Club Committee that this is to be prevented. The announcement amounts to this. There is a manufacturer in France called (say) 'Paris and Co.' He appoints in England agents called (say) 'London and Co.' They again appoint agents in the provinces (for the sale of 'Paris' cars) called 'Manchester and Co.' Then (a) If Paris and Co. exhibit at the Crystal Palace, London and Co. cannot exhibit at the Agricultural Hall. (b) If 'Paris and Co.' permit anyone to exhibit 'Paris' cars under any name at the Crystal Palace, London and Co. cannot exhibit at the Agricultural Hall. (c) If Manchester and Co. show 'Paris' cars at the Crystal Palace, or if London and Co. allow 'Paris' cars to be shown under any name at the Crystal Palace, London and Co. cannot exhibit at the Agricultural Hall.

"The reservation is, however, rightly made that if London and Co. can prove that the display of 'Paris' cars at the Crystal Palace was carried out against their wish, that they protested against it and took such steps as they were able to prevent it, then the Club Committee may allot space to London and Co. for the exhibit of 'Paris' cars at the Agricultural Hall. The decision of the Club Committee is clearly in furtherance of the decision which the trade came to and asked the Club to carry out. Promoters of other exhibitions must not grumble at the Club, but must recollect that the Club is acting at the request of the trade."

A NON-STOPPING CASE.

At Derby Police Court Frederick Turner was summoned for failing to stop his motor-car when requested to do so. The Chief Constable said this was the first case of the kind brought before the Bench. Mr. Salmond, of Blomfield, Breadsall, said the car belonged to him. The defendant was a most careful driver, and complained that persons sometimes put up their hands unnecessarily. The case was not pressed, and defendant was fined 2s. 6d. and costs.

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COMMENTS.



WHEN we speak of "the Club" every motorist knows we refer to the institution in Whitehall Court, which held its annual dinner last week at the Hotel Metropole. As will be seen from the report on another page, the event was a repetition of former successes. With the Earl of Onslow, Sir Francis Jeune, the Rt. Hon. Henry Chaplin, M.P. (the author of the Light Locomotives on Highways Act of 1896), the Hon. J. Scott Montagu, M.P., and other public men as speakers, the after-dinner oratory was naturally of a high order; while the importance of the speech made by Mr. Chaplin gave the occasion something of the glamour of a historical event in the annals of the Automobile Club. Mr. Chaplin recognises that the regulations framed in 1896, when fifteen miles an hour was a high speed for motor-vehicles, are antiquated hindrances to the industry now that machines have been constructed capable of speeding along at sixty miles an hour. We do not advocate—nor does any motorist—that the highways should be made the scenes for the display of such powers; but we do ask that in place of the twelve-mile an hour restriction there should be a reasonable allowance where danger to the public is clearly impossible. All the speeches at the Club dinner emphasised that view, and also reiterated the advice to motorists to respect the feeling and prejudices of those whose nerves have not proved sufficiently strong to regard an automobile with indifference.

The Southsea Run.

SATURDAY'S run to Southsea was a veritable triumph for the motor-car. As the vehicles wended their way through the dense London fog they demonstrated their utility in a remarkable degree. While drivers of horse-drawn vehicles timidly reined in their steeds, those at the steering wheels of the motor-cars went boldly along, and finally emerged—just before reaching Staines—into a clear atmosphere that was quite a relief. In cold and heat, in clear and foggy weather the motor-car has proved itself a vehicle far exceeding the horse for reliability and certainty of temper. All accounts agree that the run to Southsea was even more successful than that of last year; the few stoppages on the way were mainly for minor adjustments, and absolute breakdowns were almost reduced to a minimum. In such a foggy morning as that of Saturday, any other gathering but that of automobilists would have been impossible. As it was, everyone felt confident of getting away from an unpleasant Metropolis, and the run—which the public regarded as impossible under the circumstances—proved popular as affording some sort of escape from the fog. The only unpleasant incidents of the day were the three patches of newly-laid stones over which the cars had to go before entering Winchester. "An enemy hath done this," remarked one of the travellers—and it certainly had that appearance. But we are glad to be able to say that the Surveyor of the district regretted the circumstance, which would not have occurred but for the fact that a steam roller had broken down; hence the delay in rolling the roads. This explanation may afford some sort of consolation to those whose tires were punctured in consequence.

Motorists at Worthing.

WORTHING was full of motor-cars on Sunday last. At the invitation of Mr. G. H. Warne, a number of members of the Automobile Club extended their Southsea run to Worthing, where they were entertained to luncheon at Mr. Warne's private hotel on the sea front. A better day for the visit could scarcely have been desired at this time of the year, and the fact that the town also possesses in Mr. Warne's establishment a first-class hotel, replete with every accommodation both for the storage and repair of motor-cars, will no doubt do much to popularise Worthing with automobilists. A large number of people were gathered together on the parade about noon in anticipation of the arrival of the cars, but although a few put in an appearance soon after twelve, it was not until after one o'clock that they began to arrive in any number. Altogether about forty vehicles were stored in the new garage and other outbuildings attached to the hotel, and as the invitations issued to the members of the Club also included any friends who happened to be making the tour with them, the actual number who sat down to luncheon during the afternoon was not far short of 150.

Sunday Trains.

DECIDING to return to Winchester on the Sunday following the run, to have a look at the ancient city, two of the venturesome motorists bade farewell to their drivers on the Saturday. In their hotel at midnight, they pored over time-tables to discover that, once in Winchester, there they would remain till late in the evening. There were no trains at all to Bishops Waltham, and a visit to Chichester or Arundel meant imprisonment in either town till nightfall. So they trained to Shoreham, and walked six miles to Brighton, passing on the way many privately-owned motor-cars going to Worthing, and also four of the public-service vehicles successfully plying along the front. At Hove the 40 h.p. Panhard recently owned by Mr. C. Jarrott was discovered suffering from ignition troubles. Once in Brighton it was easy to get to town. But the warning has been sufficient. When on motoring trips you decide to return on a Sunday by train, always look up time-tables before dismissing cars.

The Manchester Automobile Club.

IN celebration of the fifth anniversary of the date on which the Locomotives on Highways Act came into operation, the members of the Manchester Automobile Club held a dinner on Thursday last week, when an interesting speech was delivered by the Chairman, Mr. W. E. Rowcliffe. This gentleman is acting on the "Special Legislation Committee" of the A.C.G.B.I., formed to consider what steps should be taken to protect motorists from unnecessary restrictions. While not desiring to disclose the suggestions that had already been made in that matter, he remarked that it was safe to say it was the special desire of the Club, whilst seeking to protect motorists from unnecessary restrictions, not to oppose such restrictions on the use of motor vehicles as may be necessary to prevent dangerous driving, and it was indispensable that any proposals submitted should not only deal with the subject from the point of view of the motorist, but include such provisions as from the experience of members appeared to be necessary for the pro-

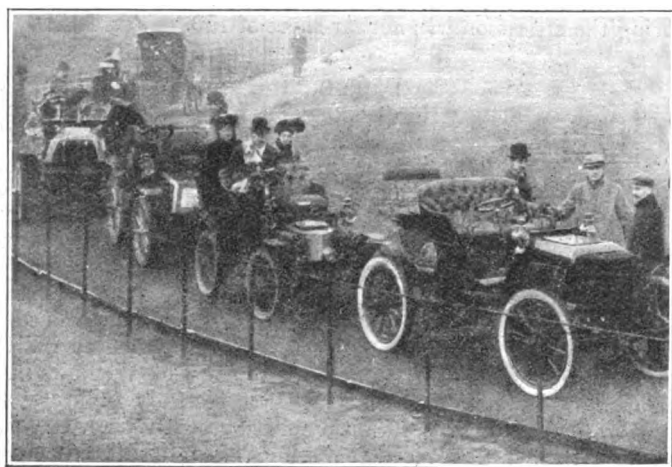
tection of the public. It is hoped in the near future that the Manchester Club will acquire suitable premises with the necessary accommodation for the storage of cars, where the members, who now number nearly one hundred, can hold social gatherings.

A Slight Misconception.

THE announcement in one of Saturday's papers, with regard to the preparations for the anniversary run, that, "by the kindness of the Countess of Ayr, the roads had been specially rolled for the occasion," surprised a good many readers, some of whom, if automobilists, and uncritical, may have been inclined to act as the Highland traveller to General Wade, while others, finding the lady in question unknown to *Debrett*, must have been still more mystified. The drivers on this occasion may be disappointed to learn that they are not after all the subjects of condescending sympathy from the Peerage, that the phantom Countess exists only in the brain of a confused reporter, and that their thanks are after all due to that useful, if not so picturesque, personage, the *county surveyor*!

A Good Start.

THE inaugural ascent of the newly-formed Aero Club took place on Friday afternoon last week at the Stamford Bridge Athletic Grounds, where Mr. Frank Butler, the originator of the Club. Miss Vera Butler, and Mr. Stanley Spencer, of the firm of aeronauts, ascended in a balloon, named the City of York, of 40,000ft. capacity. The Hon. C. S. Rolls was to have been one of the party, but at the last moment it was found impossible to accommodate him in the balloon, as there had been considerable condensation in the gas owing to the cold



MOTORISTS AT THE BALLOON ASCENT.

Photo by]

Argent Archer

weather. A great height was attained, and a good descent made at Watlington, near Maidstone, at half-past three o'clock, after an excellent voyage, though the cold at high altitudes was severe. From the large number of friends, mostly automobilists, who witnessed the departure it is evident that interest in aerial navigation is keen. The winter months are not altogether favourable for such excursions, but with the return of warmer weather there is every indication that the new Club will enter a stage of considerable activity.

The Scottish Automobile Club.

THE Western section of the Scottish Automobile Club, formed less than six months ago, had a run on Saturday last from Glasgow to Luss. The run was arranged to celebrate the fifth anniversary of the coming into operation of the "Light Locomotives and Highways Act, 1896," and was the first organised run of the section. Despite frost and fog, twenty-one cars, carrying about seventy passengers, were on their way to Luss by two o'clock. Travelling *via* Clydebank, Dumbarton,

Bonhill, and Alexandria, the automobilists found the roads in good condition, and the weather outside of Glasgow ideal. The speed of the cars was kept well within the limit, and there was no reckless driving. Mr. H. M. Napier, a member of the Committee, entertained the Club in the hotel at Luss. Speaking on behalf of the Committee, Mr. Nisbet expressed his gratification at the large attendance of members and friends. The Club, he said, had a lot of uphill work before it. Much prejudice had to be lived down, and many laws inimical to automobilists required alteration. Automobilists were indebted to the Hon. Secretary, Mr. R. J. Smith, for services rendered to the Club and the movement generally, and he congratulated that gentleman on the recognition to be conferred on him by the Automobile Club of Great Britain and Ireland for his work in connection with the Glasgow trials. After a vote of thanks to Mr. Napier had been given and a telegram of greeting despatched to the A.C.G.B.I. at Southsea, the cars moved homewards. A feature of the turn-out was the large preponderance of Glasgow-built cars, these consisting of Arrol-Johnstons, Argylls and Albions, there being no less than seven of the latter. The procession through the city at a very busy hour caused much attention and favourable comment.

Yorkshire M.P.'s.

MOTORISTS must keep a watchful eye on some of the members of Parliament representing Yorkshire constituencies. Recently the Yorkshire Union of Agricultural Clubs and Chambers of Agriculture adopted a resolution with regard to the driving of motor-cars, which was one to which no practical motorist would assent. This was forwarded to all the Yorkshire M.P.'s, and its receipt has been acknowledged by Messrs. Grant Lawson, C. H. Wilson, Wilson-Todd, and J. C. Rickett. Mr. Luke White, M.P., was not content with an acknowledgment of the resolution, but also assured the Union that he would do all he could to urge the Government to act in the matter, as he was in thorough sympathy with the views expressed. Mr. J. G. Butcher, who sits for York, also wrote, and declared his belief in the necessity of regulating the driving of motor-cars to avoid a public danger. Certainly some of the many motorists in the county of broad acres should take these gentlemen in hand—or on a car.

Caution Boards Wanted.

THE Lancashire County Council has adopted resolutions in favour of numbering motor-cars, licensing drivers, and the fixing of caution boards at dangerous places on the roads. To the two latter points little disagreement need be expressed, but all three proposals are being submitted by the County Councils Association to the various Councils throughout the country, and their views will be considered at a meeting of the association to be held on the 27th inst. The Bucks County Council has had a long discussion on the subject, and ultimately the matter was referred to a special committee of the Council to report upon. There seemed to be unanimity with regard to the fixing of caution boards, but considerable diversity of view arose on the suggestion as to numbering motor-cars, a matter which, in view of the activity and ingenuity of the police, is of comparatively minor importance, and one that the Councils might well leave alone. Judging by the number of summonses recorded every week the police have quite enough cases to deal with without giving further opportunity for the exercise of their wonderfully vivid powers of imagination.

The Price of Petrol.

BOTH Mr. W. M. Letts, of the Locomobile Co., and the Anglo-American Oil Company, are to be congratulated on the decision of the latter to reduce the price of petrol in the London district 3d. per gallon. Mr. Letts has been in communication with the company on the subject for some time, and has apparently been able to convince them that this is a wise course to adopt. Anyhow, users of petrol will read the announcement with pleasure and owners of cars living in the North and

Midlands will probably be encouraged by some reduction in the rates now charged to them. But the cost of transport will militate against any such substantial reduction as has just been made in the Metropolitan area.

Beware of Frost.

QUITE a number of motor-quadracycle owners have during the past season had their engines converted from air to water-cooled. To them, and, in fact, to all motorists who have water-cooled motors, we would recommend the draining off of the water from the tanks, pipes, and jackets at this time of the year immediately on bringing home their cars or cycles after a run. We hear that several motorists have had the annoying experience of burst heads and jackets as a result of the freezing of the water during the severe touch of frost last Saturday and Sunday. In one town alone, about twenty miles from London, we know of two water-cooled quads. with burst heads and one car with a cracked cylinder jacket, due to this cause alone.

Why not Reprisal?

WRITING to a contemporary a Farnham correspondent says: "During a round of twenty miles in this district a few days ago I passed eleven carts and horses unattended, and not even tied up. Some were frightened, some were not; but why, in any case, should their owners be allowed by the police to break the law with impunity?" He may well ask why such a flagrant and dangerous breach of the law is so constantly overlooked by the police and other sticklers for the letter of the law, when a motorist is concerned. A well-organised crusade against this particular evil, undertaken by a few public spirited automobilists in Surrey and other places, might have the salutary effect of forcing upon some dull intellects the advantages of acting up to a time-honoured maxim, which says "live and let live."

Wasted Police Energy.

OF a somewhat similar nature is the complaint of an Ashford correspondent. "I certainly think," he writes, "that after the warning to motorists 'not to go to Ashford,' it is high time the 'powers that be' ceased from spending their time in hiding behind hedgerows and attended to their duties in the town; stopping some of the nuisances such as hoop-rolling on the pavement and footballing in the streets. This would be appreciated far better than their efforts to drive a growing industry from the district." Ratepayers generally are likely to endorse such a view of police duty. If there is really no more useful employment for the men in blue than loafing about in country roads in gangs on the off chance of catching an occasional motorist, it is certainly time that a reduction of the police vote, on the ground of economy, be moved in many quarters.

Welsh Approval.

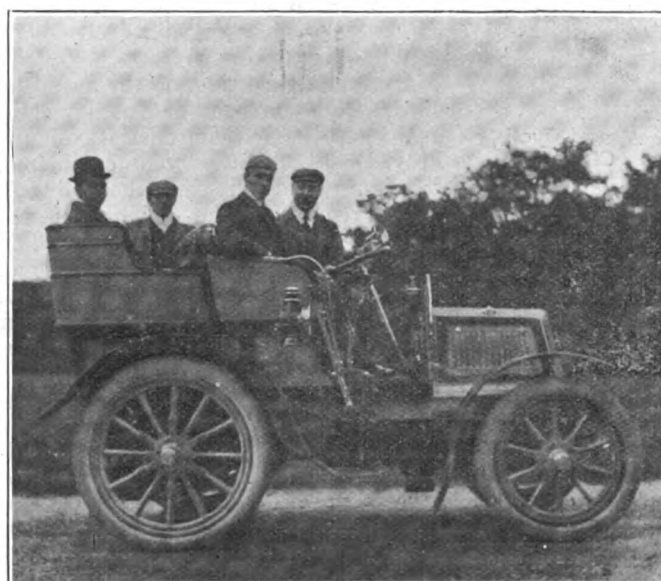
ALDERMAN T. WINDSOR JACOBS, J.P., is an influential member of the town council of Cardiff and has watched the progress of the automobile movement with studious care. In the columns of a leading Welsh journal he has been descanting at length on the merits of the motor-car for delivery purposes, for pleasure trips, and for the requirements of the general contractor. Some time ago the Health Committee of Cardiff appointed a sub-committee to inquire into the suitability of the motor-car for use by the local health department; but came to the conclusion that there was not a satisfactory vehicle on the market. But Alderman Jacobs has since then watched the progress of the experiments in Westminster and the Strand, and recognises the improvements that have been made, so that it is not too much to hope that Cardiff will soon be among the enterprising towns collecting dust and distributing water by means of mechanically propelled vehicles. Perhaps that time would be hastened if the motor-vehicles could be made a little more silent than now.

Woman and the Motor-Car.

AN interesting article on "Woman and the Motor-car," from the pen of Mr. C. L. Freeston, appears in the *Lady's Magazine*, and it is illustrated with some effective photographs of Mrs. Kennard, Mrs. Weguelin, Mrs. Edge, Mrs. Copland, Miss Weblyn, Miss Butler, Miss Bacon, and other lady automobilists. Mrs. Weguelin has driven over 30,000 miles, and we are informed that Mrs. Copland, after four lessons of about an hour each, was able to change speed without "scraping the gear." Lady Wolverton, Lady Stanley, Lady Cecil Montagu, Lady Jeune, and other members of the aristocracy are named as enthusiastic motorists, and altogether the article furnishes ample evidence to prove to general readers the great strides that motoring is making.

A Representative Cargo.

It is but rarely that one sees grouped together in a motor-carriage a company of men so well known in widely different spheres of life as that depicted in the accompanying illustration. At the wheel, and representing the automobile world, is Mr. E. M. C. Instone, of the English and French Automobile Clubs, while seated beside him is Mr. J. B. Joel, whose name is a power in the world of finance and South African enterprise. The stage is represented by Mr. Lewis Waller—one is almost apt to write



Don Caesar de Bazan—also a member of the Automobile Club, and in the person of Mr. S. Loates, the famous jockey, sport has a worthy representative. The photograph was taken by the fifth member of the party, Mr. Louis Edwards, whose military pictures and sketches are so much appreciated. The car is a 12 h.p. M.M.C.

The Speed of Motor-Cars.

At a meeting of the Croft Rural Council, Colonel Wilson, C.B., moved:—"That motor-cars in future be registered and carry a visible number; also that the driver hold a certificate of competency; and that a copy of the motion be sent to the Local Government Board." He said it was probably the wish of the Council that some notice should be taken of the speed at which motor-cars were run. When President of the Local Government Board, Mr. Chaplin made certain regulations, but in a speech made the other evening he admitted that he was wrong in limiting the speed at which they should be driven in a clear road, as they could be pulled up instantly. It was doubtful whether it was possible to limit the speed. He, therefore, thought

they ought to take a broad view of the matter, and insist on registration, and that each driver was competent. After some discussion the motion was carried.

The King.

THE King, who has naturally been much occupied with weighty affairs of State since his return South, has taken to his motor-car once more. On Saturday the last stage of the Royal journey from Windsor to Sandringham was undertaken in an automobile. A special train left London at a few minutes past four. Wolferton Station was reached at 6.25, in a thick fog. His Majesty, accompanied by the Prince of Wales, entered a covered motor-car and proceeded to Sandringham, and thus experienced the same anniversary sensations as his loyal and motoring subjects in the South.

World's Champion.

IN the hearing of a charge against a motorist for furious driving at Highgate, a constable, examined as to how he estimated speed, replied that he had been an athlete and a cyclist, and could run a mile in a minute! Another constable called declared that if that was the maximum speed of his brother blue he could certainly beat him!! The motorist was acquitted on the first charge, but paid heavily on a second, of riding without a light. Yet in many another court the "opinion" of just such an intelligent brace of Bobbies turns the scale of justice against the sworn evidence of an English gentleman.

The Motor-Cycling Club.

A GENERAL meeting of the members of this Club was held on Tuesday evening, when the recommendations of the Provisional Committee were considered. It was resolved to register the Club as a limited company, the liability of the members being restricted to 5s. Afterwards the memorandum and articles of association were approved, and a committee of five gentlemen appointed. Mr. T. Underwood and Mr. G. Tripcony were elected to the offices of secretary and treasurer respectively. The Club is to be of a social character, and the preliminary programme provides for the holding of district runs on Saturdays and Sundays, with occasional general and extended trips, non-stop and hill-climbing trials, and tours at Easter and Whitsuntide, etc. The question of Club headquarters was broached, the general feeling of the twenty or so gentlemen present being that such were particularly desirable to enable members to meet together and have talks, informal or otherwise, on motor-cycling matters. The membership list will comprise four categories—ordinary, country, honorary, and life members. The annual subscription for ordinary and honorary members is a guinea, while for country members, defined as members residing over twenty miles from Charing Cross, it is half-a-guinea. Those motor-cyclists desirous of joining the new Club should communicate with the Secretary, Mr. T. Underwood, 13, Colville Mansions, Talbot Road, Bayswater, W.

About Breakages.

THERE are some people who seem to think that there is no excuse for any part of a motor-car breaking down, and that if breakages occur it is gross carelessness in construction or poor material. It is possible to build a machine—on paper—with all strains and stresses nicely calculated and allowed for which should not prove weak at any point, but which, with "every part as strong as the rest" should run until it falls all to pieces like the deacon's wonderful one-horse chaise. As a matter of fact this is in practice neither possible nor desirable. We have been building carriages for several hundred years, and yet, as every driver knows, they are not free from breakage. The locomotive has had the careful attention of mechanics for nearly a hundred years and though it runs on a steel track and is looked after as carefully as a horse, it frequently breaks down in various parts.

Frames, axles, piston rods, cross-heads, cylinders and other parts fail when least expected, and yet no one claims that they are poorly designed or built. Any machine will wear and sometimes break in spite of every theory to the contrary, and a motor-car is not exempted from this rule.

Danger Boards.

THE proposed erection of danger-boards on certain hills for the special behoof of automobilists is an undertaking which, although desirable in the abstract, requires a large amount of consideration and judgment. Such warnings as already exist, though too scanty in some localities, are somewhat overdone in others, and there are survivals from the early cycling days which are positively misleading; while a short study of the Contour Road Book will show how different are the estimates of dangerous hills in different parts of the same work, hills of 1 in 14 being so stigmatised in the home counties, while in Devon and the Peak district a hill generally has to exceed 1 in 12 to be so marked. Generally speaking, the quality of unexpectedness is the principal source of danger in the case of cyclists. With a motor-car, however, though this is, of course, to some extent also the case, great length in a steep incline is the most to be dreaded, most good brakes being sufficient to cope with the worst gradients unless they are prolonged, while few even of those that may be called by comparison good are capable of long sustained action without firing or showing weakness. After all, a good map or contour, with such hills marked, is, if studied before a run, a better safeguard than danger-boards, which sometimes escape observation when they are most needed.

Motors v. Trams.

THE project, which has been for some time in the air, for an electric tramway between Farnham and Hindhead, has not unnaturally aroused some opposition in the neighbourhood from the artistic interest, though the desire for better means of communication is almost unanimous. Under these circumstances a correspondent of the *Surrey Advertiser* repeats the obvious suggestion that a service of motor-cars would meet all necessities, and greatly conduce to the development of a picturesque and popular locality. In towns, trams may be a necessity, though an objectionable one, but in country districts, which owe their popularity chiefly to the beauties of Nature, it would certainly seem advisable to work motor-cars for all they are worth before admitting the need for costly and disfiguring electric tramways.

MR. C. B. KELLOW, of Melbourne, has just received the first 6½ h.p. Darracq car imported into Australia.

THE Deering Harvester Company, of Chicago, Ill., has lately built an automobile grass mower. It is propelled by a 4 h.p. petrol motor, and is said to have cut twenty-two acres in nine hours, using a five-foot sickle bar. The motor is placed in front of the driver's seat and rests upon a leading third wheel. The cutter bar is at the side, as is usual in machines drawn by horses.

THE Locomobile Company of America have issued a second illustrated pamphlet with the avowed object of demonstrating the ability of the little vehicle, which figures on its pages, to perform striking feats. The ubiquity of the Locomobile is just as striking as the feats which it performs. From one of them General Brabant is seen addressing the Volunteer Defence Force at Cape Town. We have another glimpse of it at the sixty-ninth milestone from Hobart Town, Tasmania; at Land's End, after a run from John o' Groat's; up to the axle in Californian mud; climbing a hill as steep as the slanting roof of a house; and crossing the ice below Niagara. All these and many other feats of a marvellous order, also depicted, the Locomobile appears to glory in.

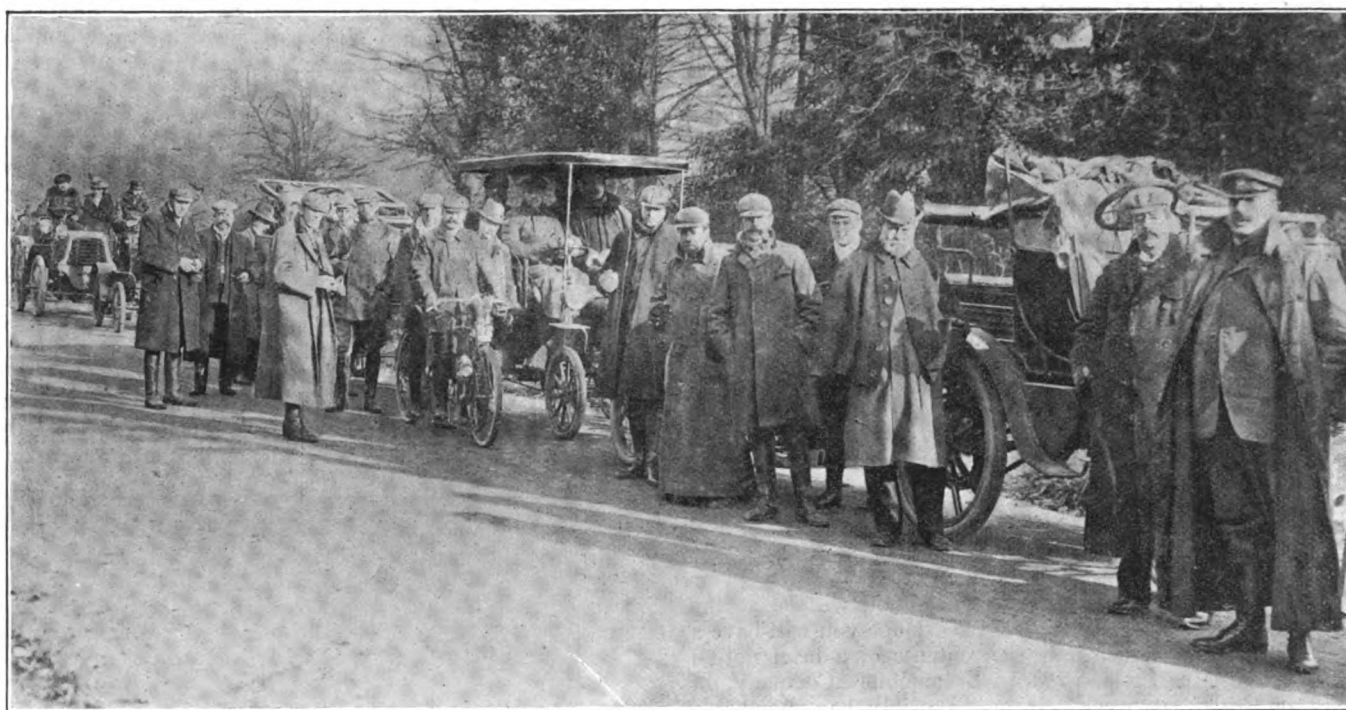
Anniversary Run to Southsea.



THE START.

NEVER was November morn truer to its meteorological traditions than that which marked the fifth anniversary of the legal existence of the motor-car on British highway. Black, impenetrable gloom hung over Whitehall, and a temperature many degrees below freezing point covered the surface of the road with ice. But the genuine automobilist has no more respect for the elements than they have for him, or her. Shortly after midnight, and throughout the early hours of the dawnless day, automobiles of every description converged from all points toward Whitehall Place, for to the vehicle first on the spot would fall the honour of leading the 202 motor-cars and cycles entered for the anniversary run to Southsea. To "Le Limacon,"

ing to the automobile. "Dick" and "Daisy" were fair samples of a homelier type, whilst natural history supplied many more, and others, such as "Daydreams" and "Atalanta," suggested anything afloat, from a house-boat to a battleship. In not one single case did a name suggest the remotest idea of that propensity to law-breaking or intimidation with which certain ill-informed people are wont to associate the automobilist. If anything the gloom deepened as the moment of departure, announced by a general taking of places, arrived. Punctual to the second the "Sluggard," with Mr. C. Johnson, secretary of the A.C.G.B.I. on board, swung round the corner with a warning hoot, and disappeared in the fog of Whitehall. Close in her wake, and before the Horse Guards' clock had finished striking the half-hour after nine, followed a score of cars, each with a full com-



A GROUP OF CARS AT EGHAM HILL.

Photo byj

[Argent Archer.

Mr. S. F. Edge's 9 h.p. Napier, which crawled into Whitehall Place at 1.15 a.m., and drew up at the corner with head-lights glaring into the fog that hid the Horse Guards opposite, fell the coveted honour. By nine o'clock, half an hour before the time of departure, a large number of cars had arrived and taken up their position, and still the hoot of the horn and the now familiar sound of an invisible car told of yet another and another arrival, feeling its way like a fog-bound ship to the far end of the ever-lengthening line in which every type of automobile—petrol, steam and electric—was to be found. Never has such a variety of cars been seen together before, ranging as they did from a powerful 24 h.p. Mors, down to the modest motor-bicycle. Time was nearly up, and weird fur-clad figures, like bears, stole in and out of the fog, whilst trusty leather-coated mechanics made final adjustments or examined critically the delicate mechanism on which so much depended. Friends and well-wishers moved from car to car, inspecting the names in black letters on white cards with which all were decorated for the day. For many of these the French language was responsible, as it is for much pertain-

plement of smiling fur-clad passengers. Automobilmism begets a serenity that not even the prospect of a ninety-eight mile run through fog and frost can dispel. But that which would, in spite of adverse elements, have proved a really imposing spectacle was somewhat marred. The stream of cars, swinging gracefully round the corner in mechanical precision and perfect order, was broken. Whitehall Place is usually as deserted a thoroughfare as one could find in all London, but on Saturday morning for some unaccountable reason all London traffic seemed to have been diverted that way. Lumbering coal-carts, costermongers' barrows, cabs, in short every type of vehicle except the 'bus, wedged in with, and between, the motor-car. A laudable but ill-timed interest in automobilism, and a desire to accustom the steeds which drew these vehicles to the smell of petrol, may have prompted their drivers to put in an appearance. Whatever the reason, the rounding of the corner into Whitehall, always well filled with traffic, was with the aid of these unwelcome additions to the procession, and the crowd of spectators that thronged the road, rendered a feat of no mean skill. To the credit of the motor-men be it noted that no

accident occurred, and the utmost good temper prevailed. Singly and in groups the cars continued to struggle through for the next half-hour and disappear westward in the fog. About the Automobile Club there lingered for some time a number of cars, the lingering being probably due to the reluctance of their owners to start under such unfavourable atmospheric conditions; or perhaps in some few cases to a little temporary stupidity on



A SNAPSHOT AT EGHAM HILL.

the part of the cars themselves. Out of the number of vehicles entered, 143 bearing the name cards issued by the Automobile Club were timed to have left Whitehall by ten a.m.

ON A "STEAMER."

BY PHANOMEN.

"THE car will be named 'New York,' and will be at the starting point at nine o'clock. Hope you will have a fine time"—such were the contents of a brief note I received from Mr. Letts, of the Locomobile Company of America, on Friday last week. It may possibly be remembered that a year ago my intention of journeying to Southsea by steam car was frustrated very early in the run by the breakage of the driving chain. The desire for a long run on a "steamer" still remaining, I looked forward to better luck this year, and was more than rewarded. My previously-arranged plans provided for an early arrival at Whitehall, so that I might have an opportunity of inspecting the several new cars, such as the James and Brown, Gillet-Forest, and the Cannstatt-Daimler voiturette, which were making their *début* as it were on the anniversary day. But previously-arranged plans were all quickly upset by the thick fog which made itself painfully evident from the time of awakening. A hasty breakfast, a sharp walk to the station, a long wait on the platform, and a slow journey to London ensued. Many times in the course of the latter, I wondered whether I should even reach Whitehall in time to pick out my car ere it started. Frequent glances at my watch gradually dispelled all idea of inspecting new cars, or noting who of the 202 entrants were plucky enough, having regard to the severe meteorological conditions, to face the ordeal of the run—for such it appeared at the time. After several stoppages on the line our engine-driver apparently decided to make Waterloo or die. A sigh of relief went forth as, on leaving the train, I found I had just a quarter of an hour to spare. A few minutes brought me to Whitehall, and after a short search the "New York" was located, and the pleasant discovery made that

the gentleman in charge of the same was Mr. Ginder, probably the smartest steam-car driver in the country. Having found the vehicle which was to convey me to Southsea I decided not to lose sight of it, so whiled away the time of waiting for the start by chatting to one of the many policemen on duty at the time. Space prevents me detailing all that the man in blue had to say about the progress of motor-cars; suffice it to mention that this constable at least was not an anti-motorist, but looked forward to the more general adoption of automobiles, inasmuch as they would not only relieve the crowded London traffic, but tend to make the streets and roads much cleaner than at present. One point that amused me was elicited by reference to the action of the Surrey police against motorists. "Oh," said the constable, "they are only County police, they are not the same as the Metropolitan force!"

All this time cars were coming and going, many with their powerful Bleriot's lighted, the whole forming a scene of animation not likely to be forgotten. Without having any idea of the hour, an indication that it was time to be moving was given by the disappearance in the mist of some of the cars in front of us, so aboard I climbed and made myself as comfortable as possible under the circumstances. Quietly we moved along, and turned into Whitehall between a thick double line of humanity. So dense was the fog that all the public clocks were hidden from view, and the actual time of our start was not noted. Through Great George Street and Birdcage Walk we were soon opposite Buckingham Palace, and here several cars got astray, following a motor-vehicle not participating in the run up Constitution Hill. We, however, were not to be misled, and although the running was very slow we passed safely across Grosvenor Place into Eaton Square, where "Swift," Mr. J. E. Waller's 8½ h.p. Decauville, was seen to be stopped. Across Sloane Square into King's Road we went, and although we were now travelling at a fair speed the drivers of several vehicles, probably cyclists, passed us, regardless of the Club's regulation. On to the foot of Putney Bridge, where we found that the rise had proved a stumbling block to a couple of cars—"Voiture" and "L'Avenir." Once over the bridge a sharp turn to the right was made, and soon we were on Barnes



"VALKYRIE" AT EGHAM HILL. BUSY WITH THE TIRES.

Common, where a scene presented itself of the most wintry and dreary character. On the bridge at Barnes Railway Station an accident had occurred to "Bubble," Mr. Bayldon's Reading steam car, apparently due to a collision between it and a petrol car, whose name we were unable to decipher as we sped by. The rear off-side wheel of the steam car was completely buckled and

broken off, the vehicle lying with the back part of the body on the ground. The accident caused a temporary block, but our car and those in front and behind got safely though slowly by. Ere entering Richmond Park a nasty piece of road was encountered. The park itself, so pleasant in summer, was white with mist and frost, and although the roads were in good condition, it needed careful driving to be able to keep to them. Mr. Ginder was more fortunate than many drivers in knowing the right turning to take for Richmond Gate. Several in front of and behind us went straight ahead, with the result that they found themselves at Kingston instead of at Richmond. Richmond Hill was very carefully negotiated, and so far as vision carried through the fog, I am glad to report that no motorist attempted to pass another car while on this dangerous—having regard to the fact that the road was up at several points—down grade. In summer time we know of no finer view near London than that from Richmond Bridge, but as we crossed it on Saturday all that could be seen was white mist. Over the bridge, the Twickenham road was taken, and the old riverside town gave the motorists a hearty welcome. A

Mr. Percy Richardson, who, on his Daimler, "Valkyrie," was travelling very slowly owing to a punctured tire. The ascent of Egham Hill did not seem to affect "New York" in the slightest, it being made easily without any apparent diminution in speed, and in a few minutes we found ourselves at a halt behind a long *queue* of cars at the control at Egham Hill. Here we had a brief opportunity of inspecting not only some of the cars but also their passengers. And what a curious sight the latter presented! In view of the arctic conditions of the weather everyone—with probably the exception of a certain rider of a motor-bicycle—had wisely made some provision in the way of extra clothing "to keep the cold out." The fog, which had now fortunately been left behind, had, however, left its trace on everyone's face, and what with this and the various get-ups—for, on occasions like Saturday, comfort counts much more than appearance—we doubt if ever a more strange-looking collection of men and women were seen in that neighbourhood. In the interval of waiting for the departure signal, many of the drivers of the cars made little necessary adjustments, while the amateur photographers, like ourselves, did a little

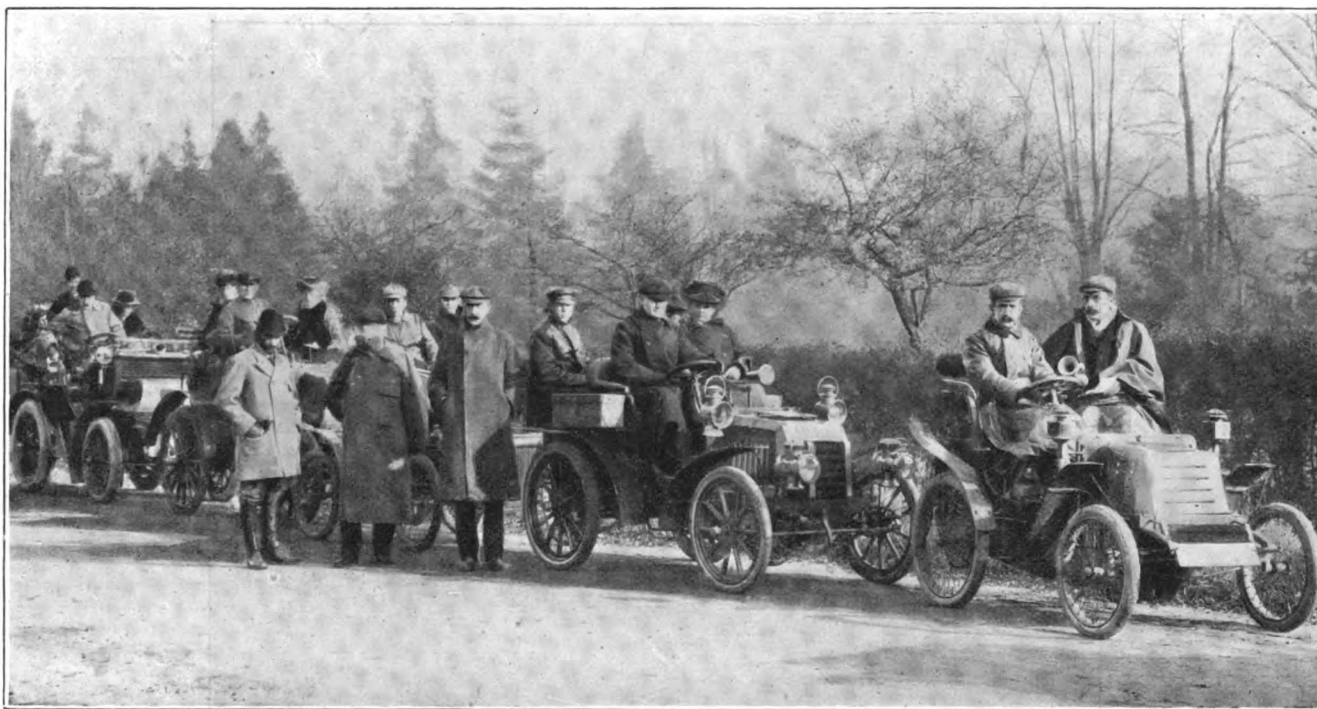


Photo by]

ANOTHER GROUP OF CARS AT EGHAM HILL.

[Argent Archer.

nasty turn had to be negotiated at this point, the task of doing which was not facilitated by the driver of a large Daimler dashing forward and passing several cars. Near Kneller Hall, the military musical academy, we passed Mr. Parsons on the roadside engaged in studying the mechanism of the Holden motor-bicycle he had been riding. After another mile or so the main road to Staines was joined, and with a wider thoroughfare and a slight lifting of the fog, a little faster speed could be safely indulged in. Bedfont, with its attractive church, invisible, however, on this occasion, was soon left behind, and Staines reached. Here a couple of Locomobiles, which had kept us company for some miles, turned into an hotel yard to obtain fresh supplies of water. The "New York," which, by the way, was the identical car which won the gold medal in the Glasgow Reliability Trials, was, however, fitted with extra water carrying capacity, and at Staines we had sufficient water for a further run of from ten to fifteen miles.

As we crossed over the river at Staines one could not help remarking on the change that had come over the scene. At Richmond, we could hardly see ten yards ahead. At Staines there was hardly a trace of fog, and the sun was beginning to chase the frost rapidly away. At Egham we overhauled

snapshotting, only to have a pang of disappointment on seeing later on the poor pictures obtained.

Immediately in front of us were Mr. Leith on his Century tandem, "Cherub," and Mr. Armstrong on his solid-tired 6 h.p. Daimler, "Sundayboy," both vehicles having made the run to the control in good style. Moving on by degrees, we at last found ourselves close by the time-keeper, who notified us that the next stage was to Blackwater level-crossing (12½ miles), and that we must not do the distance in less than a certain time—I forget the exact time allowed for the moment. Away we sped, and soon were travelling past Virginia Water in fine style. Although the roads were in excellent condition the scene bore a somewhat naked aspect, as compared to what it did when last we journeyed that way during the past summer. Passing "Aluminium" and "Friend"—both stopped by the roadside—some spectators called out a warning—"Look out for the police near Bagshot." Naturally our driver kept his eyes open and his hand on the steam control lever ready to pull back the latter instantly should a man in blue become discernible in the distance. Passing "La Dormeuse" and "Egalité"—both stopped near Sunningdale—at a pace less than the legal limit, we were surprised to see some

distance ahead a police-sergeant on the road with both hands uplifted. Feeling sure that no infringement of the law as to speed had taken place on our part Mr. Ginder pulled up at once, only to have his name and address taken for emitting steam. While the policeman who was with him booked the name, the sergeant interested himself in the details of the car, and on giving us permission to proceed wished us a pleasant and safe journey! It was only a few hundred yards to Bagshot, and here we made our first halt, outside of controls, to refill the tanks with water. The official itinerary gives the distance to Bagshot as 30½ miles, so that adding the distance from the Locomobile depôt, where the tanks were first filled, it may be said that "New York" had covered a distance of roundly 35 miles on one charge of water.

Our stay at Bagshot was not a long one, but as cars kept on passing steadily we found ourselves in fresh company on restarting. Nothing of a special character occurred before Blackwater level crossing was reached, although we passed a Century tandem and Mr. Percy's New Orleans "Hotspur" both stopped for some reason or other. Another timekeeper presented himself at the crossing and notified us of the minimum time allowance

teen miles to go to Winchester—and lunch. On this stage several cars were passed, to wit, "Sundayboy," "Muriel," "Romsey," and Secretary Johnson's "Sluggard." So far we had had little, if any, trouble with horses, but one cart horse—in charge of a boy, by the way—was inclined to be a little restive as we approached the village of Kingsworthy. Glancing over the official programme on the way down, we had come across the note drawing attention to the breakdown of a steam roller at Winchester, and to the consequent patches of unrolled metal on the roads some distance before reaching the city. Consequently, there was nothing to do but to make the best of a bad job and tackle the patches with care. Giving a sigh of relief, when they were after much jolting safely negotiated, we soon found ourselves at the Winchester inward control, where our time was recorded as 2—7 p.m., so that we had completed another stage at a fairly good rate. We felt somewhat proud when, arriving at the foot of the new and imposing King Alfred statue in the Broadway, we were informed that we were the first "steamer" to arrive. That we were in the first flight was also ascertained, as only about twenty or twenty-five cars were in front of us. A word of praise may here be



A SISTER CAR TO THE LOCOMOBILE CO.'S "NEW YORK" IN THE ISLAND OF TASMANIA.

for the next stage of 15 miles to Basingstoke. The sun was now shining brightly, and with no sign of fog. A quick run across Hartford Bridge Flats was enjoyed, although a slow down was made when a couple of mounted police were sighted, one on each side of the road. They proved, however, to be friends instead of enemies, and gave us a wave of the hand as if to urge us on. Shortly afterwards we bore down on the "Powerful," the only electric car in the run. The vehicle was running well, and at a good speed, but we soon left it to the rear, as we did also "Pioneer," whose only passenger was the driver; "Patricia" and "Primrose" were seen to be at a standstill near Hook, the latter suffering from tire troubles. Nothing seemed to daunt "New York"; the steam gauge remained remarkably steady, and everything went as merry as a marriage bell. Just 45 minutes after leaving Blackwater we pulled up at control in Basingstoke, so that on this stage of the journey our average for the fifteen miles was—on second thoughts I will leave readers to work it out for themselves! The keen air had given us an appetite, and we looked longingly at the various hotels as we passed through the High Street of Basingstoke. We had, however, still seven-

given to the police of Winchester, for the care and attention they gave to the motorists. Having travelled from Bagshot to Winchester (36½ miles) on one filling of water, a fresh supply was necessary, so we did not stay in the Broadway, but made our way at once to the yard of the Royal Hotel.

After lunch, we ran slowly down the High Street to the Broadway, where a most imposing sight presented itself. Cars had been arriving in rapid succession until fully a hundred, of different types and sizes, were gathered together in one seemingly inextricable mass under the shadow of the huge statue of King Alfred. Winchester has been the scene in times gone by of many an imposing spectacle, but probably none so great as the immense collection of automobiles which rested in the Broadway on Saturday last. Being directed by the police to take up a position towards the end of the *queue*, it seemed as if—with cars in front of us and cars behind us—we were never to make a fresh start. By the kindness of Mr. Johnson a way was made for us, and just as the Town Hall clock recorded 3.30 p.m. we started up the High Street. There was no need to ask the turning—the dense crowd at the corner was sufficient indication. At the outward control we were informed

that the next stage was to Bishops Waltham—a short one of ten miles. For several miles the route was lined with large crowds of school boys, who cheered us on our way. At Twyford we made a momentary stop to relight the fire, which for some reason or other had become extinguished. Off again in a minute, we overhauled "Guiltless," stopped near Fisher's Pond, and "Vixen," also at a stand at Lower Upham. By the time the control at Bishops Waltham was reached the temperature became somewhat cooler, but the run was none the less enjoyable, as with the light of the setting sun on the autumn-tinted leaves of the trees the landscape was of a most picturesque order, and as we passed the fine ruin of the palace, which belonged to the Bishops of Winchester, we made a mental note that this was a place to be specially visited on some future occasion. Near Wickham, "Perfection" was seen to be in a temporary difficulty, and shortly afterwards we had some trouble in passing a horse—again in charge of only a boy. We were now on practically the last free-running stage of the journey. Our car showed no signs of fatigue—on the other hand it looked as if we should reach Cosham in less than the time allotted us, so we reined in and passed slowly through the town of Fareham, enjoying the comments of a large crowd that had gathered there

broken-up road to Southsea the long string of red lights formed an interesting sight. The nearer we got to Portsmouth the denser became the crowd, and it must be admitted that the inhabitants gave the hardy motorists a right royal welcome. At the Town Hall, illuminated by numerous blazing beacons, the Mayor, Major Dupree, welcomed us all in turn as we ran slowly by, and in a few minutes we found ourselves out of light into the darkness of Southsea Common, where I parted company with Mr. Ginder and the faithful "New York." Notwithstanding the unpropitious start, the run was of a most successful character. That great improvement has been made in the construction of motor-cars is evidenced by the relatively few vehicles seen in difficulty along the route, which extended to close on 100 miles.

And ere I close, a word should be said for the car which carried me safely through. The water tanks were only filled twice during the whole journey—at Bagshot and Winchester, and except to relight the fire at Twyford, not a single stop was made *en route*, excepting, of course, at the appointed places. On former anniversaries it has generally been my luck to be among the late arrivals. This year, thanks to the Locomobile, I was one of the early birds.



Photos by]

MORE SNAPSHOTS AT EGHAM HILL.



[Mr. Louis Edwards.

to greet us. Keeping steadily along at a good pace, we heard the toot-toot of a horn, and ere we had time to draw to the side a big red-painted *tonneau* car flew by at a fearful speed. Had I only been able to decipher the name of the car as it sped by us on a bend I should have given it publicity, for the pace, having regard to the winding road, and to the fact that twilight was now upon us, was undoubtedly dangerous, and at least treble that of the legal limit. We were now at Porchester, and skirting the upper reaches of Portsmouth Harbour a lovely view presented itself, the light of the setting sun being reflected in all the colours of the rainbow in the water. From this pleasing scene a turn in the road brought us to another of not so agreeable a nature, a car—the name of which we could not see—lay in a state of collapse on the beach, due, as I ascertained later, to a collision with a horse-drawn vehicle.

A mile or so more, and "New York" pulled up quietly at the control at Cosham at 4.53 p.m., the timekeeper again imparting the satisfactory information that ours was the first steam-car. About forty vehicles preceded us, but as, so far as we were concerned, no racing had been indulged in, but a steady pace up hill and down dale maintained, we were well satisfied with our position. During the brief stop at Cosham lamps were lighted, and as the procession wended its way along the much

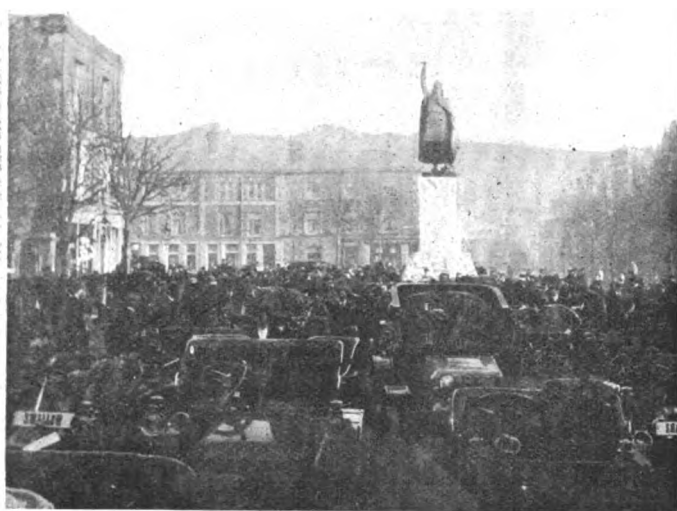
THROUGH FOG TO SUNSHINE.

BY LOLLIVS.

SATURDAY morning dawned sulkily, and a fog—a typical November London fog—hung over the Metropolis, as though ardent members of the Aero Club had disturbed the heavens, bringing clouds of sulphurous fumes to annoy those whose walks have an earthly tread. The postmen were late; the trains were delayed; the enthusiasm of footballers was obscured; and ordinary mortals condemned to travel by rail or tram, or accustomed to journey behind horses, realised that fogs did not exhaust themselves in the last century. No, the fogs of the twentieth century have similar characteristics to those of yore. They are murky, uncomfortable, and distressing to all who travel by ordinary means—or whose business leads them to perambulate the thoroughfares of our great city.

But the motorist is not unnerved by fog. Relying on his trusty engine he dares the darkest hour, and with his lamps shining like two far-reaching eyes he can go where horses are led at snail's pace. Such was demonstrated on Saturday—the occasion of the run of the Automobile Club to Southsea in

celebration of the fifth anniversary of the passing of the Light Locomotives Act, 1896. I have already given my impressions of the morning, and to arrive at the rendezvous in time for the start I left a suburban locality at 7 a.m., reaching Horse Guards' Avenue—a distance of about eight miles—by five minutes past nine. Others who started earlier got there later. It was a scene of "darkened splendour," and merry was the music of the engines, throbbing and panting as though the fog was getting on their chests, and lung troubles were likely to arise. As the minutes went by the fog grew thicker, until, anticipating lighting up time, lamps were lit, and it was possible to see a few cars. Altogether 143 assembled near the club-house, overflowing on to the Embankment and into adjacent streets. It was an interesting gathering, but to the man searching for his vehicle general impressions were easier than a critical examination of the many cars there. I was to ride to Southsea on an "Atom," this being the cognomen of a "Gladiator" which Mrs. Edge was to have driven. But the hill-climbing contests across the Channel had attracted her thither, and Mr. E. A. Perman was to take the helm. The first thing was to find the "Atom." Had it been "Ablaze" or the "Beacon," it would have been easier of discovery in the fog, or had it been located on Parnassus the task would have been fairly comfortable. But an "Atom" in a crowd, and on a foggy morning—well, I came



THE SCENE AT WINCHESTER.

across it accidentally. For, starting at the head of the "long thin line" at which was Mr. Cecil Edge on his Napier, that had stood there since 1.30 a.m., I came upon Mr. Perman a few yards along the Avenue, and on his neat little $6\frac{1}{2}$ h.p. Gladiator we were soon prepared for the arena.

Amid all the lights that peered forward from the vehicles, those of the electric car "Powerful" were the most attractive and penetrating. They were really brilliant, and as the car silently glided by lit up the scene for a moment—and were gone. We quickly got into the running, and were soon along the main road of Chelsea and across Hounslow Heath, the fog insisting on the drivers being on the alert all the while. A car ahead dropped by—apparently to pick up a friend—and we gained a place; but that did not make us any happier, for it was immediately behind "New York," and we could have imagined it was washing day in that city. For the car of that Transatlantic name was a steamer, and the cold atmosphere chilled the vapour till it appeared in fleecy clouds all around us. It was even denser than the fog, and, confining our language to Parliamentary limits, we plodded along to Staines. By that time the fog had lifted; but we had the steam. Of the latter fact there was no denial. So far the affair had been somewhat of a procession, and the halt at Egham Hill was welcomed

as the signal for less restrictive running, and also, in the case of the "Valkyrie," for attending to the tires.

The signal for a re-start having been given, all went merrily forward to Sunningdale. What a contrast to that drenched detachment of weary motorists that returned from Southsea along this very road last year! That dreary ride over Hartford Flats with the rain pelting obliquely in one's face the whole way was an experience never to be forgotten. But this year the clerk of the weather was, if more chilly, at least less tearful—and that was compensation enough. Just beyond Sunningdale a cheery cyclist informed us that there was a measured mile at Bagshot, and that the police were watchful and unfriendly. The news was received, but, seeing we were acting strictly to rules and willing to do anything we were told, what need for information? Anyhow, "Romsey" slowed down and gave the "mighty 'Atom'" a chance of gaining on "Peggy"—a sister car driven by Mr. Manville. Between these two cars there was little to choose—for both are Gladiators, and Gladiators have a persistency of running that does them credit. The next car seen was "Muriel," an $8\frac{1}{2}$ h.p. Decauville, and then "Odear" was punctured. As if to compensate for the excellent running of "Muriel," a similar car named "Xenia" rested awhile and "Patricia" came along in lordly style. And so we went on to Blackwater, doing the distance in the exact time allowed by the Controls.

We soon got across Hartford Bridge Flats after leaving Blackwater, and on the three miles level road towards Hartford Bridge saw a car by the roadside. It was a very exposed position and with a modesty that was hardly becoming, the name of the vehicle was completely hidden by rugs which had possibly been blown thither by the wind. Anyhow, it destroyed identity, and one wondered if "numbering" would have given any better result. Getting beyond the Hartley villages—Hartley Row, once an important coaching centre, and Hartley Wintney, an ecclesiastical place in olden days—Mr. F. R. Simms came along on "Pioneer" and then we had the road to ourselves till just beyond Hook "Hotspur," "Patricia," and "Primrose" were espied, the latter a New Orleans car like the "Sluggard," which the Secretary drove. Mr. Johnson has a sense of the humorous and in thus naming his car was as modest as ever.

Now and again we saw him—once when going down hill—and Mrs. Perman, who was also on the "Atom," will give him credit for celerity of movement. The four miles of road into Basingstoke are of an undulating nature and the scenery was delightful although the land was marshy. Again we came into the Control exactly to the minute; and here the whole population seemed to be prepared for our coming.

So far—save for the rumours at Bagshot—the police had been friendly. Outside one Metropolitan police station a patrol was seen standing holding his horse, and on one of the commons we passed mounted policemen were training their horses. Private individuals brought their horses to know the motor-cars and even dogs seemed to be in training, several large collies being led quite close to the cars and accustomed to regard them as things to admire and not to bark at. A notable feature of the journey was the number of cars whose owners, not taking part in the run, came out to see the vehicles that were doing the pilgrimage. They were to be seen at nearly every important cross road, and between Sunningdale and Basingstoke I counted forty-eight such vehicles. And then I ceased counting.

The road from Basingstoke to Winchester is very hilly in places, and commonplace in others, the few villages passed through being uninteresting. So well were we travelling that only the higher powered cars had a chance of gaining, while we overhauled several of equal power. "Anadyomene," with Mr. Freeston on board, seemed to travel well; and Mr. J. D. Hill's 6 h.p. Panhard waited for no one. "Cumfy," an 18 h.p. Daimler, belonging to Mr. Ernest Owers, went along in fine style, and Mr. Oliver Stanton's "turn out" was a notable one, and never before was a "Chat Noir" with such mudguards. On his little Renault car Mr. F. H. Butler (having returned to earth from somewhere in the sky) did well, and Captain Corke's "Fraternite"

was also in view. Throbbing as though its heart would break, Mr. C. K. Gregson's De Dion voiturette made a good pace, and Mr. E. G. Harrison on "Luigi" made some grand sport, but he had not entered for a non-stop diploma. "Rotifier," "Split Pin" and "Tired Tim" made good running when seen from the "Atom," and "Sundayboy" alternately occupied positions to the front and rear for some distance. In the morning, "Canary" was to be seen, but had long since flown—probably to join the "Jenny Wren," if not the "Robin."

About six miles this side of Winchester we came upon a prime selection of freshly laid stones over which the steam roller had never been. A couple of hundred yards further were another assortment and then nearer the city was a further stretch, well calculated to make incisions into vulnerable tires. Last year a similar set of stones were encountered on entering Winchester from the Portsmouth end, and it was certainly a curious coincidence that the same thing should happen on two distinct occasions.

Fareham. From Wickham there is a sharp rise. Fareham is a pretty little place on the extremity of Portsmouth Harbour, and here a car slipped on to the beach—a very untimely performance. Then through Porchester—long since shorn of its ancient glory—we gained Cosham, the last twenty yards having been done on a flattened tire. Having entered our time, and thus secured a non-stop certificate, we spent a few minutes in re-tiring that back wheel, thus losing our good place in the procession. But we were soon away again, and, dodging over tram-lines through a badly-lighted district, got into Landport and Portsmouth in time to see that the reception had been hearty and spontaneous.

From Southsea to the Drill Hall was a few minutes' run, and there we found about fifty cars before us. Seeing that we were the thirty-sixth to arrive at Winchester and that quite sixty cars left before the "Atom" started in the morning, such a position was excellent. When the run was to Brighton there was plenty of incident in the stoppages and troubles of cars, but nowadays the workmanship is so good and the reliability so well assured

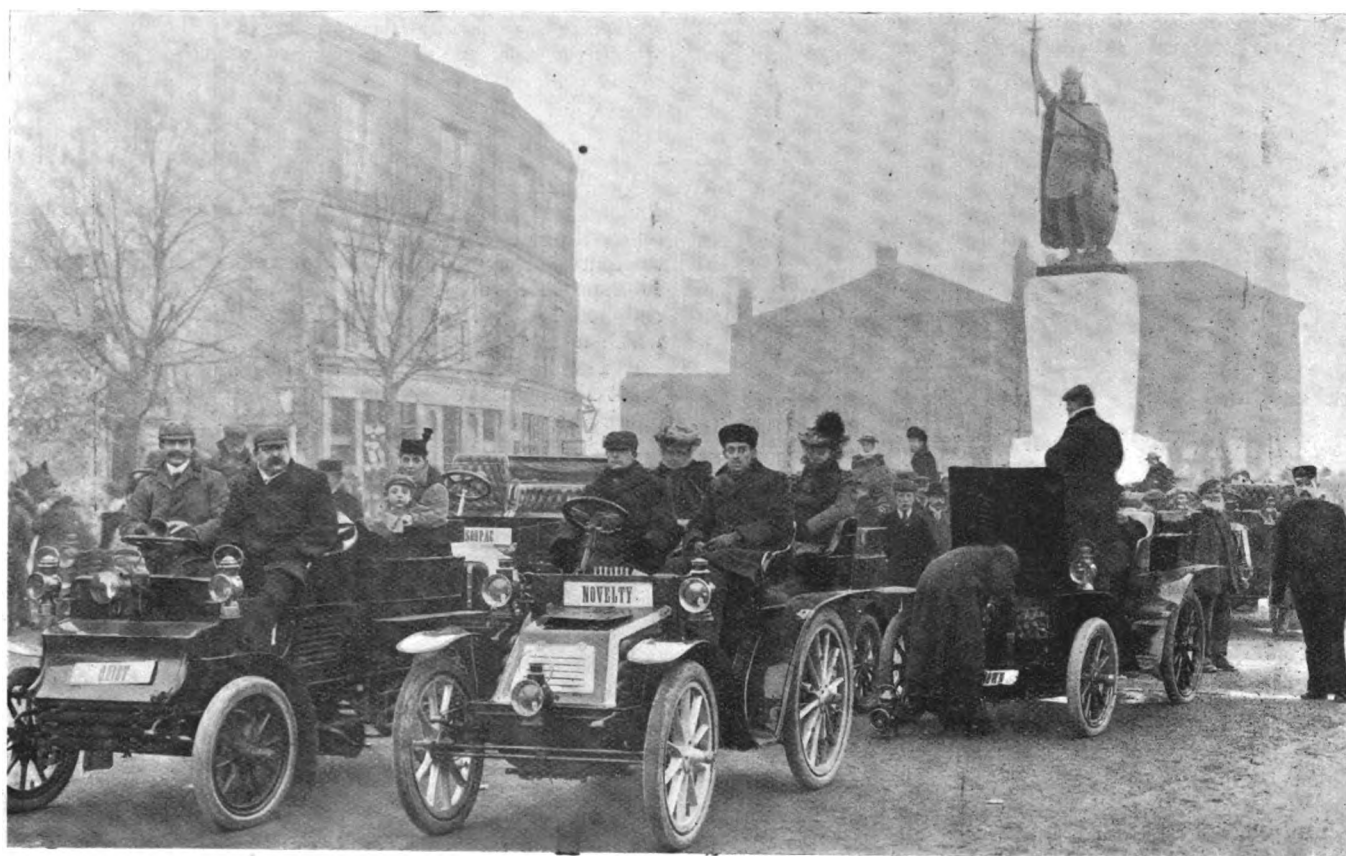


Photo by

UNDER THE SHADOW OF KING ALFRED'S STATUE AT WINCHESTER.

[Argent Archer.]

At Winchester there was an animated scene in front of King Alfred's statue, and from the Town Hall steps the local photographer worked with a will. It was evident that some had made good progress, for going towards the city for luncheon we encountered Earl Russell, the Hon. S. C. Rolle, Mr. C. Friswell, and many others who must have been early birds. The rest gave one a chance of seeing the large proportion of ladies that were participating in the run. Evidently the raiment question is settling itself, for the hideous garments of five years ago have given place to taste and utility. Two ladies appeared particularly graceful in their long cloaks and small fur hats, securely pinned. Both on the car and in walking in Winchester their appearance occasioned favourable comment.

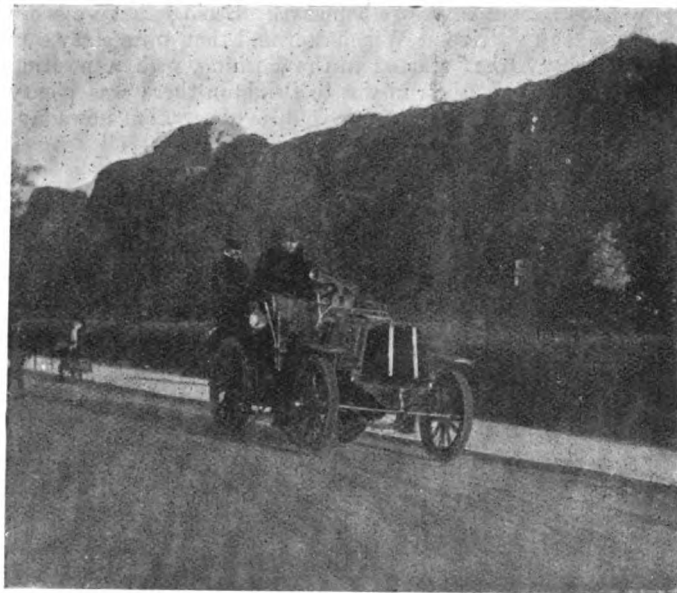
Leaving King Alfred's city we wended our way past a cheering group of young Wykehamists—for they recognised the "Gladiator" as figuring in their most interesting lessons in history—towards Bishop's Waltham, whose ruins we would have photographed, but we were in for a non-stop run—so negatives succumbed to certificates, and we continued our way to

that difficulties are few. That 143 should start from London and 110 be entered at Southsea by 8 p.m. is a tribute to the progress that has been made, and evidence of the greater things to follow.

THE CARS AT COSHAM.

SOUTHSEA, on Saturday, was evidently in anticipation of an unusual spectacle, and the fine and clear, though rather cold, day seemed to warrant the anticipation of a good muster of cars, though expectations would not have been so sanguine had the state of the weather in town that morning been known. As it was, however, expectations were more than realised, and the seemingly endless procession of cars—the largest ever hitherto assembled in this country—produced a profound impression. On our way out to the Cosham Control, at about 4 p.m., the road was covered with pedestrians and cyclists, and some time before the cars were expected a dense

crowd filled the streets of the little village, and, before the first arrival, had surrounded the Control. It was well we were in good time, as, at 4.23, the leading car hove in sight, proving to be the 16 h.p. Milnes, with Mr. Burford up, closely followed by Messrs. Owers (18 h.p. Daimler), Butler (5 h.p. Renault), Pugh (10 h.p. Lanchester), Munn and Gray (4½ h.p. De Dions), and Hooydonk (bicycle). Then came Mr. Kenyon with a 6 h.p. Darracq, who did not wait, being bound for Havant; Messrs. Friswell and Toovey (Peugeots), Fuller (4½ h.p. De Dion), all before 4.33; Messrs. Bramson (12 h.p. Buchet), Instone (12 h.p. M.M.O.), Astell (7 h.p. New Orleans), Critchley (16 h.p. Daimler),



"LA PANNE" AT BISHOPS WALTHAM.

with Mr. Simms (Milnes) following, Gregson (3½ h.p. De Dion), Bartlett (10 h.p. Mors), Cornell (7 h.p. Benz), Rolls (20 h.p. Panhard), and Austin (20 h.p. Wolseley) completed the number which had arrived by 4.40; but now the cars were coming in thick and fast, and the line was lengthening to an extent that gave the two timekeepers quite as much work as they could manage, and Mr. Scott Montagu, who was to lead the procession into Southsea, arriving at that moment we hastened to find a seat in his car, and, duly arrived at the Town Hall, which we heard the first car had reached at the exact minute predicted, creating an excellent impression of the reliability of the modern motor-vehicle! Over sixty of the cars were included in the procession, and the police arrangements, over a route which included nearly two miles of solid crowd, were excellent, as the punctual arrival of the leading cars indicated.

Adjourning to the Drill Hall, where a proportion of the cars were to be housed, we found it also invaded by an interested concourse, rendering the due and orderly disposition of tenants a matter of some difficulty, until, after a liberal concession to public curiosity, the order was given to clear it, after which later arrivals kept dropping in until the large hall was completely packed, and, as might have been anticipated with a total invasion of about 200 cars, nearly every available "garage" in the place was filled. Altogether, as far as I have heard, the effect on local opinion has been all that could be desired, and the benefits which follow the encouragement, instead of the persecution, of the growing sport and industry have been fully realised by "sunny Southsea," a result on which the Automobile Club is to be sincerely congratulated.

AFTER THE RUN.

AFTER the day's run an enjoyable reunion was held at the Portland Hall, Southsea, the Hon. J. Scott Montagu presiding over the dinner. The company was representative of every

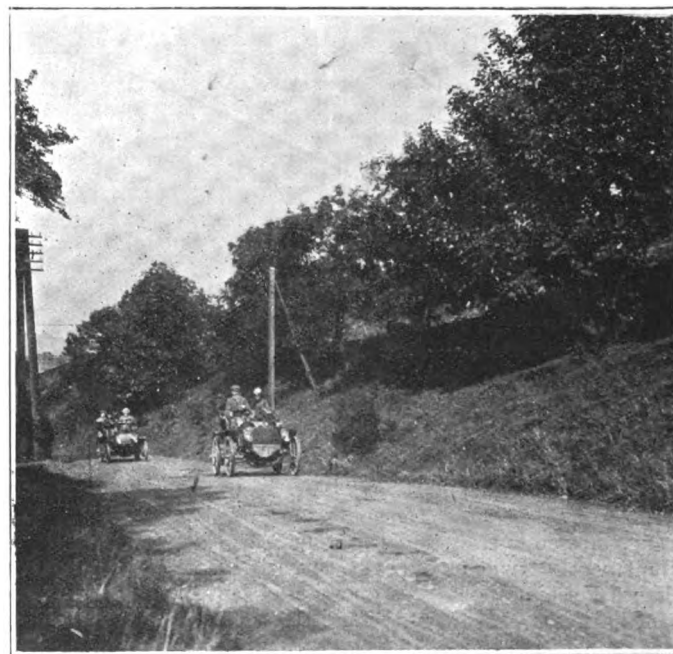
section of automobilism and there was a larger number of ladies than at any previous gathering.

After the repast, the Chairman proposed the toasts of "The King" and "The Queen and the Royal Family," and remarked upon the favour which they had all shown towards automobilism. These healths having been heartily drunk, Mr. Montagu gave "the Mayor and Corporation of Portsmouth," and remarked upon the friendliness always shown to motor-cars by the people of Southsea. It was in pleasant contrast to the action taken in some other boroughs, and it was a great thing to thus get the boroughs and County Councils on their side. The improvement that had taken place in the quality of the driving was as notable as the advance in the cars themselves. Everyone recognised that the twelve-mile limit was absurd, but motorists should show by their every-day conduct on the road that they respected other users of the highways.

Major Dupree, the Mayor of Portsmouth, was well received on rising to respond to the toast. He expressed his belief in the future of the automobile movement, and made reference to the Christian name of a leading automobilist who had been the second to arrive at Portsmouth as indicating something of an explosive nature. And yet, said the Mayor, he did not explode, nor did his motor car. Perceiving that this was a joke a smile stole round the tables. Ere the company had quite recovered Major Dupree proposed the health of the Automobile Club.

To this toast Mr. Roger Wallace responded, and made an interesting announcement to the effect that the Club was about to secure better premises. The members would shortly be asked to approve of one of two schemes—one was for a very large club-house with a small garage, the other was for a garage to which a small club was attached.

The health of the Chairman having been honoured, Mr. Scott Montagu gave some figures with regard to the run. One hundred and forty-three cars had started from Whitehall in the morning; at Egham 148 cars had passed by 1.30 p.m.; at Basingstoke 143 had been reported; 132 had reached Winchester



EN ROUTE.

Photo by

[Mr. T. B. Percy.]

before 4.30 p.m.; 123 had gone through Bishop's Waltham; 122 had been entered at Cosham, and 110 had reached Portsmouth by 8 p.m. Such figures proved the success of the run. He read a telegram from the Secretary of the western branch of the Scottish Automobile Club, which (as we were alone in announcing last week) was holding a similar run, and which

conveyed the greeting from seventy members and friends assembled on Ben Lomond. The Head Constable of Winchester had also wired to the effect that the cars all passed through Winchester without accident. Mr. H. Edmunds then gave the toast of "The Secretary," to whose energy in organisation the Club owed so much. The toast was drunk with great heartiness, but when called upon to respond Mr. Johnson was not to be found. It was the only time during the day that he acted up to the designation of his car, the Sluggard. And then, breaking up into small groups for petrol talk, the company separated in good spirits, and much satisfied with the results of the day's adventure.

the Committee is in possession of records made at intermediate stages.

DISQUALIFIED VEHICLES.

Achilles.	Eva.	Tired Tim.
Bumper.	Falcon.	Tortoise.
Chat Noir.	Miranda.	Valkyrie.
Cumfy.	Pax.	Vishnu.
Diadem.	Shamrock.	Voiture.
Dick.	Swallow.	Wallcreep.

It is possible that further notice may be taken by the Committee of the A.C.G.B.I. of the systematic defiance of speed regulations by some of the cars which were first to arrive at



TWO GROUPS OF CARS AT SOUTHSEA.

Photos by]

[Argent Archer.

RESULTS OF THE RUN.

THE Committee of the A.C.G.B.I. will doubtless be grateful to the representatives of manufacturers and agents of motor-vehicles and to members of the Club who loyally assisted the Committee in its efforts to make the run a popular success by strictly adhering to the speed regulations. It is regrettable that some drivers appeared to have preferred to gain prominence by driving without regard to the speed regulations which were clearly set out in the programme. It would be obviously unfair to those who adhered to the speed regulations that they should be placed at a disadvantage by those who defied the speed regulations, and consequently arrived earlier at the end of stages. Accordingly the under-mentioned vehicles have been disqualified.

The timekeepers at the beginnings and ends of the various stages were not instructed to fill in the time cards, as it was thought probable that drivers would prefer to use the time cards for entering the time at which their vehicles arrived at the beginnings and ends of stages; but at each point there were at least two timekeepers, and both of these made notes of the names of cars and the times of their arrivals or departures. Further,

Southsea. Non-stop certificates have been claimed in respect of the following vehicles:—

CARS FOR WHICH CLAIMS FOR NON-STOP CERTIFICATES ARE MADE (Disqualified vehicles are not included).

Albatross.	Favourite.	Puffer.
Atom.	Firefly.	Redivivus.
Au Revoir.	Freedom.	The Reliable.
Babette.	Luigi.	Renown.
Blackamoor.	Muriel.	Rotifer.
Butterfly.	Ophir.	The Rover.
Buzzer.	Owl.	Sans Souci.
Canary.	La Panne.	Santos.
Chemineau.	Paulus.	Slowcoach.
Cherub.	Parnassus.	Soupac.
Daydreams.	Pegasus.	Split-Pin.
Doctor.	Pendennis.	Tourist.
Eagle.	Petrella.	Vernon.
Edna.	Powerful.	

The following admit one stop from causes other than failure of mechanism:—Blake, Castlenau, Guiltless, Traveller, Swift.

Objections to the above claims should be lodged (in writing) with the Club Secretary, 4, Whitehall Court, London, S.W., not later than Tuesday, November 26th, at noon. Apart from the eighteen vehicles which are disqualified, and in addition to the

forty-one vehicles in respect of which non-stop certificates are claimed, and the five vehicles for which it is claimed that they completed the run except for one stop from causes other than failure of mechanism, the following vehicles are known to have arrived at Cosham before the timekeepers left there :—

Accessible.	Impi.	Snipe.
Aimée.	Iris.	Sundayboy.
Albany.	Jenny Wren.	Tempter.
Aluminium.	Lady Mary.	The Flirt.
Anadyomene.	La Dormeuse.	Torpedo.
Antrona.	Liberté.	Uncle Sam.
Atalanta.	Lolden.	Vixen.
Bee.	Mercury.	Waif.
Belle.	Newport.	Xenia.
Boswick.	New York.	Advance.
Bride.	Novelty.	Comet.
Bridgeport.	Odear.	Eblana.
Briton.	Old Blue.	Eileen.
Buzzard.	Paratus.	Geegee.
Celerimus.	Patricia.	Ion.
Cunctator.	Peggy.	L'Avenir.
Diana.	Pioneer.	Nannacat.
Dolores.	Premier.	Nearit.
Donnachie.	Quiet.	Osprey.
Egalite.	Ravina.	Perfection.
Gleaner.	Silent.	Volante.
Hotspur.	Sluggard.	Beetle.

MISCELLANEA.

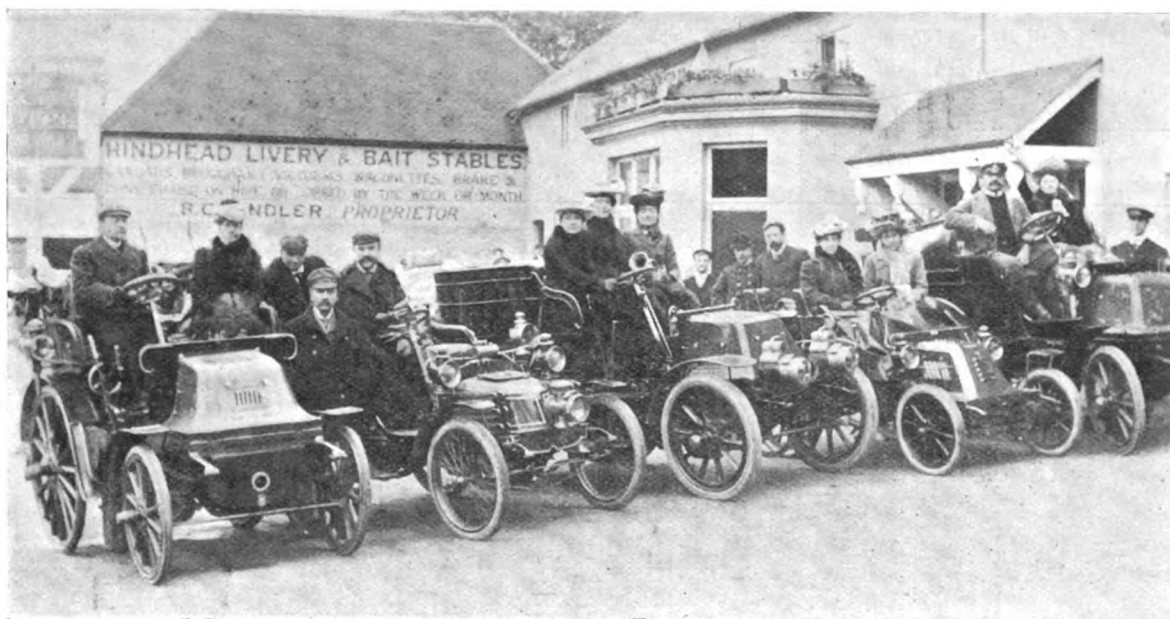
THE New Grappler Pneumatic Tyre Company are removing their Birmingham dépôt from 76, Bath Street, to more central premises at 201, Corporation Street, where all classes of motor-car and motor-cycle tires will be on view.

THE Beedle Patent Navigable War Balloon Company, Ltd., has been formed, with a capital of £3,000, to acquire the rights for making the Beedle war balloon from W. Beedle, the inventor, and to develop and turn to account the same.

THE Lancashire Steam Motor Company, of Leyland, near Preston, have, we hear, secured an order from the Liverpool Corporation for six steam-wagons. In order to cope with the increasing demand, the company has decided to erect new works, which, when completed, will cover an area of about six acres.

A TOPICAL joke appears in the Christmas Number of the *Royal Magazine*. A motorist is seated in a car, and above him an air-ship is flying. "Great Scott!" he says, "what a fool I was to spend two hundred pounds on this car. That," pointing to the air-ship, "is what I want."

THE Stafford City Council has approved of the general principle of a resolution of the Lancashire County Council in favour



HOMEWARD BOUND—AT THE ROYAL HUTS, HINDHEAD.

Photo by

[Dr. Dorin

ANALYSIS.

Disqualified ...	18
Claim Non-stop certificates ...	41
Had only one stop not caused by failure of mechanism ...	5
In addition to the above arrived at Cosham and had times taken by timekeepers ...	66
Known to have arrived later on Saturday night ...	5
	135

Started but so far as is at present known did not complete the journey ... 39

174

It is also known that the following vehicles arrived later at Southsea :—Dragon, Ripple, Choice, Whizzer, Le Limacon.

Owners of vehicles, the names of which are not mentioned above, are requested to communicate with the Club Secretary as to their arrival at Southsea, or state the reason why they failed to arrive there, as it is desired to obtain an accurate return of the performances of all vehicles which arrived at Southsea from London.

THE French Academy has admitted the word *automobilisme* into its dictionary.

of the abolition of the maximum speed limit for motor-cars, leaving the general law of the land to operate, provided that drivers should have a licence of competency, and that an identifying number be fixed to the car.

MESSRS. BRAMPTON, BROS., LIMITED, of Birmingham, have sent us a most elaborate wall hanger giving illustrations and full particulars of their largely-used motor roller and block chains ranging from 4in. pitch downwards. The illustrations depict the chains in full size. Particulars are also given of the chain wheels and also the cutters for making the same, of both of which Messrs. Brampton's make a speciality.

MOTORISTS in the Eastern Counties will be interested to learn that a large dépôt will be opened in a few days at 5, Prince of Wales Road, Norwich, by Messrs. Mann, Egerton and Company. The last named partner in this firm is well known in connection with his "end to end" trips on Werners, Locomobiles, etc., and has during the last six years had a wide and varied experience of all types of cars. The premises which are in the centre of the town, are capable of accommodating from forty to fifty cars, and include showrooms, stores, and large repair shops. A large stock of motor-cars and bicycles will be kept, as well as a complete selection of all accessories required, and of course a large stock of petrol, lubricating oils, etc.

CONTINENTAL NOTES.

BY "AUTOMAN."

IN last week's issue I promised the readers of the journal an account of the First Annual Exhibition of flying machines (heavier than the air), held at the Velodrome of the Parc des Princes at Paris, and organised by the *Auto-Velo*, under the patronage of the Aero Club of France. I accordingly went to visit it on the second and last day of its existence, when wonderful feats were announced, including the launch of a new aviator with a passenger on board. To say that I was disappointed would not represent adequately my feelings, for a more ridiculous exhibition can hardly be conceived. It is true that there were some men and boys, and even girls flying kites of various sizes and shapes, but one need not go out to the Parc des Princes to see kite-flying. There was a very primitive-looking structure of bamboo and calico, something of the shape of two spread-out wings and the tail of a bird, suspended from which a hardy aeronaut proposed to jump from the top of the grand stand, but he, unfortunately, as I have no doubt he would say, stuck his foot through the calico, and decided not to make the attempt. I think his decision was wise and the accident opportune. There was also a construction of shafts and pinions and a Bucht motor, which was said to be an embryonic airship, but it totally lacked a rather important part—namely, the means of raising itself from the ground, and thereby lacked interest. Last of all there was an electric machine suspended from a football goal-post, and when the motor was set to work from the accumulators of an electric automobile through a flexible wire the fan revolved at the end of its cord, and raised itself to the level of the cross bar of the goal-post. I noticed, however, that a start had to be given to it, and that left to itself it simply behaved like an ordinary fan placed on a table. It seemed to me that its raising when once started round its point of suspension was due more to centrifugal force than anything else.

ON Saturday last the Minister of Agriculture inaugurated the Exhibition of Alcohol used for motors in the Grand Palais, and President Loubet also visited the exhibition. There were not very many exhibits of motor-cars, but my attention was particularly drawn to the Schweitzer automobile combined flour mill and bakery, which was in full working order in the exhibition, literally taking in grain at one end and turning out bread at the other. The motor was working three mills and two dough mixers, and dealing with 200lbs. of corn an hour. The whole is very compact and on artillery iron-shod wheels, with a seat in front for the driver. I noticed also a neat and complete Aster set, including motor and carburettor, on a cast-iron base, to be used as a fixed plant for driving a dynamo or any other machine. The Distillerie La Couronne exhibit an engine on the Durr system, which looks exactly like the ordinary portable engine used for agricultural purposes, and would be mistaken at first sight for a steam engine, for the explosion motor, which has two pistons working in opposite directions, is contained in a long metal cylinder, which looks just like a boiler.

AT one end of the Grand Palais a track had been railed off, and round it the motor-cars were circulating as they did at the Agricultural Hall the last two years. The track was undoubtedly a great draw to the Parisian public, and I heard many interested in the trade wishing it could be used for the Automobile Show next month.

THE Paris-Vienna race is the subject of violent attack by a portion of the Vienna press, and at one time last week it was rumoured and reported in several papers that it would not be authorised by the Austrian Government. Happily, however, the rumour turned out to be incorrect, and from inquiries at the A.C.F. there seems a strong probability that the event will come off.

THE results of the alcohol contest organised by the Minister of Agriculture were published on Saturday last, and

the first prize of every class of vehicles has been accorded to cars using a 50 per cent. carburetted alcohol. Amongst the thirty-six competitors nine used pure alcohol, two a 75 per cent. mixture, and the remaining twenty-five a 50 per cent. mixture, so that it may be inferred from the results that up to the present a 50 per cent. mixture is the best. The winners of the different sections were as follows:—First section, motor-cycles and light cars up to 250 kilos.: Lamaudière on a motor-bicycle; second section, voiturettes and cars between 250 and 650 kilos.: Georges Richard with a 4 h.p. single-cylinder car, weighing 426 kilos.; third section, cars above 650 kilos.: Delahaye with a 7½ h.p. two-cylinder car, weighing 1,042 kilos.: fourth section, vans and lorries: Société Naucéenne with a 10 h.p. four-cylinder lorry, weighing 2½ tons and carrying over 2 tons load.

THE results are very peculiar, and differ entirely from racing results. In the second section a 7 h.p. Panhard and Levassor scored the fewest marks of all its section, and a 10 h.p. Mors with a four cylinder motor was last but one in its section, though it came in first. Even in the goods vans, Panhard and Levassor and Peugeot had to play second fiddle.

THE question of the limit of weight in the Gordon-Bennett race for 1902 has at last been definitely settled by the A.C.F. All the clubs except the A.C.G.B.I. were in favour of the limit of 1,000 kilos. for this race, and the A.C.F. referred the matter to the donor of the cup, Mr. Gordon Bennett, who has written a letter to the A.C.F. entirely approving the proposition, which now becomes official. It is unfortunate for England that this rule disqualifies the 50 h.p. Napier cars, which are the only ones that could possibly compete, unless some English sportsmen will come forward and be the "Lipton" of the motor-car world.

AT the same meeting, at which the final decision in the Gordon-Bennett cup was taken, a new category of racing bicycles was created for the Paris-Vienna race, in which the weight of the bicycle must not exceed 105lbs. The entrance-fees for the Paris-Vienna race were also fixed as follows:—Heavy cars (1,000 kilos. to 650 kilos.), 400fr.; light cars (650 kilos. to 400 kilos.), 300fr.; voiturettes (400 kilos. to 250 kilos.), 200fr.; motor-cycles (250 kilos. to 50 kilos.), 100fr.; bicycles (not exceeding 50 kilos.), 50fr.

MR. PAUL MEYAN, of *La France Automobile*, announces the fact that he is willing to organise a "Course des Pannes," or "breakdown race." The race is to be held on a private estate entirely surrounded by walls, and situated some nine or ten miles from Paris. The course is nearly two miles long, and contains steep hill, bad turnings, and bad roads, so that it will be a question of the survival of the fittest, and I believe that the least breakdown or stoppage for any reason whatever will disqualify a competing car. The competition is to be held during the last half of March.

THE King of Italy has announced his intention of offering a valuable prize in connection with a proposed motor-car race from Paris to Rome.

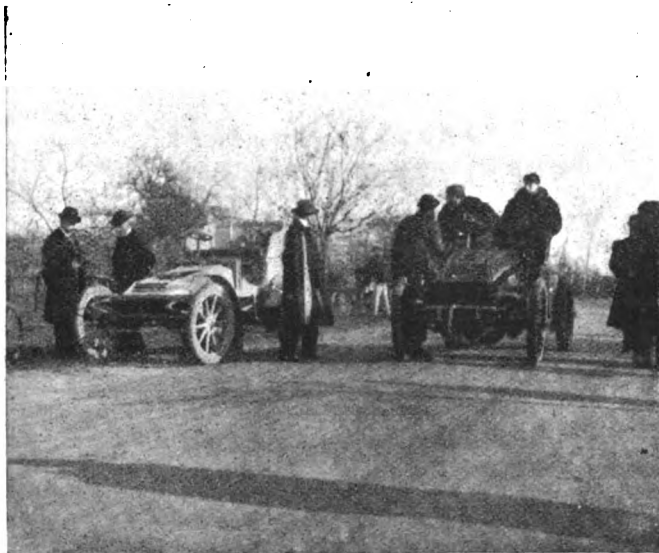
MESSRS. SHIPPEY BROTHERS have, we learn, secured the contract for the supply of Diamond rubber tires of special construction to be used on the "Locomobiles" recently supplied to the order of Mr. Zacharias for carrying the mails for the Malayan Transport Company of Kuala Lumpur. The results of the working of these vehicles for postal service will be looked forward to with interest.

A PROSPECTUS of the sixth Liverpool Cycle and Motor Show has reached us from the secretary. The show will be held at St. George's Hall in the first week of February, 1902, under the auspices of the Liverpool Self-Propelled Traffic Association. Motor firms exhibiting at any show within twenty miles of Charing Cross, other than the Automobile Club's Exhibition at the Agricultural Hall, will be ineligible for space at Liverpool.

HILL-CLIMBING CONTEST AT GAILLON.

ON Sunday last the third annual hill-climbing trial known as the Côte de Gaillon was contested. The contest was originated by *Le Velo*, and Gaillon was chosen—for two reasons, first, because the hill allows a full kilomètre of an average of 9 per cent. incline in a straight line, and, second, because a little beyond the summit there is a by-road leading down to the start. It is, therefore, an ideal situation for the

side of the road—Mr. S. F. Edge with his 50 h.p. Napier, Jenatzy with his 100 h.p. combination electric-petrol car, and Mr. Mark Mayhew with the 50 h.p. Napier which competed for the Paris-Bordeaux and Paris-Berlin races, quite unrecognisable with its *tonneau* body and fine carriage work. There, too, was Mr. Jarrott. The fog extended just to the starting post, and beyond it the hill appeared bright in the sunlight, but as we turned and looked back when half way up the hill we looked down on a sea of mist, which covered the country in every direction, whilst all above us was bathed in warm sunshine, with a clear blue sky overhead.



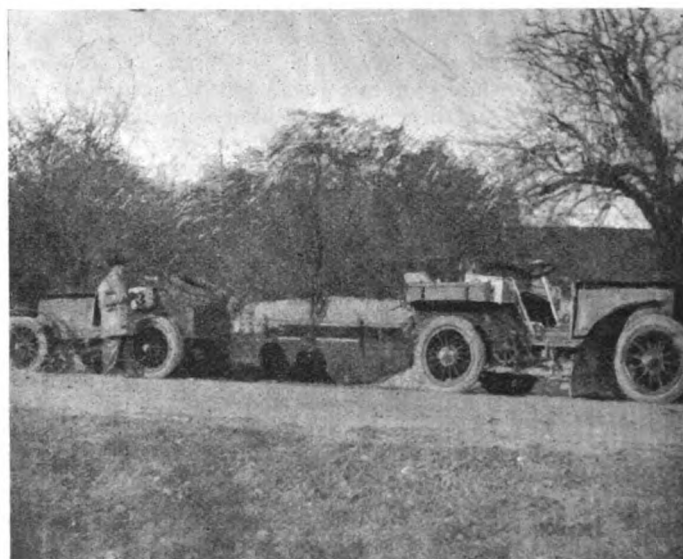
READY TO START.



MR. S. F. EDGE ON THE 50 H.P. NAPIER.



TACKLING THE HILL.



THE TWO 50 H.P. NAPIERS READY FOR THE FRAY.

purpose. The village of Gaillon is situated about sixty miles from Paris towards the west, and the hill lies just outside of the village and leads up to a low range of hills which separate the valley of the Seine from the valley of the Oise.

The morning was frosty and a heavy fog of wet mist covered the land in every direction. Gaillon was decorated with flags and the scene was most animated. In the yard of the hotel where I lunched M. Buchet was testing and arranging the engine of his car, a tiny vehicle with a 16 h.p. motor. The competition was advertised for noon, and just about that time my party arrived at the foot of the hill and found three big cars lined up at the

Never have I seen anything more weirdly beautiful than the whole panorama, with the racing motor-cars suddenly appearing out of the mist below and bursting into the light.

Edge was the first to come up, and he flew past me before I had time to get my camera ready. Then came a regular procession. Mark Mayhew, with Mrs. Edge, Jarrott and a *mecanicien*, made a good start, but just about half way up the hill slowed up, and I thought he was changing speed, but was afterwards informed that the gears had slipped out. It spoiled his time completely, however. A 40 h.p. Panhard did just the same thing. Jenatzy's car passed me with

De Caters driving, but did not seem to go very fast, and afterwards I learned that a wire had fused. Krieger's electrical car did very fairly, and so did the little 6 h.p. Gardner-Serpollet, with M. and Mme. Serpollet on board. A 16 h.p. Decauville came by at a tremendous speed, and then came the extraordinary vehicle constructed and driven by Truffault, of which an illustration was given in the *Journal* last week. The car seemed to me to go faster than anything else that passed me except the tricycles. It was easy to see that these latter beat everything in the competition without waiting to hear the results.

The Mercedes, which should have competed, was *hors de combat*, and so was last year's winner, Beconnais, and both for the same reason. I heard the story from Rigal, the winner of the competition and the holder of the record for this year, and I will give it as I heard it. It seems that on Saturday the Mercedes had been trying the hill, and was racing down again, and Beconnais, who was also coming down, was in front of the car on his tricycle. Both were going at racing speed when Beconnais suddenly turned off his electric contact without any warning, and the Mercedes at, according to Rigal, sixty miles an hour, ran into Beconnais taking a wheel off his tricycle and throwing him into the air; the Mercedes itself turned aside into the trees and was literally broken to pieces. There was nothing left whole but the hind-wheels. The two *chauffeurs* were badly bruised and cut, but I saw Beconnais on the station as I was returning to Paris. The driver of the Mercedes, I learn, is suffering from internal injuries as he was thrown against the steering pillar which snapped clean off under his weight.

M. Serpollet offered me a seat on his car coming down the side road and there I heard of the new engine which the former is about to bring out and which is to give double the power and much better results. At the foot of the hill I was surprised to find Mr. J. S. Critchley being piloted by Mr. Selbach and I returned to Paris with them to find that great city completely enveloped in fog.

As a result of the competition the winners of the various classes are as follows:—

Category.	Driver.	Car.	Min. Sec.	Miles per hour, about.
Heavy cars	S. F. Edge ...	50 h.p. Napier	1 3 3.5	36
Heavy cars (4 passengers)	De Beiglique..	40 h.p. Panhard	1 14 2.5	30
Heavy cars (6 passengers)	Degrais	16 h.p. De Dietrich	2 58 1.5	13
Electric cars	Krieger	Krieger	1 15 1.5	30
Steam cars	Rutishauser ...	Serpollet ...	1 15 1.5	30
Combination cars ...	De Caters	Jenatzky	1 53 2.5	20
Light cars	Thery	16 h.p. Decauville	1 5 3.5	35
Light cars (4 passengers)	Rebeyrolles ...	16 h.p. Darracq	1 27 0	26
Light steam cars ...	L. Serpollet ...	Gardner - Serpollet	1 12 3.5	31
Voiturettes.....	Truffault	12 h.p. Truffault	1 1 0	37
Voiturettes, steam...	Blake	Locomobile ...	1 34 1.5	24
Quads	Osmont	10 h.p. De Dion	0 54 1.5	41
Tricycles	Rigal	12 h.p. Darracq	0 50 2.5	45
Motor-bicycles ...	Demester	Bourdiaux.....	1 24 2.5	27

Mark Mayhew's time was 1 min. 33 2.5 sec.

SPAIN has added to the number of our foreign contemporaries by the production of the *Revista de l'Automobilismo*, an attractive journal hailing from Madrid.

THE driver of a French motor-car who recently ran through a covey of partridges on the high road near St. Quentin was visited at his hotel by a gendarme, and was asked if he had a shooting licence. No such document being forthcoming, the motorist was served with summonses for two distinct offences—killing and carrying off a partridge, and failing to declare game on passing through the octroi barrier. It afterwards transpired that one of the partridges had become entangled in and was killed by the radiator of the motor-car.

THE PROGRESS OF A NEW INDUSTRY.

AUTOMOBILISM has gained great popularity in England, and continues to meet with marked success in all its branches. To the commercial world it has already proved a boon, while for sport and recreation the motor-car is without a rival. His Majesty has, upon several occasions, discarded horseflesh and the railway-train for the motor-car, and this preference of itself has already had a far-reaching, beneficial effect upon the industry. Moreover, our very "conservative" War Office has made use of the automobile with most satisfactory results; and, further, the Chief of the Fire Brigade now speedily travels upon his motor-car to any point where his presence may be required. In fact, a welcome is slowly but surely being extended to the cause, and the principal reason is not difficult to discover. The public are now recognising the fact that it is not necessary to become a mechanic to master the few simple details connected with the propulsion of the new form of road vehicle. The stage-coach was good enough until the advent of the railway train, which, of course, became the speediest means of travel. Yet, again the old order changeth, for, strictly speaking, it is fastest no longer. *Chauffeurs*, mounted upon vehicles of wondrous power, and travelling over the fine straight roads that are to be met with on the Continent, have repeatedly beaten some of the crack expresses. The lumbering omnibus had to be accepted till the "Twopenny Tube" and the electric tram arrived with their rapid, clean, and economical advantages. But finality has not been reached, for Progress never sleeps, and the automobile may penetrate where the sound of the whistle or beat of the gong is unheard.

As everyone knows, prior to November, 1896, the self-propelled road vehicle was not allowed to proceed at a pace exceeding four miles an hour, with a man holding a red flag before it and preceding its passage for the benefit of nervous horses. Owing to this short-sightedness upon the part of our legislature, the making of automobiles in this country may be said to have but just begun, and it is astonishing, even to the casual observer, how rapid our advance has been. On the Continent, a different view was held. The construction of the self-propelling vehicle was proceeded with apace, and its utility was watched with discerning interest by the public and politicians alike. Accordingly, not being handicapped but aided in every possible manner, the constructors made great strides with their ever progressive improvements. The result is that many believe the French to be our masters. If this be so, we shall have to learn from them still, before we can satisfactorily place our products in competition with theirs. We now have several excellent manufacturing concerns in this country, which appear to vie with each other in bringing the motor-car to as near perfection as is possible.

In conclusion, much to the pleasure and approval of all well-disposed motorists, the "great B.P." are not now content to sit upon the fence, but desire to learn something of the ways of the "new-fangled" machine. It behoves, then, the aforesaid motorists to becomingly display the paces of their iron-steeds to the uninitiated. They will not find the seeds thus sown to be without effect, and soon the murmurings of the unbelievers will be set at rest. We must remember, also, that the British engineer is no fool, he means to be first, let him progress but a little further, and he is bound to succeed. HUGH OWEN.

AN Italian correspondent informs us that Mr. Cecil Rhodes was not involved in the motor-car accident near Turin as reported. Mr. Rhodes was at Venice at the time of the accident and did not arrive at Turin till three days later.

MR. MCTAGGART, one of the directors of the Centaur Cycle Company, Ltd., Coventry, speaking at the shareholders meeting on Saturday last, said that he listened with interest to the suggestion that no further risk should be run in cost of motor-car making; but it was only fair to state that the company had at last produced a car of which he believed more would be heard in the future. Enterprise of this sort was generally started by private individuals, and he thought the Centaur Company would be justified in going further.

FLOTSAM AND JETSAM.

BY "FLANEUR."



ALL'S well that ends well"; but it was a thousand pities that that murky fog appeared last Saturday morning, for it robbed the Southsea tour of all its spectacular value to the London public. It would have been a magnificent sight, the procession of more than two hundred cars along Whitehall, or twice the number that had figured in any previous run; but the turn-out was reduced by one-fourth, and the public could see nothing in the gloom, with the exception of those who, moved by curiosity or sympathetic interest, went to the Horse Guards' Avenue itself and witnessed the actual start. And it was little enough that was discernible there. To find one's own car was difficult enough, and to hunt up one's friends on other cars for the exchange of greetings was quite out of the question; it was equally impossible, moreover, to make mental notes on the new types of vehicle, of which not a few were on the list of entries.

APART from the unpropitious start, however, the run must be pronounced an immense success, and as such it was clearly regarded by the good folks of the towns and villages through which it passed. At Winchester I heard a bystander remark that the railways were doomed, so impressed was he by the sight of the cars assembled in the Broadway! Portsmouth's reception was a right royal one, and the arrival of so many cars in good time must have had a potent influence upon the spectators who lined the streets so thickly. Had they but known the extent to which the cars had been throttled down for the most part throughout the journey, in conformity with the Club regulations for the tour, they would have, perhaps, entertained still more respect for the potentialities of automobilism. For, in truth, the time-keeping limits had been somewhat severe, particularly on the stages from Egham Hill to Blackwater crossing, and from there to Basingstoke. Thenceforward the allowances were more reasonable, but previously they were somewhat trying, for, in spite of moderate running from the outset, one found one's self reduced to the necessity of crawling in on the bottom speed, with the throttle closed and the spark retarded as much as was possible without stopping the engine altogether. A car running under these conditions was hardly calculated to impress the waiting public on the outskirts, for example, of Basingstoke. How the big cars liked the limitation of pace I can only imagine, but personally I found even my modest "seven-horse" too powerful for the occasion, so far as concerns the stages named.

IT must be placed to the credit of the Automobile Club, nevertheless, and is a testimony to its increased authority, that the regulations were observed by a number of competitors; I say "competitors" because the majority of the tourists had entered for a non-stop run. Some were by no means impeccable, however. On Egham Hill, for example, the single file was broken without any justification. I was going up like a bird, but caught up to a slower car in front and forebore to pass, although my run up was grievously spoiled by conformity to the regulations. Immediately afterwards, however, a big car sailed by me on the inside, with a train of half a dozen others who followed its evil example, and the whole group got up to the timekeepers before the car which I had refrained from passing and my own. This was scarcely sportsmanlike; neither was the conduct of the driver of an electric car who bore over to the right in order to prevent my passing when on the open road, many miles after the single-file regulation had expired. As for not passing down-hill, that was a proviso decidedly more honoured in the breach than the observance.

NEWSPAPER descriptions of the tour, as a whole, were doubly valuable this year in view of the dismal circumstances attendant on the start and the resultant absence of a decisive impression on the public mind. On the whole, the various correspondents appeared to be a little better educated to the possibilities of automobilism than in previous years. *The Times* had only a third of a column report, and the *Morning Post* merely ten lines, but the

Daily Telegraph had three-quarters of a column, the *Daily News*, *Standard*, *Daily Mail*, *Daily Express*, and *Daily Graphic* also producing the same quantity, but of varying quality. In the latter respect the *Daily Telegraph* was undoubtedly the best. The *Daily Mail* was absurdly hard on British cars, and the *Daily Express* was flippant, and lacked its usual sobriety in dealing with automobile topics. The *Daily Graphic's* sensible report was usefully supplemented by a half-page illustration of the start from Whitehall Court in the fog. Sundry errors in the *Standard* and *Daily News* accounts require correction. In the former it was stated that "although English cars were well represented, it was noticeable that the majority of vehicles were of foreign manufacture." Including the American steam-cars there were just a few more cars of all nations combined, than the purely English; but England had the largest representation of petrol-driven vehicles, and the largest show made by any country singly.

THE *Daily News* man made the interesting discovery that Bagshot is in Hampshire (*sic*), and descanted on the activity of the police in that county on the strength of what was seen north of the borough named. He also re-baptised Mr. Burford's car for him by calling it the "Walloup." Nevertheless the *Daily News* acknowledged the tour to be a triumphant success, and barely succeeded in concealing its own surprise thereat. It is characteristic of what "policemanism" has done for this country that the following sentence should appear even in a report intended to be sympathetic:—"Magistrates and police will be under the necessity of at once making up their minds and framing necessary regulations to apply to a new feature of English life." What appalling ignorance of the constitution of this country that one sentence reveals! When a newspaper man himself does not know that magistrates and police have no power to make laws and regulations, but are the servants of the public, it is small wonder that the latter know no better themselves the power that rests in their own hands, and endure so much of the tyrannical from the village policeman and the rural justice. Regulations indeed! The bare idea of magistrates and policemen becoming law-makers is too ludicrous for words.

TAKEN altogether, however, the descriptions of the tour were satisfactory, for the simple reason that the newspaper men went out to see with their own eyes instead of evolving phantasmagoria from their own imaginations. The type of leader writer, however, who writes of that which he does not understand still lingers in sundry places. A week or two ago the *Daily Chronicle* had an editorial dispute against automobilists which, for downright bigotry and blind refusal to look at facts, eclipsed anything that has been seen for many a long day. Last Saturday, too, the *Daily Graphic* had an article headed "The Scorching Car," in which it was declared that so great had become "the nuisance of furious motoring on some of the main thoroughfares from London to the South Coast, that the magistrates have been compelled to adopt extraordinary measures for its suppression." The police tactics at Reigate and elsewhere are quoted with approval, in the matter-of-fact way, which takes for granted that whatever the magistrates and the police do is necessarily right. Now, if the *Daily Graphic* had any cognisance whatever of the actual state of things prevailing round Reigate, Cobham, Ripley, and other ambuscaded spots it would learn how notoriously unjust these prosecutions are, for drivers of the slowest of cars have been summoned and fined, on worthless testimony, and before a bench that, so far as Reigate is concerned, does not even pretend to administer justice, but serves out fines like an automatic machine. Perhaps the *Daily Graphic* will not mind reading the Earl of Onslow's speech at the Automobile Club dinner. Being a Surrey magistrate he, of course, knows much less about the subject than a London daily; but his outspoken comments on the police "spy and common informer" may be commended to our contemporary none the less.

A PUBLIC service of motor-cars is about to be started at Plymouth.

CORRESPONDENCE.

POPULAR-PRICED CARS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—In reference to Mr. Jackson's and Mr. Bridgman's letters, *re* "Popular-Priced Cars," I should like to state my experience. I have made a small car on the Century tandem lines, but with a body dropped on the frame, which is $1\frac{1}{2}$ steel tubing, with motor bolted in front, driving through chain to countershaft, and from countershaft to back wheel. Everything is simply arranged, there are no complications, and when you have got the mixture right there is no further trouble from the carburettor. Now, I maintain that a car *can* be made for £75, if (and a big if) people would be satisfied with such a car. I am only a working man, but if anyone likes to try the experiment I will guarantee to turn out a car costing no more than the price I state. In support of my statement I will give a list of the biggest items in such a car:— $3\frac{1}{2}$ water-cooled motor, £15; three wheels and tires built up complete, £12; small body, painted and upholstered, £5; two-speed gear and chains, £2 10s.; ignition and carburettor, £5; steel tube frame and springs, £3. As will be seen the above are finished articles, and only require putting together. The total comes out at £42 10s., which leaves a big balance for extras and work connected with the building. I am aware that there are a few items not included in the above, but all the biggest are mentioned.—Yours truly,

A WORKING MAN.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I think the advice of Mr. Cecil Jackson *re* the abolition of high-powered cars should receive prompt attention from manufacturers, as the presence of such high-flyers on the roads gives to the public a very repulsive feeling as regards motor-cars generally. On the other hand, a neat little pleasure car skimming gracefully along the road creates in the public mind only a feeling of envy.

I see some of our English sporting youths down for the shooting season flying along with their big Continental motor-car as if the road was all their own. Little wonder the authorities and public are so much down on motor-vehicles. They get very little sympathy from passing pedestrians when they are having a roadside repair or being hauled into town.

As regards popular-priced cars, I think the Glasgow firms are making a big hit in that direction, to judge by the Dumbartonshire and Ayrshire roads, which are alive with neat little Phaetons, Victoriettes, and John o' Groats, costing from £100 upwards, and made by the Hozier and Stirling Motor-Carriage Companies. The little vehicles glide along the roads and mount the hills in a truly astonishing manner. I think that prospective motorists before placing orders for high-powered and high-priced cars should have a look at these little John o' Groats, the workmanship, stability, and general finish of which will compare favourably with those of any Continental production.—Yours truly,

ALISTER MCLEUD.

MOTOR-BICYCLES FOR 1902.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Seeing in your correspondence columns letters *re* the Werner motor-bicycle, I might mention as a rider of same that I have never had cause to complain of my machine. Although I have ridden several thousand miles I have never been stranded through faults of the machine. The motor is most simple to manage, is very powerful, and will climb hills 1 in 10 and average 20 to 25 miles per hour on a good give-and-take road. As to finish, the motor and its parts are well made, although a little more external finish might be added. The sparking plugs being of De Dion pattern no trouble is found in replacing them in case of failure.

Some of the American motor-cycles are fitted with a special plug which costs about 15s., thus making motoring expensive for spare parts. The accumulators do all that the makers claim, and as any electrician knows, an accumulator is at its prime after being charged a few times. I do not sing the praise of the Werner for

any personal gain but from the experience of a rider of some two years' standing.—Yours truly,

HENRY KENNETT, JUN.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Letters such as those of "Petro" and "Electrical Engineer" will prove very valuable to your readers, and, I hope, stimulate the makers to further enterprise. I agree with "Electrical Engineer" that the Werner might become very popular. My own machine has been timed to do a mile at over 32 on the level, and has taken a gradient of 1 in 7 (with hard pedalling). But though these results are very good, the machine is roughly put together, requires constant attention, and in point of reliability cannot compare with an up-to-date motor-tricycle. Reports to hand from two experts condemn the workmanship in the motor, while, as already said, the bicycle parts of the machine leave everything to be desired. It is said that improvements are to be made in respect of the lubrication, carburettor, brake, general finish, etc. Well, we shall see at the shows, and after. There is also a new centre-frame motor pattern to be introduced, doubtless to meet the side-slip difficulty. I may here state, after unpleasant autumn experiences, that the existing pattern machine simply cannot be ridden with safety in wet weather on South Devon roads with limestone "grease." As an ex-racing cyclist I may be supposed to know how to ride, and I can only say that I shall never ride a Werner except in fine weather in Devon again. Of course, all roads are not as ours.

I have ridden Minervas and a Singer—the latter, by the way, is too high-priced for the results got out of it—and found the former very weak on hills and the latter slow, but, I should say, useful to non-expert wheelmen. I am now in hopes that the new 1902 Minerva engine is what it claims to be—of net $1\frac{1}{2}$ h.p. If it is, we may find the Minerva type of motor very useful. Up to date these engines have proved weak, and my experience of a $1\frac{1}{2}$ h.p. (?) Minerva bicycle at Coventry can only be described as that of sitting on a toy which hung fire at every slope. Of course, if we get a real $1\frac{1}{2}$ h.p. Minerva on a well-finished British-made machine—I should prefer 2 h.p. myself—the advantages of this type of cycle will be obvious. It will be effective, and will, an all-important matter, not betray its rider by slipping.

As to "Petro's" suggestion of chain-drive, everyone will recall belt failures with disgust. In this hilly county the Werner belt stretches so as to need most frequent adjustment; the grip is unsatisfactory at the best, and the business of cutting, piercing, and hooking together the leather, messy and troublesome. But a Werner with a chain-drive would cause intolerable vibration, and probably increase the already too frequent breakdowns, such as are due to the pulling through of the carburettor tank supports and the like. But for a back-wheel driver a chain might be better, economising as it does the working power of the engine.—Yours truly,

E. D. FAWCETT.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—A recent issue of yours contained a letter by Mr. E. D. Fawcett concerning the motor-bicycle of 1902 and what it should be, and I remarked that he said it would be interesting to have various riders' experiences of their machines for 1901. As he has a Werner, he may be interested to hear that my 1901 machine has carried me 2,400 miles since I purchased it in the month of June last, and with absolutely not a single breakdown. I have renewed nothing but a trembler, which I broke by drilling a larger hole in it for the platinum contact. I travelled 2,000 miles without touching either of the valves, and I am confident that the engine is in almost better condition than when I first had it. On one occasion, my longest ride, the machine carried me from London to Barnstaple (215 miles) actual distance, covered in eleven hours running time, with but an adjustment of the trembler *en route*. I am sure that Mr. Fawcett will agree with me that this is about as much as we can demand reasonably from the motor-bicycle as we know it at present.

Being desirous of taking advantage of each year's improve-

ments, I have now bought three Werners, and in the course of my three years' riding I have travelled more than 10,000 miles. I have always stuck to the same make, for I have never seen a better, nor its equal, so far as that goes, without taking into consideration the probability that the makers who made the first practical motor-bicycle sold, and who have now been making them for five years, are likely to produce the best machine, all round, after all.

Mr. Fawcett, then, will forgive me, I hope, if I, with the above experience of the machine, venture in turn to criticise his criticisms, for I have ridden other makes besides the Werner. As regards cleanliness, how can the Excelsior and Minerva be cleaner? It is merely a question of seeing that the joints and bearings of the motor are oil-tight, and your engine remains as clean as can be desired. As for mud, the Werner is absolutely out of its way, which cannot be said of the other makes, least of all the Singer. My carburettor holds about three-quarters of a gallon, which carries me 120 miles, which is surely far enough, apart from the aid of a two-litre spare reservoir sufficient for another eighty miles. Will the Minerva carry one further? As for the general finish, I freely admit it *was* not all that could be desired, but the 1901 machine is excellent, and will be surpassed by that for 1902, from what I hear.

Mr. Fawcett says his machine is the best at hill-climbing! Why, that is just where the Singer is good, for I have tried it on stiff hills, but it is hopelessly out of it on the level, and the Werner beats them all easily, so he evidently has reason to congratulate himself on the capabilities of his bicycle. I can assure him that his "ridiculous band-brake" is a very powerful one indeed, for as he can easily see, the drum is wider and of larger diameter than those thought sufficient by makers of ordinary safeties in England, but I much object to the method of linking the brake-band to the brake-handle. The wire loops pull open under a great strain. Bowden wire is a great improvement when used in place of the spoke-wire now employed. Two brakes *are* fitted in Paris when asked for. An exhaust valve-lifter is much wanted, and, above all, a head-lock. The free-wheel clutch he condemns is the familiar Morrow, which is generally held efficient, and if it runs "as if clogged with mud" the chain must be too tight or lubrication is needed. The wiring of the 1901 machine is as much hidden as on any non-magneto ignition motor in the market, I think. The horse-power of the 1902 machines *will* be optional. The carburettor is to be changed for one of the spray type pattern, but Mr. Fawcett will find that he has introduced with it another possible source of breakdown. I can assure him that the present surface-type one is not the capricious thing he conceives it to be, if only he will see once for all that the reservoir is airtight when closed and that the tap and two passages of communication are in proper condition. As for projections between the knees, I know of no machine, bar the Singer, as free from them as the Werner. Let Mr. Fawcett try a hot cylinder there as well, and see the difference. As regards the throttle valve and advance levers working loose, there is a lock-nut on the latter and a single one on the former, and they can be tightened at will. Such difficulties as these are no greater than those involved in the use of any mechanism, and are easily overcome. I know of no cleaner method of lubrication to be found anywhere than that used for the Werner motor, and one which is identical with De Dion's system, and admirable it is. If a properly secure gear-case is provided, it is practically hermetically sealed. As regards Mr. Fawcett's other suggestions, I agree most fully with him.

With regard to delay in supplying spare parts and their interchangeability, I should advise Mr. Fawcett to make a few inquiries concerning the woes of automobilists in general on this point, and he will be greatly comforted. In conclusion, I venture to think that if Mr. Fawcett—whom, by the way, I believe I once had the pleasure of meeting for five minutes or so at the Crystal Palace, during the Motor Reliability Trials—had ridden some other type of machine for an equal distance, he would have had a longer list of difficulties and deficiencies to tell us of. The little motor-

bicycle, already a marvel of engineering skill, is yet far from perfect, but still it is the lightest, cheapest, and easiest automobile to operate on our planet—a position of distinction, and no mean triumph for the inventor!—Yours faithfully,

A. L. BENETT.

ASBESTOS IN SILENCERS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Referring to the method of lining exhaust boxes with a sheeting of asbestos, I find that after 2,000 miles the asbestos has perished and burnt away, especially near the inner tube of box. I mention this to save trouble to others who may be inclined to try the process. It is efficient while it lasts, but a trouble to keep renewing.—Yours truly,

W. P. SHAW.

IMPROVEMENTS TO WERNER BICYCLES.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I have just had fitted to my Werner motor-bicycle an extra casing over the usual silencer, also a small silencer on the compression tap, which makes the machine practically noiseless. The advantages of these improvements cannot be over estimated, the compression tap silencer enables the machine to run exceedingly slow and silent in traffic without having to pedal. The additions were made by H. F. Harding, 283A, Brixton Road, S.W., at the small price of 12s. 6d.—Yours truly,

J. R. W. PATTISON.

REFERRING to the description of the Carlton bicycle-motor in our last issue, Messrs. James Rickard and Co., of Brentford, write:—"We take the liberty to state that it is impossible for the makers of this motor to substantiate some of their claims. We particularly refer to the claim that they can run this motor with ordinary paraffin oil, as well as with petrol, with identical results, without any alterations. We have been making petrol motors and ordinary paraffin oil motors for over five years, and well know the difference that must be made in any motor if it is to be run with petrol or paraffin."

DURING the month of October the United States appraisers at New York passed twenty-three foreign motor-cars into the country, of a total value, with duty added, of £24,000.

AN international motor-car and cycle show is to be held in Turin, Italy, in May and June next year. The offices of the exhibition are at Palais de la Chambre de Commerce, 28, Rue Ospedale, Turin.

VARIOUS French motor manufacturers, including the firms of Panhard, Mors, Clement, Richard, and others, are said to have come to an agreement regarding standard frames which will make it possible to fit the body of one to the frame of another vehicle. Panhard frames have been adopted as the standards.

MR. T. P. O'GRADY, works manager of the Lewis Cycle Works, Adelaide, South Australia, writes us regarding the car illustrated in our issue of the 24th August last, stating that the vehicle has since been fitted with a water-cooled motor in place of the air-cooled engine formerly used. Since the change was made the car has been subjected to some extensive trials with successful results, both as regards hill-climbing capacity and speed on the level.

THE Petroleum Institute, the newest institution established in London, was opened on the 8th inst., under circumstances which augur well for its future success and usefulness. The oil school, as it has been called, is housed in commodious premises at 24, Bevis Marks, E.C. It is largely the creation of Dr. P. Dvorkovitz, who, in explaining the objects of the institute, pointed out that the science of petroleum and its production, storage, distribution, and manufacture finds no place in modern universities and colleges, although the subject is becoming more important yearly.

HERE AND THERE.

THE Doherty Motor Accessories Company, Days Lane, Coventry, recently showed our Midland representative some very fine specimens of motor-bicycle tanks, of which they are making a speciality.

MESSRS. DE DION-BOUTON, LIMITED, inform us that they have now received a delivery of the new De Dion cars (1902



THE KOPPEL PHAETON (*See issue July 20th, 1901.*)

pattern). They claim that these are the first actual vehicles to reach this country.

By command of the King the British and Foreign Electrical Vehicle Company, of Bloomsbury Place, W., on Wednesday, despatched to Sandringham for His Majesty's inspection two electric motor-cars of the "Powerful" design.

THE Collier Twin Tire Company, Ltd., of 8, The Broadway, Ludgate Hill, E.C., are issuing a new illustrated catalogue in which are set forth the many undeniable advantages claimed for their tires, as well as a complete price list and many testimonials of a convincing order.

WERNER MOTORS, LTD., is the name of a company which has been formed to exploit the new Werner (1902) pattern motor-bicycle in this country. Among the first directors are Messrs. S. F. Edge, C. Jarrott, H. O. Duncan, and the two brothers Werner. The offices of the company are at 28, Brook Street, W.

OUTSIDE Messrs. Gamage's the latter part of last week was an animated scene in which motor-cars played the main part. We understand that the Holborn firm now stock practically everything a motorist can want for himself or car. We are further informed that petrol can now be obtained there at 1s. per gallon.

MR. E. BARUCH BLAKER, of Worthing, writes us in an enthusiastic strain regarding his Speed King tricycle fitted with 2½ h.p. water-cooled engine. During the past summer he has put it to some very severe tests on the road and path. His longest journey in the day was from Worthing to Bath and back.

"PATENT Notes for Inventors" is the title of a handy little pamphlet put together by Reginald W. Barker, a well-known authority on patents. The pamphlet, which is published at Vul-

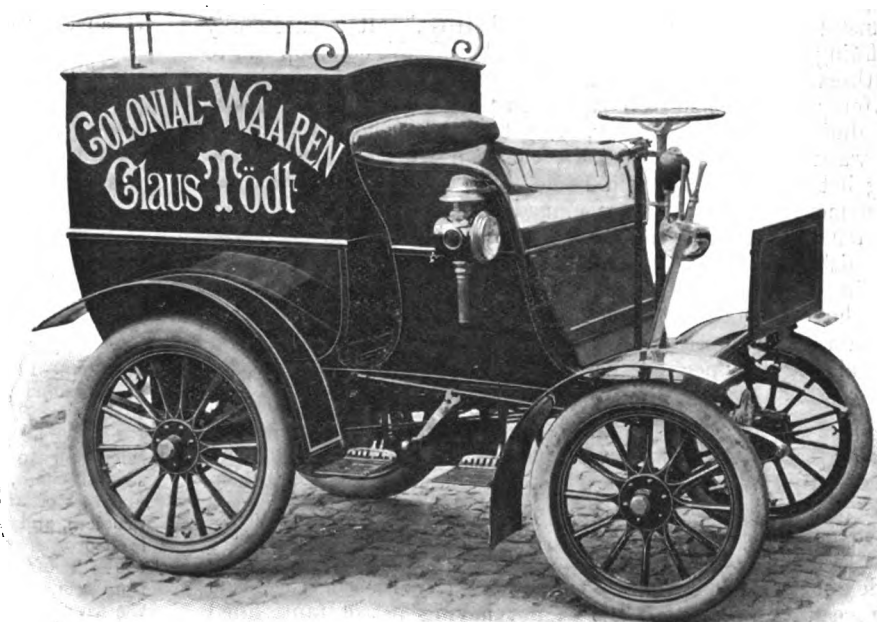
can House, 56, Ludgate Hill, E.C., contains in concise form all the information which the embryo patentee requires, and should be read by all who seek to derive the full benefit of an inventive brain.

THE Kensington Motor-Car Company, Limited, are opening offices and works at 64, Hammersmith Road, London, W., where they will be found in full swing on and after December 1st. Motors for cars and launches with their component parts are the main features of the work to be undertaken. Of these and various other important parts of motor-cars the well-illustrated catalogue just issued represents some very good specimens.

AMONG the cars which figured at the start of the run to Southsea on Saturday last was a new vehicle in the form of a miniature brougham—the latest production of Stirling's Motor Carriages, Limited. The motor and mechanism of the car is identical with the Stirling Parisian phaeton, but the frame is fitted with a closed brougham body of comfortable design and finish. Another new Stirling car is a light parcels delivery van capable of carrying loads of from 5 to 6 cwt.

ON Monday evening next, the 25th inst., the Aero Club of the United Kingdom will hold a banquet in the Whitehall Rooms of the Hotel Metropole at which M. Santos-Dumont, the well-known motor balloonist, will be the guest of the evening. As we go to press (Thursday) we learn that M. Santos-Dumont arrives in London on Friday morning. He will be met at Victoria Station by the banquet committee of the Aero Club of the United Kingdom, and during his stay in London will be the guest of Mr. Paris Singer at the Carlton Hotel.

THE Motor Manufacturing Company, Limited, inform us that they are the sole agents for Great Britain and Ireland, the British Colonies and Dependencies, for the sale of the Werner motor-bicycle and its parts. Moreover, they are licensees of the patent rights for the Werner motor and parts for Great Britain



THE KOPPEL DELIVERY VAN, BUILT BY THE COMPAGNIE BELGE DES VELOCIPÉDES, LIEGE.

and Ireland and all British possessions. In order to protect the public they are arranging with Messrs. Werner that all machines made for England shall have the following inscription stamped upon the motor:—"Specially made for the Motor Manufacturing Co., Ltd., London and Coventry, sole agents for Great Britain and Ireland, the Colonies and Dependencies."

THE Brazilian Congress has voted £5,000 to be awarded to M. Santos-Dumont in recognition of the important services rendered by him to aerostatic science.

MR. F. O. SEYD, of the International Motor Car Company, Ltd., has decided to celebrate the cycle show week in a novel manner, to wit, by holding a two-days' sale by auction of motor-cars at the depot at 76, High Street, Marylebone. The auctions will be held on Tuesday and Thursday of next week, commencing at 2 p.m. About fifty vehicles, both new and secondhand, will be offered, the cars consisting of several well-known makes. A new departure that is to be made is the giving of a written guarantee with all new cars sold under the hammer, so that provincial agents who are in town next week, and who are on the look-out for bargains, would do well to put in an appearance at the auctions on the days named.

THE New Hudson Cycle Company, Limited, Summerhill Street, Birmingham, have made arrangements in their factory to turn out a large number of motor-bicycles during the coming season. They are adopting the Minerva motor, which has been



greatly improved for 1902. We shall give further details as to the construction of the machine and of its merits from a rider's point of view later on.

THE Motor Traction Company, Ltd., write:—The 6 h.p. Cannstatt Daimler voiturette "Albatross," after successfully fulfilling the conditions of the Automobile Club's non-stop run to Southsea on the 16th inst., left Southsea the following morning at ten for an actual non-stop run back to London via Petersfield, Godalming, Guildford, Ripley, Kingston, and Wandsworth. The run was most successfully made, the road wheels not once stopping between Southsea and home. We may mention that no adjustment whatever had been made from the time of leaving London on Saturday morning, the only work done being the replenishing of the petrol tank and lubricators at Southsea. On arriving in London the engine was beautifully cool, also all the other heavy parts. The solid rubber tires gave entire satisfaction. The petrol consumption for the round journey, viz. 165 miles, was 6½ gallons, cost per car per mile a fraction under one half-penny.

MR. W. M. HODGES writes:—I think it may interest some of your readers to know that of the cars which took part in, and successfully accomplished the run to Southsea on Saturday last, three at least left the builders' hands as long ago as 1897; the "Owl," "Dolores," and "Lady Mary," all being built at the Daimler Works, Coventry, during that year. "Lady Mary" made one stop in addition to those necessary for controls, this being caused by carelessness in not having petrol tank filled before the start; nevertheless, with three passengers up, the time occupied on the journey works out well up to legal limit. I wish to add that this car commenced its career as a van, and, fitted with such a body, was familiar all round London, up to the end of last year, as Messrs. Hy. Lovibond and Sons' motor brewer's dray. It was only in April last that a new body was fitted and the brewer's dray became a phaeton. I should like to know if there is in this country any foreign-built car which can show such a record.

ANNUAL DINNER OF THE AUTOMOBILE CLUB.



NEARLY two hundred gentlemen sat down to dinner in the Whitehall Rooms of the Hotel Metropole, London, on Thursday of last week. It was the occasion of the annual dinner of the Automobile Club, and under the genial chairmanship of Mr. Roger Wallace, K.C., a very pleasant evening was spent.

The toasts of the King, the Prince and Princess of Wales, and the other members of the Royal Family having been drunk with enthusiasm—for the Chairman reminded those present of the royal interest in automobilism—the toast of, "The Navy, Army, and Reserve Forces" was proposed by the Hon. J. Scott Montagu, M.P., who referred to the interest that was being taken by the War Office in automobilism, while in the development of the submarine, which would play a large part in the naval warfare of the future, the experience of the motor-car builder would be valuable. In Germany, too, the Emperor recognised the importance of the automobile in military affairs.

Colonel Elmslie responded, and said that two great points had been brought out in the war. One was the great extension of front, and of the area occupied by operations, owing to the long range of modern weapons. Our own country was too small for military automobiles, because the operations were so limited that very often a horse could do all that was required. But where there were fronts of 40 to 50 miles the motor-car would be very useful. In the future a great deal of the distribution of the stores would be made by self-propelled vehicles. It could not be expected that any sudden adoption would be made, but experience was being gained, and members of the Automobile Club had rendered good service in that connection.

Sir Frances Jeune proposed "His Majesty's Ministers." Automobilists did not desire to plough in any furrows; they had no interest in "the shadow of independence" excepting they desired to claim as much independence for themselves as possible; they had nothing to do with "obstruction" except that sort of obstruction only too common just now. Several members of the Government had manifested great interest in automobilism. The other day he had the pleasure of taking Mr. Ritchie for a ride on his car, and he seemed very desirous of going at a high rate of speed. They owed to the present Government the charter of their liberties. Although many of those present owned cars, there were many who owned horses, and therefore they did not speak in a spirit of selfishness when appealing for fair play for motorists. They did not desire to rush about the roads, but they did desire to develop this great and growing and valuable industry. If properly developed automobilism would be a source of health, interest, and amusement for many generations.

The Earl of Onslow, Under-Secretary of State for the Colonies, congratulated motorists on the fact that the President of the Local Government Board was a gentleman who was courageous and thoroughly representative of all that was English. He could not throw out a hope that the Government was likely to deal with the question of automobilism at an early date. There was a great deal of prejudice throughout the country, and that would have to be dispelled before they could fairly ask the Government to deal with the matter. That work was being done by the Club. A full discussion in Parliament would enable them to place the facts before the country. They should do all they could to prevent furious driving. In France those who owned machines capable of travelling forty or fifty miles an hour had to have a number, and he did not see that they need object to that. Facilities should be given for the training of horses to regard the motor-car with indifference. He regretted the action of his brother magistrates of Surrey, and hoped more reasonable action would soon be taken in that county.

The Right Hon. Henry Chaplin, M.P., proposed the toast of "The Automobile Club and its Affiliated Clubs." He regretted to hear there was little chance of the Government dealing with the question during the coming session. But if the Club would exercise its great influence, the Government would probably recognise the great importance of the question. Prejudice had been aroused by the want of consideration which some drivers of motor-cars had shown to other users of the highway. This was especially the case in the north of England. Recently he was on a car the driver of which showed every consideration to those in charge of horses, and, although they stopped several times, they performed a journey of fourteen miles under three-quarters of an hour. Motor-cars would play a part in the housing problem, and also in the development of agriculture—the largest and the least prosperous of our industries. As the author of the regulations under the Act of 1896, he reminded them that the conditions were different then from those of to-day. No new invention had ever developed with the same startling rapidity as the motor-car since 1896. Then the highest speed was 16 miles an hour; in 1900 it was 53½ miles. The regulations may have been proper at that time, but they were not equal to the requirements of the present day. With regard to the future, he agreed that the rules as to passing persons on the road were adequate, but he was not quite satisfied with the rules as to turning corners. But the chief difficulties centred round the question of speed, and here he asked motorists to agree among themselves. If people wanted to travel 60 or 70 miles an hour they should construct motor roads for the purpose. Where there was a clear and open road a speed of 20 or 25 miles an hour might properly be permitted. If that was so, the present limit of 12 miles would have to go. Everyone knew it was broken. In its place he would insist that every

motor-car constructed to go beyond that pace should be capable of effective identification, or registering and numbering by counties. He would also like to require a certificate of efficiency for the drivers, and for that they had a precedent in France. With regard to safety, an electric brougham was safer than one that was horse drawn. Either the matter would have to be left to the provisions of the Highways Act or some specific limit of speed imposed. He would prefer the first alternative. Much would depend on the good feeling of owners and drivers of motor-cars, and he hoped they would be loyal to the new and promising method of locomotion coming into vogue in this country.

Mr. Roger Wallace responded to the toast, and said the speech of Mr. Chaplin, who was the author of the regulations, showed great-mindedness. All they asked was that the Act of 1896 should be amended by striking out the speed limit. They would be content to rely on the common law if the common law was always the same. Motorists wanted to know what they might do as well as what they might not do. They desired to assist those who had to administer the law, and the Automobile Club had nothing to do with efforts of a contrary kind. Reverting to a recent visit to the United States, Mr. Wallace said the American Club had adopted a similar attitude towards automobilism that they had.

Mr. Mark Mayhew, L.C.C., proposed the health of "The Visitors," for whom Mr. J. Williams Benn, L.C.C., responded in a witty little speech.

EDINBURGH AUTOCAR COMPANY, LIMITED.

At the second annual meeting of the Edinburgh Autocar Company, Ltd., shareholders were called upon to decide whether they desired to have the company at once wound up, or were prepared to put in further capital to conserve the business and its prospects. Mr. Edwin Adam, in moving the adoption of the report, said at the last meeting the directors were instructed to realise the assets, and they had explained why this had not been carried out to the full extent. They had sold all their cars with the exception of seven, which were at the present time doing good work for the company. The company was having three times the number of applications for hires of the cars than they could supply. The Board had not been able to sell the stock as a going concern, and it was for that meeting to decide whether they should proceed to extreme liquidation. Mr. Hay, of the Shareholders Advice Committee, submitted the report of that body, and in doing so he said they were still of opinion that the company could still be made to pay, with a little new capital. He moved that they resolve to adopt the committee's recommendation, subject to the £5,500 of new capital being subscribed within a month, and that they advise the directors to take what steps they thought proper for raising the capital; and, failing its being raised, resolve that the company be dissolved, and the directors take all necessary steps to carry out the liquidation. In answer to a shareholder, Mr. Hay stated that the cars were working at a profit from the 12th April till the end of June. Mr. T. White seconded the adoption of the report. After a discussion, and on a vote, the motion was declared carried by a large majority.

BAYLEY'S LIMITED. v. MOTOR-CAR COMPANY, LIMITED.

Mr. Justice Ridley, sitting without a jury in the King's Bench Division, heard this action, in which the plaintiffs sought to recover judgment for the balance of an agreed price for two steam motor trolleys built by them to the order of the defendants. Plaintiffs also sought to recover the price of extra fittings and packing, and £1 per week for the storage of each trolley. The trolleys were ordered by the defendants for a Mr. R. O. H. Beamish, who wanted them for the transport of tea in Ceylon, and the price was to be £700 per wagon, less 10 per cent. discount. £420 was paid with the order and Mr. Beamish paid another sum of over £400, and the balance was to have been paid when the wagons were ready for delivery. Plaintiffs said Mr. Beamish, as agent for the defendants, ordered extra sets of gearing and packing, but defendants denied that Mr. Beamish acted as their agent. Plaintiffs claimed £170 balance of purchase money, £140 which had been agreed to be discount, but which plaintiff alleged was not earned, as the contract was not completed by defendants within the proper time, and £14 for storage—£14 having been paid into Court for storage at the rate of 10s. a week. Evidence having been given on both sides, Mr. Justice Ridley said it might be the fact that Mr. Beamish was not the agent of the defendant Company in ordering the extras, but he was held out to be, and was understood either to be agent or to be identical with the defendant Company. He therefore thought that the action was maintainable for the goods ordered by Beamish. He was of opinion that the proper sum to be awarded to the plaintiffs would be £223 5s. 10d. on all the claims, and he gave judgment for the plaintiffs for that amount, with costs. An application for a stay of execution was refused.

SPACES AT THE MOTOR-CAR EXHIBITION.

In the Chancery Division of the High Court of Justice, last week, Mr. Justice Joyce had before him a motion in the action of Farman v. Cordingley and Company, by which the plaintiff sought an injunction to restrain the defendants from letting space at the forthcoming Motor-car Exhibition at the Agricultural Hall, which plaintiff alleged had been let to him. Counsel stated that every material allegation of fact on one side was point blank denied by the other. Under these circumstances it was

arranged that the motion should be set down immediately for trial, with witnesses, and that an application should be made to advance the hearing.

MOTOR-CAR ACCIDENT AT PERTH.

ON Saturday night a serious motor-car accident occurred at Perth, whereby a lad lost his life and four other persons were injured. It appears that about nine o'clock a motor-car, driven by Thomas Gourdie, a blacksmith, and belonging to Mr. John M'Arthur, spirit dealer, Perth, was proceeding up High Street, when, it is stated, without warning, it turned into Scott Street, dashed into several persons and injured five. The car was at once surrounded by several hundred people, who refused to let it move on. A constable had to mount the car, and escort the driver along the street. James Cross, 11 years of age, son of a labourer, who was removed to the infirmary in a dying condition, succumbed to his injuries half-an-hour after admission. Wm. Fyfe, and his daughter, Christina, were also removed to the infirmary, the former suffering from a deep cut at the back of the head, and the latter from severe injuries to back and limbs. Daniel Foley (10), son of Stephen Foley, sanitary officer, was taken home, his injuries consisting of bruises and severe shock. James Henderson, vanman, was cut about the head, but was able to walk home. At Perth Police Court, on Monday, Gourdie was charged with having on Saturday night driven a motor-car against a lad named James Cross and four other persons, killing Cross and injuring the others. On the motion of the Burgh Prosecutor, accused was remitted to the Sheriff, who sent him to prison pending further inquiries.

BEHIND THE HEDGES.

Now the leaves are turning brown,
Mark the scorching motor down,
Behind each hedge are hiding "peelers,"
Watching for the fast four-wheelers,
With penny tape, and "Waterbury" nobby,
And whistle, too, the sly old "Bobby,"
Disguised as a yokel, 'tis a fact,
Waiting to catch 'em in the act.
If they come along too quick,
He'll "nab" them by this nasty trick;
But if the car is going lame,
"By Jove!" he'll have him just the same.

J. R. E.

ORIENT EXPRESS CAR SYNDICATE v. HARRIS.

In the King's Bench Division, last week, the plaintiff company claimed to recover from Mr. Frank Harris £60, the balance of £160, the price of an Orient Express motor-car supplied to him. Mr. Rose Innes said the other day an application was made for the adjournment of the trial, and an affidavit was produced to the effect that defendant was ill and unable to attend. The application was not acceded to, and he had no further affidavit. Since then, however, the defendant, acting upon his doctor's advice, had gone south for the benefit of his health. He therefore asked for a postponement for a few days. Mr. Justice Ridley: The defendant has gone away in defiance of the order of the Court, and I cannot postpone the case. What I did was to refuse the application unless the doctor came to support it, but the defendant has gone away in the teeth of that order, and he must take the consequences. Evidence was then given of the sale of the motor-car to the defendant for £160, he paying £100, and undertaking to pay the remaining £60 in three months, and there was no ground, it was said, for the suggestion made on the pleadings by the defendant that the car was not made of good material or in a workmanlike manner. Verdict and judgment were entered for the plaintiffs for £60 on the claim and also on the counter-claim.

MOTOR-CYCLE WARNINGS.

At the Rotherham West Riding Police Court, Arthur J. Blyde and Hubert Hobson, of Sheffield, were summoned for riding motor cycles without giving warning. Mr. Gichard defended. John William Johnson, of Masbro', said, that on 10th October, between three and four p.m., he was driving towards Wickersley, and in the direction of Maltby. The defendants passed him on motor-cycles, and did not ring an alarm. His horse was frightened and jumped to the left. He afterwards spoke to the defendants, and Blyde said he could not ring an alarm as his bell was broken. The defendants were at the time doing something to their machines. He told them that if he saw a policeman he should report the matter as he might have been thrown out of the conveyance and injured. Mr. Gichard said there seemed to be an impression that when motor-cycles or light locomotives travelling on the road were approaching a horse it was necessary some noise should be made by bell or other alarm. He read the order of the Local Government Board under the Locomotives on Highways Act, 1896, sub-section 7 of Article 4, by which it was provided that a driver, whenever necessary, should sound a bell or other instrument. It was therefore a question of what construction the Bench would put upon the words "whenever necessary," and he argued that in this instance the circumstances justified the defendants in not sounding a bell or instrument. Blyde was called, and denied that his bell was out of order. He said that he thought the persons in the vehicle saw his approach, and he therefore refrained from sounding

the bell when close to the conveyance lest doing so might startle the horse. He did not believe the pony shied, and did not see it. Blyde was fined 25s., including costs, and Hobson was dismissed.

UNLICENSED.

At Highgate Petty Sessions Leopold Hedgecock, of Hornsey, was summoned by the Inland Revenue for keeping a carriage without a licence on September 10th. Defendant was seen in charge of a motor-car on that day, and inquiry revealed the fact that he had no licence. The licence was taken out the next day. The defence set up was that the car was not purchased until September 13th, and an invoice in support of that fact was produced. On September 10th defendant was having a trial trip on the car. The Bench dismissed the summons.

ATTACK ON A MOTOR-CAR.

At the Sheriff Court, Dundee, Alexander Latto, farm servant, Newmiln, was charged with having, at Balboughty farm, steading on November 2nd, assaulted Captain Ralph Slazenger and Frederick Jenkins, motor-car driver, residing at St. Martin's Abbey, by striking the Captain with his fists and trying to pull the driver off the car. He pleaded guilty. The Sheriff imposed a fine of 10s., with the alternative of seven days' imprisonment.

A FEW DON'TS.

THE following rules for the operation and care of a petrol car have been compiled by J. W. Packard, of the Ohio Automobile Company. They will be incorporated in a book of instructions soon to be issued by that company:—Don't forget to turn on petrol and spark before attempting to start. Don't forget to turn oil on and close compression after starting. Don't try to run carriage without oil in oil cups. Don't try to run without water in tank. Don't try to run without petrol in tank. Don't leave car to freeze in winter. Don't jerk in your clutches; bring them up gradually. Don't change gears on hill until car is nearly to a standstill. Don't start down hill at a rapid gait and then jam on brakes. Don't try to turn corners rapidly with brakes on. Don't forget to turn off oil cups when shutting down. Don't neglect to turn off petrol at night. Don't tighten clutches so that they drag or bite. Don't pull carburettor to pieces without carefully noticing how it is put together. Don't screw up governor contact points too tightly. Don't tinker with adjustments of governor, or if you should, don't advance spark from centre point when turned over by hand. Don't neglect to keep contact points clean. Don't allow any bell-hanger or cycle repair man to add improvements to your car. Don't use cheap or poor lubricating oil. Don't let your engine race at any time or run at excessive speed when using slow speed gear. Don't leave your car unattended with engine running. Don't expect that all you will have to do is to pull the lever. Learn to thoroughly understand the mechanism and adjustment of your machine.

FURIOUS DRIVING CASES.

At Brighton, Max R. Lawrence, of Birmingham, was summoned for furiously driving a motor-car in Gloucester Place and St. George's Place on the 20th ult. Defendant did not appear, but sent an apology for his absence and admitted that he was travelling at a fair pace. The chief constable invited the magistrates to inflict such a fine as would have a salutary effect upon other persons. He regretted to observe repeatedly that motor-cars were driven at a furious pace, especially on Sundays. Defendant was fined £5 and costs, or a month's imprisonment.

In Aberdeen Sheriff Court, William Hampton, motor-car driver, of Maryculter House, was charged with having, on October 25th, when in charge of a motor-wagonette, near Monearn House, failed to stop when asked to do so, and further, with driving at a greater speed than twelve miles an hour. Mr. Ruxton intimated that he would advise Hampton to plead guilty to the second charge, and the Fiscal, in the absence of the chief witness, withdrew the first charge. The Sheriff imposed a penalty of £6.

At Highgate, Henry Turner, of New Southgate, was summoned for riding a motor-car furiously and for not having a light upon it. Police-constable 423 Y stated that he saw the defendant riding a motor-tricycle by the Colney Hatch Asylum at 10.30 on the night of the 30th ult. He was riding at sixteen miles an hour, and had no light. Another constable gave similar evidence. The defence was that the light went out and the defendant was going for some matches. The speed did not exceed ten miles an hour. Mr. Reynolds fined the defendant 40s. for being without a light, and dismissed the other summons.

At Carlisle, William Wilmshurst, motor-car driver, employed by Mr. Claude Lowther, M.P. for North Cumberland, was fined £5 and costs for driving a motor-car at greater speed than twelve miles an hour. For the defence it was contended that a policeman looking out of a narrow window could not possibly have identified the defendant or estimated the speed, if it was true that it was going at twenty miles an hour.

Reported above are 4 prosecutions for furious driving. In 1 case the summons was dismissed, while in 3 cases fines amounting to a total of £16 without costs were inflicted.

POINTS FOR THE PERSECUTED.

MR. STAPLEE FIRTH has had many encounters with magistrates and others with regard to automobilism, and his experience should be very serviceable to our readers. Here are some useful precautionary hints for the persecuted motorist which are recommended by the well-known legal motorist:—

Do not lose your head, and do not argue with the constable. Ask him why you were stopped and the specific nature of the complaint against you.

If his complaint, whether as to furious driving, exceeding the legal limit, or whatever its nature, is untrue, make an instant denial.

If the constable complains of excessive pace, ask him how he calculated the speed. If by a watch and landmarks, note the kind of watch, immediately identify the landmarks, and measure the distance.

The distance may easily be determined by running the car between the landmarks with a handkerchief or a white rag tied on the rim of the wheel. Then measure the outer periphery of the wheel and multiply by the number of revolutions between the two points.

If the watch is of the ordinary type, the constable should also be asked where the second hand was when he commenced to time, and where when he finished.

If stopped by a man in plain clothes claiming to be a constable, who, however, is not accompanied by a man in uniform, a motorist is perfectly justified in refusing to discuss matters with him unless he is able to show some emblem of authority.

If it is felt that it is a case of police oppression, it is advisable to obtain the names and addresses of any bystanders who may have witnessed the act complained of.

MESSRS. DURKOPP AND Co., of Bielefeld, Germany, are introducing a new light car fitted with a vertical two-cylinder motor. The general arrangement adopted is very similar to that of the Panhard and Daimler vehicles, the car, with tonneau body, has a neat appearance.

SOME remarkable motor-car racing was witnessed on Saturday last in the presence of 30,000 spectators on the boulevard running from Prospect Park, Brooklyn, to Coney Island. This road was closed to the public in order to give the competitors a clear course. It is one of the finest tracks in the vicinity of New York, straight and flat as a billiard table, and it had been put in specially fine condition for the races, which were held after a parade of upwards of 100 automobiles. Two miles and a half of the roadway were used by the competitors—one mile to get under headway and half a mile to slow down. The rules permitted two trials by each competitor. M. Fournier, on his 40 h.p. Mors, made the mile in 52 seconds. Trembling with excitement, he declared that he could beat that, and did so by one-fifth of a second. Mr. Foxhall Keene, driving a similar car, made the mile in 54 2-5 seconds. Mr. Albert Bostwick, on his 40 h.p. Winton, made it in 56 2-5 seconds. Mr. Riker made the mile in 63 seconds. The world's record for an electric car was made by Mr. Davy, and that for a steam car was 75 seconds for one mile, done by a 4½ h.p. Locomobile.

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THE Motor-Car Journal.

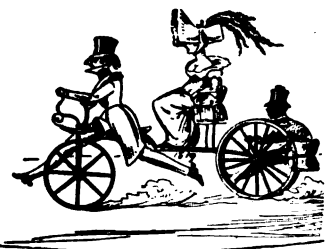
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COMMENTS.



M. SANTOS DUMONT was entertained at a banquet by the Aero Club of the United Kingdom on Monday last. The chair was taken by Major-General Lord Donald, and a large and influential company was present. After the loyal toasts had been honoured, the chairman proposed the toast of "The Republic of the United States of Brazil," to which the Brazilian Minister replied. Mr. R. W. Wallace, K.G., then proposed "The Naval and Military Forces of the Empire." Sir C. Champion de Crespigny responded for the Navy, and Colonel Templer for the Army. The Chairman, in proposing the health of the guest of the evening, said they were there that night to celebrate an event in the history of the world in the person of their honoured guest. For the past century those who had made a study of aeronautics had endeavoured to solve the problem of how to steer a balloon against the wind, and a great amount of brain power had been devoted to its solution. Many clever men had endeavoured to solve it, but it had been left to M. Santos Dumont to illustrate by his remarkable and daring feat the solution of the problem. He felt sure that their guest was far too generous a man to overlook the efforts of others in the direction in which he had proceeded so successfully, and that more especially he would give credit to that far-seeing and illustrious Frenchman Henri Giffard, who in 1851 tried to navigate a cigar-shaped balloon by means of a steam engine against the wind. He would also recognise that had it not been for the great advancement in the construction of light and powerful engines suitable for motor-cars, the propelling power which he had so ably utilised might not have been otherwise accessible. M. Santos Dumont's feat marked a milestone on the onward march of the world. The man who accomplished it they admired for his successful scientific endeavour, for the splendid courage which he had so often displayed, and he could assure him that not only those in that room, but the whole British people earnestly hoped that his future efforts might be crowned with the success he so richly deserved.

M. Santos Dumont's Promise.

M. SANTOS DUMONT, who met with a most enthusiastic reception on rising to reply, said:—I wish to thank you for so kindly conferring on me the title of honorary founder and member of the Aero Club of the United Kingdom. When I return to London in a few months I hope I shall find your young society in full progress. The sympathetic reception which you have accorded to me will encourage me to return in the summer, after my aerial voyage from France to Corsica. I shall then be happy to make some trials in a steerable airship above London, and thus to contribute my modest part to the work of a society which will count among its members such distinguished aeronauts as Colonel Templer, Mr. Charles Rolls, the youngest and at the same time the oldest of your aerial pilots, and such sportsmen as Mr. Wallace, the Chairman of the Automobile Club, and Mr. Paris Singer, one of the first pioneers of automobilism in England.

A Visit to Aldershot.

THE Aero Club arranged a visit on Wednesday to the Army Balloon Factory at Aldershot, a special authorisation having been obtained from the War Office to that end. M. Santos-Dumont, the first honorary member, was driven down by the Hon. C. S. Rolls in his 20 h.p. Panhard, and they were accompanied by other "aeromobilists." Arrived at Aldershot the party were escorted over the factory by Col. Templer and Major Trollope, and subsequently a captive balloon was sent up with M. Santos-Dumont on board. The Hon. C. S. Rolls then ascended with the operator, the balloon being cast off, but a telegram received later stated that owing to the breaking of a valve the balloon dropped at Elstead, near Petersfield, after a somewhat exciting descent. M. Santos Dumont was driven back to town by Mr. E. M. C. Instone on a 15 h.p. M.M.C. car.

The Speed of Motor- Cars.

AT a meeting of the County Councils Association on Wednesday, at the Westminster Guildhall, a resolution submitted by the Lancashire County Council in regard to the speed of motor-cars was, after amendment, carried. The resolution as passed set forth that the general law for all vehicles, as extended by the special regulations issued requiring the drivers of motor-cars to stop on the request of any police-constable or any person having charge of a restive horse, if scrupulously observed and rigorously enforced, was at present sufficient to secure the public safety, subject to drivers' licences and numbered cars.

The Old Bath Road.

THE Local Government Act of 1894 reduced the highway authorities in England and Wales from 7,000 to 1,879, and the effect was quickly seen in an immediate improvement in the standard of highway maintenance. We believe that if a further reduction in the number of such local authorities were made, there would be further developments. The result of having so made authorities responsible for the public highways is that the main arteries are really unconsidered, and travellers have to be satisfied with the old high roads that meander through decayed villages and do not touch great towns. The trips which the King has lately taken from London to Windsor on his motor-car have drawn attention to the old Bath Road, which goes through a narrow neck at Kensington to another at Hammersmith. Mr. W. Rees Jeffreys suggests that a new road to Windsor should be made starting near the terminus of the Tube railway at Starch Green—where the Goldhawk Road takes a sharp bend to the south. This would go due west and strike the old Bath Road between Colnbrook and Slough.

Proposed New Road.

THIS idea, if carried out, would relieve the congestion of traffic on the old Bath Road and also on the old Oxford Road, and it would also open up new suburbs for the overcrowded dwellers in the great city. But it would also be useful in admitting of an experiment by allowing of the provision of three tracks—one for electric trams, a second for motor-cars and bicycles, and a third for vans, carts, etc. We have made improvements in our methods of road locomotion, but full advantage

age of that development cannot be taken until new highways are made on lines that recognise the new conditions of traffic. Hence we welcome the contribution that Mr. Jeffreys has made in the *Surveyor*, and hope the idea will not be readily forgotten.

Prejudice in Bucks.

LAST week we referred to the discussion with regard to motor-cars, which had taken place at a meeting of the Buckinghamshire County Council. This county has been noted for its antipathy to new ideas. A century ago one of the Bucks surveyors said it was impossible to have good roads without ruts, and the county further distinguished itself by opposing the introduction of railways so successfully that many parts of the county are, even now, badly served. The prejudice against motor-cars is therefore not so surprising; but it is nevertheless lamentable.

Motor-Buses for Birmingham.

MR. DAVID BARR, of Cherry Street, Birmingham, is advocating the institution of a service of motor-omnibuses in that city. There is a great deal of opposition to some proposed new tram routes, and hence the suggestion for motor-vehicles. Here are some very good reasons for the innovation:—(a) It will save a heavy expenditure of capital in laying down the rails; (b) it will not interfere so much with ordinary and carriage traffic; (c) there will be no risk of cycle wheels getting into the rail grooves; (d) motor-omnibuses could run where the street is not wide enough for tram rails; (e) the route could also be easily diverted, or extended, when necessary; (f) there would be no risk of cruelty to animals; (g) there would be the saving of wear and tear of the roads from horses' hoofs; (h) it would keep the streets much cleaner and save considerable expense in sweeping up horse manure; (i) motor-omnibuses could be worked at less expense than trams or horse vehicles.

"Motors 11 P.M."

SUCH will no doubt shortly be the foot line of many an invitation card issued from Belgravia. Meanwhile the hostess in search of a novel form of intimating the hour at which she wishes her fashionable crush to disperse has been anticipated. To the Battersea branch of the Amalgamated Society of Engineers, who hold their fifteenth annual concert at the Grand Hall, Battersea, this (Saturday) evening, falls the honour of having first rung the changes on the time honoured formula. The sub-heading to this paragraph is to be seen at the foot of the posters announcing the event.

The Automobile Club of South Africa.

ONE of the most recent additions to the clubs at the Cape is the Automobile Club of South Africa. At a meeting recently held in Cape Town, called for the purpose of forming a club, it was decided to constitute one with the title named above. The following officers and committee were elected: Vice presidents Messrs. J. Percy Fitzpatrick, H. M. Arderne, and A. T. Hennessy; hon. secretary and treasurer, Mr. A. C. Fuller; committee, Dr. Arderne Wilson, Messrs. J. H. Shillito, B. Bartholomew, and W. M. Jenkins. The election of a president and fourth vice-president was postponed till later. It was resolved to adopt a constitution and rules on the basis laid down by the Automobile Club of Great Britain and Ireland. The aim of the Club is to promote the development of motor and allied industries in South Africa, to encourage and foster automobilism, to give members facilities for storing machines, obtaining requisites, and becoming thoroughly acquainted with the mechanism and proper working of motors, and perform the ordinary functions of a club. We wish the new association every success, and are glad to learn that already twenty-six members have been enrolled. Of these about sixteen own motor vehicles, the number including a 12 h.p. Daimler, an 8½ h.p. Decauville, a 6 h.p. Benz, three 4½ h.p. De Dions, and several Locomobiles and motor-cycles.

Round the World.

THE "circumnavigation" of the globe is about to be undertaken by Mr. E. V. Wilbern, of Cincinnati, who says he will leave New York next spring, and circle the globe on a motor-vehicle in three hundred days. He will go by steamer to a French port and cross France, Germany, and Russia, and taking advantage of the Trans-Siberian railroad, will reach the Pacific Ocean. After touring Japan he will cross the Pacific to California, thence returning home. Should Mr. Wilbern favour England with his presence, we shall be glad to welcome him in Shoe Lane.

Motor-Omnibus Services.

THERE is a great responsibility placed upon the shoulders of those who are fostering schemes for motor-omnibuses in connection with municipal enterprise. So far the experience has not been wide; hence any slight hitches are apt to be magnified into great troubles. At Southampton the attempt has been made to run a service with only one omnibus, with the result that the Corporation are now anxiously awaiting the arrival of two more, so that an adequate service can be established. Mr. A. A. Swinton, who is promoting a tramway scheme at Scarborough, believes that motor-cars will be the method of street locomotion in the future, and other authorities are similarly inclined. Liverpool is probably one of the few cities of this country where the complete tramway system will militate against any general adoption of the automobile as a public-service vehicle.

A Claim for Damage.

WHILE motoring on the main road from Farnham to Bagshot recently Earl Russell came upon a long patch of stones freshly put down. They had sharp edges, were spread to a depth of six to eight inches, and covered the entire width of the road. He was compelled to drive his car over these stones and although the tires—which cost £50—escaped puncture the car was caused (owing to the depth and looseness of the stones) to swerve and run into a steam-roller, which was employed in rolling a portion of them. The front axle was damaged and a claim will be made against the County Council in due course. We wonder that the Hampshire authorities do not follow the custom of those in Surrey, and roll one side of the road before putting stones down on the other. This would certainly be to the advantage of traffic—whether horse-drawn or self-propelled.

Graphospasm.

DRIVING motor-cars is said to have given rise to attacks of graphospasm with many of the symptoms of scrivener's palsy, or writer's cramp, in the United States. Some cases were examined by a physician, who discovered that the principal muscles of the forearm, the flexor profundus digitorum, the flexor sublimus digitorum and the thumb muscle, the flexor longus pollicis, showed signs of contraction. All of which is sad for the motorist but profitable to the physician.

Loyalty to the Trade.

DESPITE the blandishments of those who would seek to disturb the mutual loyalty of the motor-car trade there seems a really earnest desire to maintain the spirit of the resolutions adopted at representative gatherings of the industry. Only a few firms have been represented at the cycle shows held during the past week, and although these will, of course, be ineligible for exhibiting at the official show that exhibition will be fuller and more complete than ever before. More than 150 firms have entered for the Automobile Club's exhibition at the Agricultural Hall next year—so that the success of that enterprise is already assured.

**"One Crumpled Rose
Leaf still—"**

AUTOMOBILISTS have many grievances to ponder over, the spread of tram-lines being a minor, but not altogether negligible one, and doubtless they look forward to the time when they will be able to drive their flying-machines where, with apologies to the poet, "bobbies cease from troubling, and roadmen are at rest"; but it would appear, according to M. Santos Dumont, that even "the way of a bird in the air" is not altogether devoid of inconveniences from a lower sphere. His particular bane is overhead wires, especially "live" ones, which, he fears, will be some obstacle to his promised evolutions over the metropolis. It is open to question whether even with a damp guide rope a live wire could do much harm to an otherwise insulated aerostat; but it may be recalled in this connection that the spread of telegraph wires spoilt a sport that must have been the nearest approach to present-day automobilism available in the early years of the last century, namely, the use of kite-propelled carriages. These attained speeds of from twenty to twenty-five miles an hour under favourable circumstances—this about 1825!—could sail fairly near the wind, and were used, among others, by the then Duke of Cambridge. Moreover, there were points about some of them that it is a pity to have lost sight of, as, for instance, a combined ground-brake and devil, hinged just back of the king bolt (of course, they steered with a single-pivoted axle), and extending nearly the length of the car. Had overhead wires not been an effective bar to their further development, many points in motor-carriage work would have been readily settled by the time the oil-engine came to make use of them.

**Milk by
Motor-Cars.**

THE suggestion which we have often made in these columns that the motor-car might be the means of conveying milk direct from the producer to the consumer seems at last to have attracted the attention of those most concerned. At a recent meeting of the Cheshire Milk Producers' Association, the idea was received with warm approval. At present, dairy farmers get barely one-half of the prices paid by consumers for milk, and even making full allowance for the toll levied by middlemen, the disparity seems to be unnecessarily great. The use of the motor-vehicle would establish direct touch between producer and distributor, while, at the same time, largely reducing the amount of handling during transmission. When dispatched by railway, milk cans have first to be conveyed to the nearest station, then placed on a train, next delivered to the consignee, and, finally, distributed among the retail customers. At each of these several stages there is necessarily some increase of expense, the chief portion of which has to be borne by the producer, as he undertakes free delivery to the consignee.

**Automobiles for
Agricultural
Purposes.**

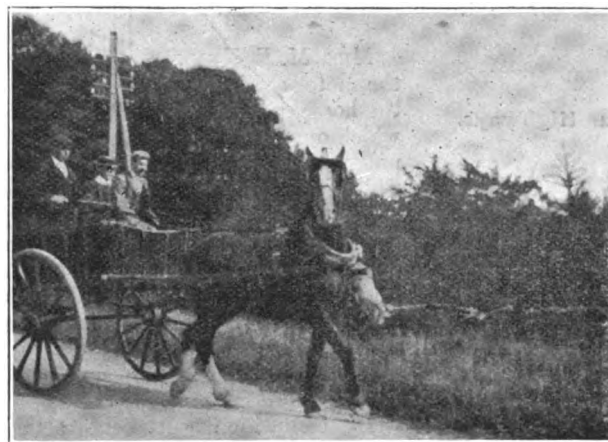
A FRENCH contemporary gives an interesting account of some experiments made at Vitry-sur-Seine with a motor-plough by a company which has for its object the introduction of self-propelled agricultural implements. The machine used carried six ploughshares, which penetrated to a depth of 15 to 20 centimètres. The earth selected to experiment upon was heavy and sticky as a result of days of rain, and was also overgrown with rank weeds, the roots of which tended to clog the shares. In spite of the double difficulty thus presented the plough, with its 8 h.p. two-cylinder Pygmée motor, did remarkably well. The adherence of the motive wheels was perfectly assured by the cross pieces with which the felloes were provided, and which acted on the soil as a cog does to a toothed rack. On the whole the experiment was regarded as highly satisfactory, though it is admitted that some improvements might with advantage be made in the attachment of the plough to the motor. French agriculturists of advanced ideas are looking forward to the time when they will plough their land with an implement driven by alcohol which it will help to cultivate.

**An Invalid's Motor-
Car.**

AN ingeniously-contrived motor-car has been visible recently at Cobham. The owner, Herr E. La Pierre, a well-known character at Wiesbaden, was thrown from his horse while a lieutenant in the German army fifteen years ago, the accident resulting in the loss of the use of both legs. The car in question, of which we give an illustration on page 707, was built by Herr Fritz Scheibler, of Aix-la-Chapelle; it is of 6 h.p. and has a movable floor, which is not only much lower than usual, but is also pivoted in such a way that it can be dropped at one end until it touches the ground. Herr La Pierre, who uses a specially-made chair running on rubber-shod wheels, is wheeled up to the back of the car, and he and the chair are then drawn into the vehicle by a chain and pulley. The floor itself is then wound into a horizontal position, and the invalid sits quite comfortably, with writing desk before him and an awning overhead. In this manner he travels long distances by road. He has recently toured through Holland and after visiting England, set out by road for Berlin.

**A Horse that doesn't
like Motors.**

THE heading "The horse that didn't like motors," which prefaced our report in a recent issue of a Brighton action, having attracted the attention of Mr. E. M. C. Instone, he sends us the photograph which we now reproduce. It was taken last August by Mr. Instone from his M.M.C. car when drawn up by the roadside near to Andoversford, and it makes a capital picture of "the horse that doesn't like motors." "What is it?"



thinks the noble steed, as with head thrown up and uneasy steps he approaches his mechanical rival and, "what's it got in its inside to make it shake and hum like that?" No satisfactory answer being forthcoming to all these inward questionings the poor "gee gee" becomes still more perturbed, and it requires all the persuasive power of his driver to coax him by.

Duplicate Parts.

IN the desire to carry as little as possible on their cars, motorists often do not carry enough to help them when break-downs occur. And such accidents will happen, even with the most modern motor-car. A good assortment of small duplicate parts should always form part of the equipment on every journey, and sad must be the plight of the man who tempts fate by venturing on a long trip in a new country without a few spare parts. Every novice should first learn what extra nuts, washers, etc., should be carried—and never venture out without them. The man who has had experience in motoring is never at a loss for these; it is the novice who often learns their importance—when they are left at home.

The French Races.

It is generally considered now that the recent decree concerning motoring in France will not hinder the holding of these great automobile races which have become almost classic. The only changes made are that special permission must be got from the authorities beforehand, and where the course lies through more than one department, permission must be obtained from the Minister of the Interior. The wisdom of allowing these contests on the roads is very questionable, but it is an undoubted fact that they have helped to develop the motor-car in the most rapid manner possible. It was the fierce competition of the race path which encouraged bicycle builders to keep constantly striving after lightness and strength. Actual testing in races has taught the makers how fallacious were the text-book theories on the strength of materials. It is so, in a way, too, with motoring. The French makers in their fierce desire to win races never cease to seek out fresh improvements, whereby the power of the engines can be increased or the weight of the car decreased. There is room for immense improvement yet in the present system of power transmission. The maker who wishes to win a big race must look after every ounce of power. He must also pay increased attention to every vital part, for failure in any one of them would be fatal. The test of running a car at express speed over hundreds of miles of road, and even maintaining high speeds over the vilest *parcours*, is absolutely the hardest trial of a vehicle. The strains and vibrations are terrific; and the results are of immense value to the makers. A few days of such trials teach more than months of ordinary testing. The trials are inconvenient to the public, but the French are too wise to close down an industry giving employment to many thousands by any harsh restrictions.

Our Highways.

MRS. M. E. KENNARD, whose love of the motor-car is as strong as her love of the horse, points out the various uses to which our public thoroughfares are often put without hindrance from the police. Children frequently use the main road as a public playground, vehicles are frequently left unattended, sleepy carters often allow their horses to draw their carts along without any regard to regulations as to roads. Surely if the police would take these and kindred matters in hand they would be rendering a greater public service than in harassing the devotees of a new industry which is destined to prove a valuable national asset.

In a Drain Pipe.

IN connection with the attack on motoring in Surrey, we notice that the *Express* declares that policemen have been hiding in drain pipes in order to catch motorists. Whether this is to be taken literally we hardly know, but it is certain that some very un-English practices are being resorted to in the county. But while searching for a few who may commit a technical offence, the police are apparently ignoring the many criminals at large. And surely that is where the legitimate function of our county constabulary is most concerned.

Loss to Surrey.

Truth brings out some strong adjectives in referring to the fact that the Automobile Club avoided Surrey on the occasion of the annual run. To capture a motorist, says our contemporary, "the police go more elaborately to work than they would to capture a gang of forgers, long-firm conspirators, burglars, or pickpockets." The local tradespeople cannot appreciate the "asinine attitude of the county potentates," for the loss to hotel-keepers on the route must have been pretty considerable. A run such as that of the 16th inst. circulates hundreds of pounds, and by the stupidity of its magistrates Surrey was that much the poorer when the motorists went to Southsea, *via* Basingstoke and Winchester.

A Needful Lesson.

THE temporary boycott of Surrey towns on the Anniversary Run has not been without its effect, and we heard much lamentation on the subject in Guildford and Godalming, with severe criticism of the police methods that brought it about. Local automobilists have taken care that there shall be no doubt about the cause thereof, and it behoves them to "rub it in" as much as possible while the opportunity occurs. The hotel interest has a good deal of original prejudice to get rid of in the matter of motoring, as is only to be expected, but the excellent arguments for doing so are having a rapid effect, as may be deduced from the openly expressed condemnation of the local magistracy and police which we have heard from those affected by the results of its action.

Coachbuilders Awakened.

It has taken the coachbuilding trade—with the exception of a few enterprising firms here and there—many years to become persuaded as to the possibilities of the motor-car business. Apparently there is a general awakening on the subject, and a discussion that is going on in trade circles shows that efforts are being made to enter the lists. Mr. James Young, of Bromley, Kent, suggests that a syndicate of coachbuilders should be formed for the supply of motors to its members. The syndicate would, he says, be able to obtain better terms from the makers than would individual coachbuilders. By such a combination the difficulty of providing ready cash for motors could be got over, and the syndicate and the motor makers would soon get on good terms. The fact that such a proposal is made demonstrates that wealthy people are not paying such heed to coachbuilders as was the case before the Light Locomotives on Highways Act came into operation.

Motor-Cars and Insurance.

ONE of the surest indications of the harmlessness of the automobile is to be seen in the change of aspect presented by insurance companies towards both car and owner. A few years ago there was a tendency on the part of companies to regard the motorist much in the same light as the balloonist, and to charge a prohibitive premium when including motoring amongst risks to be insured against. Statistics were wanting, and the element of risk an unknown quantity. To-day we have statistics, and, contrary to general expectation, they prove that motoring cannot be ranked amongst that class of occupations or sports labelled dangerous. The result is keen rivalry amongst insurance companies, all of whom are willing to grant for a small premium special policies covering not only the rider and his car, but indemnifying the former in the event of claims for damage from other parties. It is also worthy of note that the extra fire risk is not considered great. A slightly increased premium will cover any building in which a car is stored.

"Take your Portrait, Sir?"

WITH an alertness that does not seem natural in the case of the English photographer their brethren of the United States have utilised the motor fashion in a profitable way. Along the main roads the ordinary photographers have made special preparations for the automobilist, and, having camera ready, are able to induce many a driver to have his photo taken. The picture is produced in a few minutes, and the motorist speeds on his way again. Some of the leading *chauffeurs* have collections of photographs of themselves and cars taken in various cities, and this is becoming almost as great a craze as the picture-postcard hobby.

It has been noticed that the American motorist who pays a goodly sum for an imported automobile, no matter what its type or horse-power, immediately becomes imbued with the idea that he possesses the fastest automobile in the United States.

MOTORING IN THE FOG.

NO doubt most motorists who were out in the recent foggy weather were more or less inconvenienced thereby, but we doubt if any more so than Mr. Albert Murray, of Messrs. Pearson and Son, Limited, of Nottingham, to whose lot it fell to drive a 5 h.p. Benz from London to Nottingham, *via* Reading, during the "plague." A quarter of an hour after leaving the Metropolis he was more surprised than pleased to find himself back in the same place. Off again, and better progress was made, Hounslow and Maidenhead being soon left behind. At the latter place he failed to distinguish the tollkeeper, and quite unwillingly passed him. All went well to Reading, but as Oxford was neared the fog thickened, and a drop to second speed became necessary. By the time he had partaken of refreshments darkness had set in, but, undaunted by this, he lit up the lamps and struck out for Towcester, being bent upon getting there that night to facilitate an easy run through to Nottingham next day. Alas! man proposes and God disposes.

Towcester was still in the dim—very dim—distance, when the most conspicuous incident in the run happened. Driving along very cautiously, Mr. Murray suddenly experienced the thrilling sensation of rushing on a downward path leading to what he thought ruin, but subsequently investigation, with the aid of a lamp, proved it to be a dyke, which he had escaped by a few feet only—in fact, it was only by presence of mind and quickness in slipping off the belt and applying the brakes that a cold plunge was avoided. Now came the difficulty how to get the car upon the road again. Single handed this was impossible even with the aid of the Crypto gear, so the only course open was to wrap himself up and wait until help came along. After about an hour a good Samaritan turned up in the driver of the Mail, with whose assistance the foundered car was hauled up the embankment. No more damage was sustained than a slight injury to a lamp which got slightly disfigured in an interview with a projecting bough. When Buckingham was reached the motorist decided not to tempt fate by endeavouring to penetrate any farther through the impenetrable mist, so retired to bed after eight hours' severe tension. The next day the fog had considerably lifted and the remainder of the journey was uneventful and to a certain extent compensated for the previous day. No, there is nothing very fascinating in driving through a thick, black fog at any time, but when one does not know an inch of the road it is decidedly unpleasant.

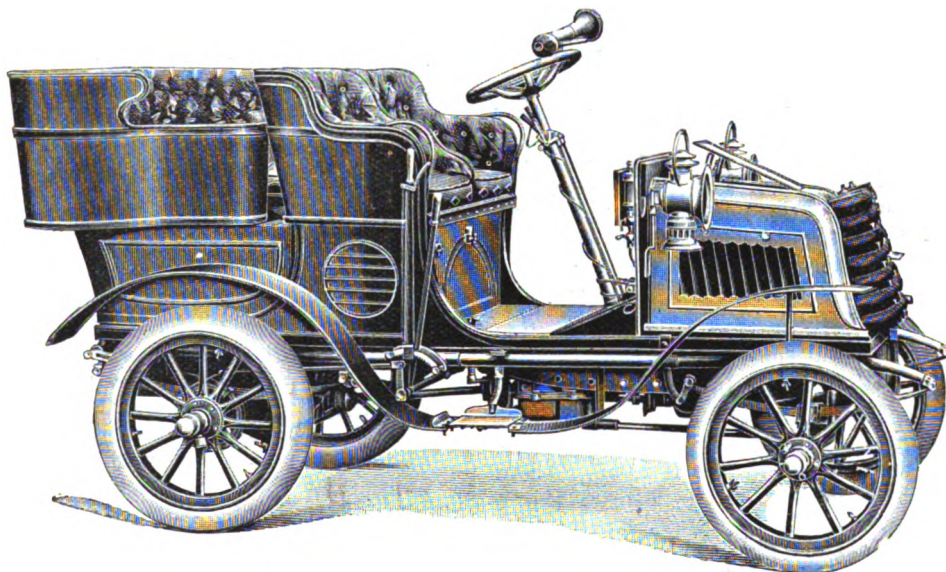
We are informed that the car in question, which is the property of Sir Hervey Bruce, never gave one moment's trouble except with regard to the usual effect of the damp weather upon the belts.

THE Collier Twin Tire Company, Limited, are now making a special pattern of their tire for motor-bicycles.

HAVING regard to the way in which the streets of London have been "up" during the past few months, we learn with interest that both the Corporation of London and the London County Council are about to seek Parliamentary powers giving them full control of the streets.

THE CUDELL LIGHT CAR.

THE Gesellschaft für Motor und Motorfahrzeugbau, (Cudell and Company), of Aix-la-Chapelle, Germany, have just brought out a new light car, of which we give an illustration herewith. The motive power is supplied by a vertical double-cylinder petrol engine, developing 8 h.p., the diameter of the cylinders being 90mm., and the stroke 100mm.. The cylinders are water-jacketed, the circulation being maintained by a pump and radiator. Electric ignition by dry battery and induction coil is adopted, while a centrifugal governor fitted in connection with the engine, regulates the quantity of gas allowed to pass to the explosion chamber. The motor is located under a bonnet in the fore part of the frame and transmits its power through a friction clutch to the variable-speed gear box. From the latter a universally jointed longitudinal shaft transmits the power of the motor to the rear live axle through bevel gearing. Three speeds forward and a reverse motion are controlled by a single lever at the side of the car. Ample brake power is provided; the road wheels are all 23in. in diameter, and shod with pneumatic tires. The rear part of the tonneau body of the standard car is readily detached, rendering the vehicle suitable as a touring machine for two persons, with ample luggage accommodation. Complete, the car weighs between ten and eleven cwt.



THE CUDELL LIGHT CAR.

BARON EDMOND DE ROTHSCHILD has hitherto been in the habit of employing horse traction for the transference of rare plants and flowers from his country estate to his house in Paris during the winter. The journey there and back took two days. Recently, however, the Baron had made a motor-wagon, which performs the double journey in one day, thus effecting a considerable saving in

time and money. The motor is of 8 h.p., and by means of a special arrangement of pipes the hot water is utilised for heating the travelling conservatory.

THE Coventry Chain Company, of Coventry, are now making a motor roller chain of $1\frac{1}{2}$ inch pitch with the bushes integral parts of the side plate, which is claimed to eliminate stretch, elongation being due to actual wear and tear only.

SINCE the "Mabley" car, of Messrs. John Marston, Ltd., Wolverhampton, was described in our issue of the 24th August last a number of modifications have been introduced, the most noticeable being the reversal of the position of the engine to permit the use of a straight instead of a crossed belt.

A DEPUTATION, representing firms engaged in the motor-carriage of heavy traffic, waited upon the Watch Committee of the Manchester Corporation last week to ask that the same privileges which are given to two-horse traffic in the city shall be allowed to motor lorries. It is proposed by the Committee to exclude heavy traffic from certain thoroughfares, and the owners of motor-lorries desire to be on the same footing as the class of two-horse vehicles mentioned. The representations of the deputation were favourably considered by the Committee, who will report upon them in due course.

CORRESPONDENCE.



MOTOR-BICYCLES FOR 1902.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—With your kind permission I should like to add a few more remarks and also interchange a few hints and ideas with the writers of the highly interesting and valuable letters on motor-bicycles. One remarkable feature of the Werner, I find, is the extraordinary wear that takes place on the front tire. Noticing how serious this was becoming after 350 miles running, I fixed a Smith's protecting band on the tread, and was astonished to find this worn completely through in less than 100 miles. The tires are 26 in. by 2 in. special Clinchers. At this rate a tire will wear out in no time. On motors driving on to the rear wheel the wear is not much greater than on a tandem bicycle, judging from a Minerva type of motor-bicycle I have seen that has run a thousand miles. Perhaps your able correspondents would state their experiences on the subject of tire wear. Now, regarding the V-belt problem, the one I got with the machine proved a nuisance through stretching, and no matter how carefully joined with the hook, it broke time after time. I then determined to try a half-inch round cat-gut band. This I cut to exact length, and then joined with a steel hook and eye. This gave good results, and I found it very easy to tighten by giving it a half twist or so. Thus no cutting and piecing are necessary, but still the drive is somewhat harsh; and I am now experimenting with a raw hide V belt, which has had the stretch taken out by hanging a 100 lb. weight on to it for about a week. This will then have to be carefully spliced and permanently stitched.

Then, as to the destructive sparking at the platinum contacts on trembler. I have found this can be greatly reduced by placing 10 in. of "Manganin" resistance wire, No. 18 S.W.G., in the primary circuit. This cuts down the current a little, but not enough to reduce firing spark.—Yours faithfully,
ELECTRICAL ENGINEER.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Following on "Petro's" letter in your last, perhaps my experience of the Werner bicycle may be of use. My machine is the 1900 pattern, bought in July that year, and has, therefore, had two seasons' work; the mileage to-date is 2,010. About three weeks since I had the connecting rod re-bushed; this is the only repair that has been made to the engine, except a new valve lifter guide to replace a faulty one. The same trembler and contact-pin are still in use, a platinum rivet having been put in trembler when connecting-rod was re-bushed. My Dunlop tires are still in use; the trailing tire is as good as ever; the driving tire wore through after 600 miles, owing to the absence of a regulating valve. This I put in myself, and at the same time a band $\frac{3}{8}$ -in. thick was vulcanised on to the driving tire. This, after 1,410 miles, is still in excellent condition.

As to side slip, I find no more tendency to this than in the ordinary bicycle, and as I enter next year on my fortieth year of cycling, I speak after some experience of the latter. The workmanship of the Werner is open to criticism in some particulars. No doubt this will be remedied. On three occasions I have done seventy-seven miles in one journey, only stopping to oil engine and get lunch. This year the machine has been remarkably regular in working, and has given no trouble at all.

"Petro" complains of the machine being noisy. I have altered my silencer so as to justify the name, and have utilised the exhaust to warm the petrol. As long as the temperature is not much below 40 deg. this answers well; with the temperature above 60 deg. of course it is not required.—Yours truly,

T. FREDK. HUNT.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Mr. Fawcett's experience is not unique. My Werner reached me, after some weeks' delay, minus the switch-handle.

One terminal of the coil was not properly connected with the coil wire, and the trembler case touched the trembler terminal and had to be filed away. I ordered mud-guards, the machine came without any, also without spare sparking plug and trembler, as ordered more than a month before. Now that I have remedied its faults, I must admit that the machine goes splendidly, with the aid of a piece of brass wire in place of the switch-handle, which has just turned up—five days after the machine, sent by rail. To crown all, I was astonished to receive by post this morning a bill for the switch-handle. As Mr. Fawcett aptly remarks, "Such carelessness ought not to be traced to the Viaduct."—Yours truly,
GERALD A. CHILD.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I have been interested in the recent revival in your correspondence columns of criticism of motor-bicycles. Some of your readers may recollect that nearly a year since I ventured to question the comparative utility of the Werner machine on Devonshire roads, and I was quaintly reminded of this fact some time since, when I sold my Werner, by a post card—evidently from a constant reader—which ran as follows:—"I offer £—; I think this is quite enough after your running it down so in the *M.C.J.*" However, I need hardly say that the opinions I then expressed were given in good faith and were only arrived at after a three years' experience of four-wheelers, three-wheelers, and two-wheelers in the county of Devon. This being so, I was much interested in Mr. Fawcett's letter (in June last, was it not?) giving such an extremely favourable account of this machine as ridden by him in the very same district, and I could not help speculating at the time as to whether his subsequent experience, which was then limited I believe to a few weeks of a very fine summer, would be as favourable.

We now have Mr. Fawcett's more mature opinion; and I think he is to be congratulated on the frank way in which he has practically rewritten his former letter and controverted the views he then expressed. Your readers will now be able to form an opinion as to whether those who criticised the design and performances of the Werner were justified, because the announcement has just been made that the makers have entirely remodelled the machine and those features which have hitherto been distinctive of the Werner, and, we have been told, have made it the best motor-bicycle on this planet—such as the position of the engine and that wonderful carburettor, have gone by the board. Although, therefore, I note that Mr. Benett is still more than satisfied with this machine, it is evident that the makers are not, and I think we may now say, "The Werner is dead—long live the Werner" (of 1902).

There is one thing that I have never been able to understand about the Werner of the past, and that is the wildly optimistic statements (all evidently *bona fide*) that have so constantly appeared in your columns. For instance, one correspondent, when his motor was temporarily out of action, could do thirteen miles an hour with the pedals alone; another felt sure that his motor developed 2 h.p.; another thought the Werner was the only suitable vehicle for the Swiss passes and the Lake district; another found it invaluable for drawing a trailer. I have a theory that many motorists make their first plunge with a Werner, and that they, as it were, concentrate on this—their first love—the enthusiasm which they will subsequently distribute more evenly over the whole field of automobilism. I need hardly say that I do not include in this category Mr. Benett's long ride of 215 miles, on which he is to be congratulated. But is he justified in assuming that others would be equally fortunate in accomplishing these long runs without a hitch?

It is usual, I believe, to put down the critical moments that some of us have gone through with our Werners to bad handling; and I was therefore amused to notice a little incident at the last Agricultural Hall Show. Amongst other motor-vehicles running round the arena was my old friend, the Werner, ridden by an expert who wore that nonchalant, a-child-could-ride-me expression which is rather taking. My attention was momentarily distracted by a Locomobile, with a milk-can hung on its condenser, sailing

round a corner at twenty miles an hour. On looking round again a change had come over the scene. The Werner had assumed a horizontal position, and its rider was just alighting from a short aeronautical trip. On examining the machine, I found that the silencer had gone and had taken with it part of the combustion chamber; the front of the carburettor had also been crushed in. Now it would have been awkward if this had happened on Mr. Benett's run.

Another point to which I take exception in Mr. Benett's letter is the statement that the system of lubrication is identical with the De Dion. In the latter, the lower rim of the piston dips into a recess in the top of the crank chamber, which is kept filled with oil thrown up through a narrow aperture in the same; therefore the piston receives a more or less constant quantity of oil at each stroke. In the former, the piston dips into the crank chamber. When there is plenty of oil in this, it receives a good splash; when little, a little splash; and, when none, it goes without. Further, there is a ball-valve or vent in all De Dion crank chambers, which allows a portion of the air in the latter to pass out on the downward stroke of the piston (thus preventing compression), while on the up stroke it closes, thus causing a partial vacuum. The effect (or one effect) of this arrangement is to prevent the oil being blown out as in the Werner, and running in a steady trickle down the trembler.

May I conclude with a word of advice to those who contemplate motor-bicycling—and, as we are told that we are on the edge of a motor-bike boom, the latter will probably be many. Before purchasing make sure that you will enjoy the pastime. The way to ascertain this is to take your present safety to the top of a good hill—let us say half a mile long. Now coast down at twenty-five miles an hour. Do not shirk the vibration, but sit well down in the saddle, bearing in mind that, if you are going to do the thing properly and take 215 mile rides, you will not be able to balance yourself on the handles and pedals for eleven hours at a stretch. Having got to the bottom, examine yourself introspectively and ascertain if you feel comfortable all over. There is a technical name for this logical process; it is called reasoning "a posteriori." Having gauged the amount of vibration due to inequalities in the road surface, you must add 100 per cent. for the engine vibration. To ascertain this, push the machine up (this will be useful practice for the future), and coast down again at fifty miles an hour. Now you will know how you will feel after half a mile on a motor bike; and, to find the sum of your sensations by the time you would reach Barnstaple, you have to make a mental effort and multiply by 430, adding 25 per cent. for shock due to collisions with carts, side-slips, and running over dogs, though of course these incidents would come more naturally to you after a bit.

If you still feel equal to facing the music, you should go at once up to London to examine some machines. If you feel drawn towards one with belt transmission, there is a simple test not to be omitted. Shut the compression tap, or jam the small pulley and see how much force is required to turn the driven wheel and make the belt slip. Just this power and no more will you get out of the motor. Now, if you take my advice, you will decide not to purchase; you will return, after a few pleasant days in town, with the satisfactory feeling that you have saved money; and you will probably live to a good old age.—Yours truly,

W. E. TESCHMAKER.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Referring to recent letters in your journal, *re* motor-cycles, I have for some months, after trials of the Minerva type, been constantly using a Werner. I think that the question of liability to side slip is much exaggerated and depends to a great extent on the rider. It seems to me that the driving power being always applied in the same direction as the steering is greatly in its favour. With additions to the silencer and half compression, and improvements in the carburettor and trembler as used by me it has given excellent results. The additions, as mentioned by Mr. Pattison in the last edition of the *Journal*, and which he finds so satisfactory, were copied from the machine used by myself.—Yours faithfully,

H. GASSON.

AERIAL NAVIGATION AND THE RECENT PARIS SHOW.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—In order that those readers of your journal who are not already sufficiently well informed may not jump to a hasty and erroneous conclusion on reading "Automan's" adverse report on the above regrettably meagre show, I deem it desirable to remark that the display in question was very far from being representative of aviation. Great Britain (with the Colonies) and America could make a far better show.—Yours faithfully,

SIDNEY H. HOLLANDS.

A QUERY *RE* STEAM CARS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—How long will a steam motor-car (the Gardner-Serpollet, for instance) run without showing steam from the exhaust? Even engines fitted with condenser and circulating pumps will sometimes, through insufficient circulating water, get a hot condenser and show steam, which, on the road, is against the law, and motor-cars are not fitted with circulating pumps.—Yours truly,

NAVAL ENGINEER.

POPULAR-PRICED MOTOR-CARS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I have read with interest your correspondent's letter in the present issue. While agreeing with his remarks in the main, I do not think that, at present, at any rate, manufacturers or agents can fall in with his suggestion of their supplying cars at the low price named. My company were the originators of cars at a really moderate price, but we were speedily convinced that, cheaply as we desired to produce them, we could not supply, for example, a 3½ h.p. car at less than £120 net.

Automobiles will, undoubtedly, tend to become less costly as the supply increases in years to come. It is, nevertheless, very foolish for the many would-be motorists to sit upon the fence because they will not pay what is, after all, but a few pounds extra.

I would merely conclude by mentioning that there are not a few excellent cars now on the market, the demand for which increases apace, so that, perhaps, "he who will not when he may, when he can he shall have nay."—Yours truly,

HUGH OWEN,

Director and Manager The Automobile Transport Company.

QUERIES *RE* IGNITION.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—As very nearly the only trouble I have with my De Dion voiturette is the failure of the sparking (the trembler arrangement being very erratic in its action), I am contemplating trying some other method of ignition. Can any of your readers inform me if they have tried the Simms-Bosch, or any other more reliable means, instead of the De Dion trembler and platinum-tipped screw.—Yours faithfully,

TEN MILES FROM ANYWHERE.

PETROL FOR MOTOR-BICYCLES.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—In common with many others, I am now considering the purchase of a motor-bicycle, but I foresee a considerable difficulty in the purchase of small quantities of petrol *en route*. The spirit is now sent out by the manufacturers in two-gallon cans, and all the agents I have approached on the subject have declined to "break the can," or sell less than the full two gallons. On the motor cyclist this would press very heavily, as he might require two quarts or perhaps a gallon to replenish his tanks, and the remaining spirit he would be compelled to pay for and leave behind. Could not cycle agents be persuaded to stock petrol, at all events in one-gallon cans, or to fill a few half-gallon

screw-topped cans for the convenience of motor-cyclists, charging say 2d. or 3d. per gallon extra for their trouble.—Yours faithfully,
LOCK NUT.

"ANOTHER WORKING MAN" writes:—"In reference to a 'Working Man's' letter, in your last issue, on popular-priced cars, as I have got one similar to the one he has made, I should be very glad to know where the items he mentions can be bought. As I have an air-cooled motor with only one speed, I should be glad to have a $3\frac{1}{2}$ h.p. water-cooled engine, and two-speed gear and chains for the price he names, so perhaps he would not mind helping."

MR. A. GOWER, manager of the Carlton Motor Company, writes:—"Referring to the letter in your last week's issue, in which Messrs. Rickard and Company, of Brentford, stated that it is impossible to run a motor with paraffin oil, as well as with petrol, with identical results, I can only state that our carburettor will do all that we claim for it, and further, that it has been thoroughly tested for a year before we attempted to place it on the market. We can refer Messrs. Rickard and Company to its users, or would be pleased to arrange a trial with them. If Messrs. Rickard and Company have gone to the limits of their experiments with carburettors, the inventor of our carburettor has struck out on new lines, and gone one better. The word "impossible" is of little value in mechanical science to-day. I myself have for sixteen years been experimenting with all kinds of engines from cold air to cordite and can always find improvements. Engineering is a life's apprenticeship."

THE U.S. Post Office Department has awarded the contract for automobile mail service in Minneapolis, Minn., to the Republic Motor Vehicle Company, a concern which has so far been quite unknown in the automobile industry.

MESSRS. FALCONET, PERODEAUD, AND CIE., of Choisy-le-Roi, France, intimate that, having terminated the agreement by which the Scott Tyre Company, of Coventry, represented them, they are now prepared to sell tires on their own account in this country.

A NEW radiating coil known as the Audin is being introduced by the Begbie Manufacturing Company, Willesden Junction, N.W. The coil differs from most radiators in having an oval tube instead of a round one, the effect being that a little more water is carried, but the exposure of the same to the cooling effect of the atmosphere is very much greater.

ON Tuesday last the record competition for the best time on the Gaillon hill began again, and Traffault, on his peculiar machine, mounted the hill in 58 seconds, making the world's record for voitures. Rigal followed, beating Osmont's record by four-fifths of a second, climbing the hill in 46 seconds. Rigal, not satisfied with this time, made another try, making the marvellous time of 42 seconds.

SPEAKING at the general meeting of the Allday's and Onion's Pneumatic Engineering Company, Ltd., at Birmingham this week, Mr. Wm. Allday stated that they had been busily engaged on motor-cars for about three years, and had lost a lot of money in trying to get at the right one. At last they had succeeded, after very careful tests, and they hoped during the present year to be able to make up the loss.

THE other day we had an opportunity of inspecting one of the new Ariel 10 h.p. cars with tonneau body built by the Ariel Motor Company, Ltd., of Birmingham. The car, which is a splendid specimen of English workmanship, is fitted with Ariel 10 h.p. twin-cylinder governed engine, water-cooled, electric ignition, three speeds forward and one reverse, all actuated by the same lever. No chains or belts are used, the drive being direct by bevel gear from countershaft to the rear live axle. Worm steering is used, which renders the same irreversible. Another important addition is a self-starting arrangement. The fear box is designed with syphon lubricators, which, when once gilled with oil, require no further attention for 300 miles, so doing away with the multiplicity of oil tubes,

FLOTSAM AND JETSAM.

BY "FLANEUR."

THE hope may pardonably be expressed that Lord Onslow will see fit to revert to his original desire as to the possession of a 12 h.p. car, after his recent frank admission that he had contemplated ordering one, but abandoned his intention on account of the police persecution and bought a modest 4 h.p. instead. The more boldly men of position come forward and demonstrate the absurdity of the existing speed limit, the better it will be for their less influential fellow automobilists. There need surely be no hesitation now that Mr. Chaplin himself, the author of the twelve-miles regulation, has publicly declared it to be incompatible with present-day conditions, and called for a drastic alteration of the limit to twenty-five miles an hour, with number carrying for cars capable of exceeding that speed.

EARL DUNDONALD, who made so excellent a chairman at the Aero Club banquet on Monday night, drove a point home which can hardly be emphasised too often. This was the debt of gratitude which M. Santos-Dumont owed to the motor manufacturer in respect of the internal combustion engine, which so signally combines lightness with power. One of M. Dumont's predecessors, Henri Giffard, had tried steam, and all the force that he could get out of the maximum weight that he could carry was three horse-power. M. Giffard did not fly across Paris and return, it is needless to remark, nor would M. Santos-Dumont have reaped the reward of his illimitable pluck had he not been able to press the new force into his service.

EVERY day seems to bring new confirmation of my belief that the majority of the people of this country are still in ignorance of the significance of the automobile movement, and nothing that has occurred in recent years has been so useful an object lesson as this brilliant feat of M. Dumont's and the main cause of its success. It is strange enough to the inner circle who drive motor-cars, or ride other people's cars, or are in any way whatever interested about motor-cars and talk about them; but the fact remains that the average citizen of this country thinks that the Light Locomotives Act has made the automobile movement, and not that the course of inventive progress made the Act. Certain people, he appears to imagine, thought that they would like to build a lighter form of mechanically-propelled vehicle than the traction engine, and that road travelling would become supplementary to railway locomotion. But his ideas still run on electricity and steam, and he will go on thinking for long enough that it was the desire for a new method of progression, and not the discovery of a new power, which led to the birth of the motor-car.

IN other words, the average man still thinks that there are no forces but wind, electricity, and steam, and he does not—however much automobilists may think the fact is generally known—recognise that in internal combustion and explosion we have a new source of power. The story of James Watt and the kitchen kettle he probably learned at school, and knows that steam is produced from heated water; probably he also read of Volta and the frog, and has vague ideas on the subject of electric generation; but he certainly has not grasped the fact that vaporous explosion, properly directed, is a new and potent force, and that the engine in which it is employed is the lightest, most economical, and most effective that the world has yet seen. Until the man in the street has realised what work a pint of petrol can perform he will neither understand what automobilism has done, nor regard the motor-car with the respect that it deserves. Of course, the number of people who do appreciate the situation is increasing, but they are in an absolute minority, and the motor-car is generally regarded as a new vehicle, and not as the embodiment of a new force.

AN incident that happened to myself while driving the other day reminded me of one of the most amusing chapters in "Out

of the Hurly Burly," by Max Adeler. Whoever has not read that book ought to remedy the omission forthwith; it is one of the most mirth-provoking concoctions that ever left the press. The chapter to which I refer describes the irrepressibility with which an insurance agent named Benjamin P. Gunn pursued his avocation. It is one of his victims who tells the tale. The said victim was called upon fourteen times in one morning by the indefatigable Gunn with respect to taking out an insurance policy. Gunn waylaid him in the street, at church, at the opera, on the train, and at a funeral. The victim fled for a fortnight to a distant city, and returned at one a.m.; he had hardly got into bed when the door-bell rang, and there was Gunn with a doctor, ready for examination. In vain the window was slammed down; Gunn sat on the doorstep all night, and he and the doctor tried to undress the victim in the street. The victim locked himself in his garret; Gunn rented the adjoining house and talked shop through the partition. Then he climbed through the trap-door with the doctor in tow.

THE victim fled to the steeple of an adjoining church and sat on the ball of the weather vane; an hour later Gunn and the doctor crept up the steeple in a balloon. As soon as Gunn reached the ball he threw his grappling iron into the shingles of the steeple, and asked the victim at what age his father died, and if any of his aunts ever had consumption or liver complaint. Without waiting to reply the victim slid down the steeple to the ground and fled to Mexico. Mounting a mule, he paid a guide to lead him to the summit of Popocatepetl. Just before reaching the top he heard voices, and upon rounding a corner of rocks he saw Gunn on the very edge of the crater, explaining the endowment plan to his guide while the doctor was examining the other guide to see if he was healthy. Gunn said he was glad that they could now talk about the policy without fear of interruption, but the victim pushed him backwards into the crater, and he fell a thousand feet, screaming something about "non-forfeiture." A day or two later there was an eruption of the volcano, and out came Gunn, considerably scorched and with his hair singed off, but ready to resume business!

WHAT happened to me was less dramatic, but it showed that in fact as well as fiction the insurance agent is not without resource. I was driving along a somewhat slippery road, with all due care, and appeared to have got to the end of the grease. Then the necessity for passing between a stationary cart and an approaching "tram" caused me to forget the mud, and I was congratulating myself upon a successful manœuvring between Scylla and Charybdis, when I suddenly found myself floating on a mass of particularly bad slime, and performing the elegant gyrations of which a car is capable under such conditions. Clutch in or clutch out, it was all the same; the car slid bodily down the steeply-shelving road, and my front wheels were quickly over the kerb. As I got down to bring the car back again into the straight, but slimy

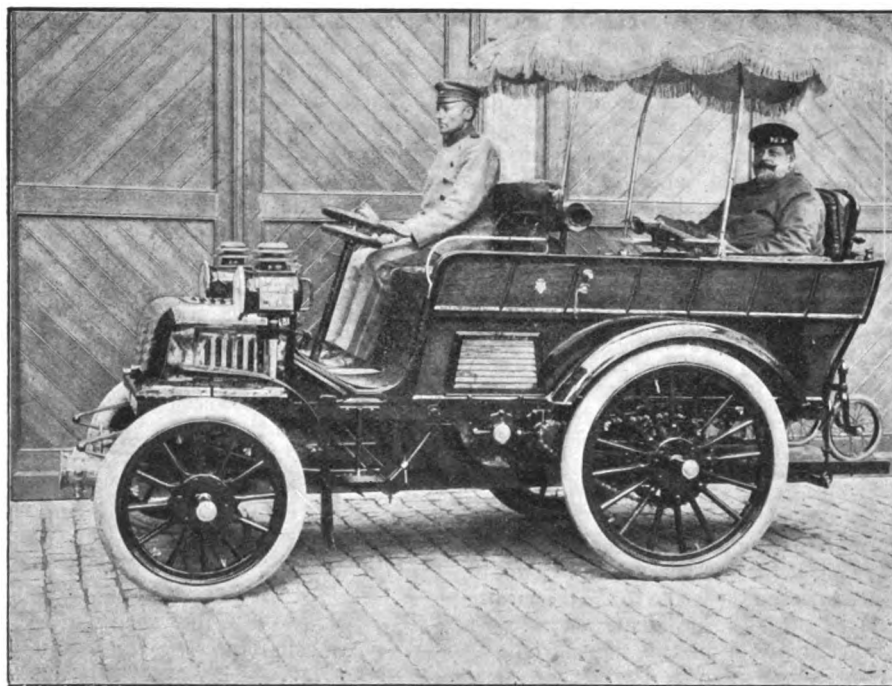
road which led to side-slips, a well-dressed bystander proffered his assistance—for I had no fellow passenger on the car. We pushed the car out of the gutter, the wheels skidding all the time, and then the stranger asked me for a lift, which, of course, I willingly accorded. I could see that he did not relish the passage over the still remaining hundred yards or so of grease, but he set his teeth hard until we got over it and on to drier ground. Then he got to business. He was the Benjamin P. Gunn, and I was the victim, for he announced that he was an insurance agent, and would be happy to insure myself or my car on favourable terms, etc., etc. Remembrances of the Popocatepetl episode flashed upon my mind as we drove across Kew Bridge, but I did not hurl him into the Thames, nor do anything more drastic than thank him for his offer and set him down where he wanted to alight. He had been much too kind, and I was almost taking out a policy on the spot; but, then, I was already heavily insured. It is not to be gainsaid, however, that the present-day insurance agent is quite equal to improving the occasion, and as I looked backward on the retreating form of my temporary "fare" I realised that he was returning to the spot where he had seen my unwelcome *glissade*, and had only asked me for a lift in order to make a convert.

A WRITER in a sporting weekly, whose unconsciously entertaining articles on motor-cars were recently referred to in this journal, expressed surprise, it may be remembered, that no provision had been made to put the burners of a tube-ignition car to culinary use. Baked meats, he opined, could be easily forthcoming from so convenient a range and oven as a Daimler bonnet and its interior apparatus. Be that as it may, a well-known *chauffeur* who drives "on his electric," but has also "tube" to fall back upon, did put the latter to good purpose during the recent frosty weather. Other people's carburettors were unconsciously freezing, but he removed the platinum

tubes and lit his burners, thus keeping a constant supply of hot air beneath his bonnet, which effectually prevented his carburettor from lapsing into a state of inconvenient frigidity.

MESSRS. E. DE POORTER AND CO., Great Tower Street, E., whose Derby motor-bicycle was recently described in these columns, are, we hear, about to put a new light car on the market.

MR. H. O. HALL, of Messrs. Hall and Company, of Tonbridge, in conjunction with Mr. A. Fordyce, have acquired the sole agency for Great Britain for the well-known Darracq cars. A new concern is being organised under the style of Messrs. A. Darracq et Cie. (Great Britain), and a large dépôt is shortly to be opened in London, where a large range of Darracq cars will be kept on show. The new 9 h.p. single-cylinder car comprises a number of new features, such as improved governor and inlet valve control, improved trembler, double rows of balls to axles, and greater seating accommodation, which we hope to deal with in a later issue.



AN INVALID'S MOTOR-CAR. (See page 701.)

[Automobil Zeitung.]

CONTINENTAL NOTES.

By "AUTOMAN."

THE readers of the *Journal* will remember that in the issue of September 7th I made some severe strictures on the author of the Lisieux accident, and also that I was called to account the following week by "An Occasional Motorist in France," who disputed my facts, and took up the defence of the Count de Villeroi and his son. In my notes of September 21st I again referred to this sad accident, saying that I could not accept the facts given by my critic, and preferred to suspend judgment until the truth should have been elicited at the trial. "An Occasional Motorist in France" would have done well to leave the matter alone, and not to have trusted to such an obviously *ex parte* statement as that given by the accused, which had no foundation in fact. The trial took place last Friday fortnight at Lisieux, and the judgment was rendered last Friday week, too late for me to refer to it in the last issue. Young Villeroi is condemned to two months' imprisonment, with application of the First Offenders Act, and the Count de Villeroi is acquitted because his son had a driving licence.

HERE is a translation of extracts from the judgment, compared with "An Occasional Motorist in France's" facts:—Judgment.—Seeing that the employee, Lucas, on duty at the entrance to the town, made an effort to stop the motor-car stepping in front and on the road to a distance of one metre and a-half from the edge of the footpath, and that he made a signal to the driver to stop, and that the latter, instead of obeying this injunction, continued at the same speed, and that Lucas was caught by the side of the car and thrown underneath the wheel, and that after having received first aid from more people he expired. Seeing that Villeroi *fils*, after having stopped at about ten metres from the place of the accident, set off again without going to the aid of his victim, thus shunning the responsibilities which he had incurred. Seeing that Villeroi *fils* does not deny the facts and only says he did not see the signals of Lucas, and only continued his journey because of the threats of the spectators, etc. "An Occasional Motorist in France" in his letter tells how Lucas "deliberately placed himself in front of the car, holding up his hands. The son avoided him by steering to the left, and still the stupid fellow repeated it again."

IN the evidence itself I find that only one witness says the car stopped, and he says it stopped for one minute, and Count de Villeroi himself in his evidence says that he wrote to the procurator of the Republic "several days" after the accident, not as "An Occasional Motorist in France" says, "on the same evening." Finally, with regard to the statement that the Count only continued his journey because of the threats of the crowd "brandishing of sticks and umbrellas and hurling of stones," there is not a particle of evidence to that effect, indeed there were very few people present. The bold facts, therefore, remain that the car passed the octroi (a place where every Frenchman knows he must stop) at full speed, knocked over the employee on duty and then deliberately bolted, leaving the man to live or die, and it was not until the newspapers raised a commotion, and in face of the certainty of being found out that the Count de Villeroi put himself in communication with the procurator. I can find no defence possible for such thoughtless and cowardly action, and I notice that the Count had to admit that he had already himself been condemned in the First Court for another accident, although the Court of Appeal quashed the condemnation.

A MATCH was recently arranged between his Royal Highness the Duc des Abruzzes, cousin of the King of Italy, and M. Coltelletti, who initiated the Duc des Abruzzes in the gentle art of motoring and who taught him to drive. The match was between the 24 h.p. Panhard, owned by M. Coltelletti and a new and powerful car which the Duc has ordered from an Italian company named F.I.A.T. The course was a non-stop run of 206 miles from Turin to Bologna, both cars to have their touring bodies and two passengers besides the driver.

THE race came off last Sunday, the start being fixed at Villa Nova d'Asti in order to avoid the crowds. M. Coltelletti was given the signal to start at 8.40 a.m., and five minutes later the Duc des Abruzzes set off. At Alexandria the Duc was only three minutes behind his competitor, having, therefore, gained upon him slightly, but the Duc was obliged to stop to repair the brakes, and seven miles further on the Duc's car struck a large stone in the middle of the road and broke down completely under the strain. The Duc was fortunately uninjured and returned to Milan by train. M. Coltelletti, unaware of the accident, continued his journey, and arrived at Bologna at seven minutes past five, having accomplished the 206 miles in 8 hours 29 minutes, averaging about twenty-six miles per hour. The roads were muddy and in very bad condition, and rain was falling. It is rumoured that the Duc will issue a new challenge as soon as he can get his car repaired and strengthened.

THE new flying machine in course of construction under the auspices of M. Augusto Severo has been christened the "Pax," and is fast approaching completion. It differs considerably from the "Santos-Dumont," and although of a cigar shape is double the circumference at the centre of the cigar. The car, which is to carry three passengers and two motors, one of which gives 20 h.p. and the other which is of 16 h.p., is not suspended, as is the case with the "Santos-Dumont," but is fixed to the folds of the balloon, and is constructed of steel tubes and aluminium. There are altogether four aluminium fans, two of which are employed to point the ship upwards or downwards or to keep it level, the other two fans are placed one at each end of the cigar-shaped envelope, the one in front is to overcome the resistance of the air and the one behind is to propel the ship.

THE Paris International Automobile Exhibition, which opens on December 10th next, will be full to overflowing with exhibitors, and although it is to be held in the Grand Palais—in itself an extensive building—it is already too big for its shoes, and it has been found necessary to install the Alcohol Section in the basement underneath the ground floor. Few people who visited the show in the Grand Palais last year are aware that there is a vast crypt or basement underneath the whole building, but such is the case, so that this year the exhibition will occupy two floors. M. Loubet, President of the French Republic, who takes a great interest in automobile matters, will visit the Salon on the opening day at two o'clock.

M. LOUBET, like many other Frenchmen highly placed, is very much interested in the question of the use of alcohol for motor-cars. The question is an all-important one in France, for whilst the alcohol is a national product, petrol pays a heavy tribute to the owners of the monopoly and benefits the country in no way. There is a project on foot to make the refinery of petrol a State monopoly, and everything points to the ultimate object of this scheme being to maintain a price which will just allow alcohol to compete favourable with it. There would then be an immense trade for the agriculturists and for the distillers of alcohol.

RIGAL'S glory as a "record man" has been of very short duration, for on Wednesday week last Osmont set off for Gaillon with the two official chronometers, Tampier and Gaudichard, vowing to lower the record. On Sunday week at the hill-climbing trial Osmont had very bad luck—twice he was obliged to slow up on account of obstacles. He was confident of doing much better, and as the results turned out his confidence was not misplaced for he beat the records twice in succession, the first time by 3 2.5 sec. and the second time by 3 3.5 sec., making the second time 46 4.5 sec. to do the 1,000 metres, or just over forty-eight miles an hour. His machine was an 8 h.p. air-cooled De Dion.

RIGAL, however, soon got his revenge, for on the day following he attacked the 1,000 metres on the level, for which Osmont

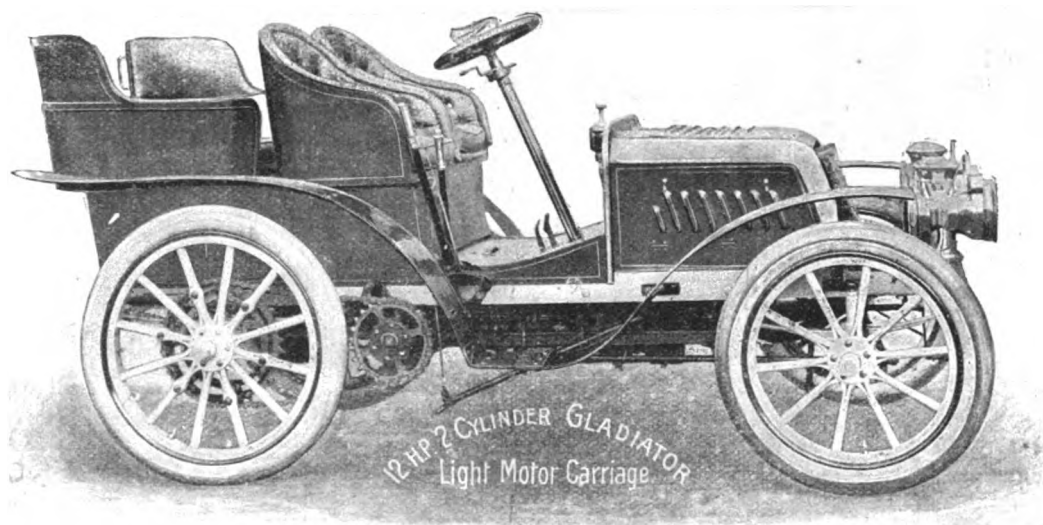
held the record. Rigal did the kilomètre, with a flying start, in 33 1-5 seconds, attaining a speed of 108 kilomètres 432 mètres, or over sixty-seven miles an hour, beating every record, including Jenatzy's famous time, and only excepting Fournier on his 60 h.p. Mors at Coney Island, who did the mile in 51 1-5 seconds, doing nearly 70½ miles an hour.

M. SANTOS DUMONT's new air-ship, which is being constructed at the works of M. Henri Lochembre, is to have a hydrogen envelope cubing over 1,200 mètres, and it is to be divided into three equal compartments by partitions of unvarnished silk. He will employ two Buchet motors of 40 h.p. each and weighing 4 kilos. per h.p. In addition to the movable balance weight, by which he was able to incline his No. 6 upwards or downwards at will, he is going to apply to his No. 7 a system by means of which he can withdraw air from the compartment at one end and send it into the compartment at the other end. In each of these two compartments he will have a small inner balloon containing air, and these two will be joined together by a tube which passes through a fan so as to be able to displace the air at will. By this means it is hoped that the unpleasant pitching motion will be obviated.

Warnborough, Alton, Bentley, Farnham, and Aldershot; reverse route next day. December 11, Aldershot, Farnham, Hog's Back, Guildford, Worplesdon, Bisley, Bagshot, Farnborough, and Aldershot; reverse route next day. December 13, Aldershot, Ash, Wyke, Puttenham, Compton, Godalming, Milford, Hindhead, Telford, Farnham, and Aldershot; reverse route next day.

THE GLADIATOR 12 H.P. LIGHT CAR.

TO meet the growing demand for a fast and powerful light car, the Clement and Gladiator Company, of Paris, and 14, Regent Street, S.W., in addition to their 6½ h.p. single-cylinder vehicle, have now taken up the construction of a twin-cylinder car of 12 h.p. We had an opportunity the other day of inspecting the first one to arrive in England, and give an illustration of the *tonneau* herewith. The engine, which is located under a bonnet in the fore part of the frame, is a twin-cylindered Aster, fitted with a simple and effective governing arrangement, acting on the intake of gas to the cylinders. The latter are water-cooled, having a water jacket over their whole extent, the circulation being ensured by a rotary pump driven off the fly-wheel. The water tank, which is carried out of sight at the back



THE GLADIATOR 12 H.P. TONNEAU.

MOTOR LORRIES FOR MILITARY PURPOSES.

THE War Office Committee on Mechanical Transport has now fixed the dates and the revised routes for the trials of motor lorries for military purposes in the neighbourhood of Aldershot, Guildford, Farnham, Hindhead, etc. The trials will commence on Thursday next week, December 5, and will conclude on Saturday, December 14. The number of lorries which will take part in the trials is not so large as was at first anticipated, and will not exceed a dozen. Each lorry will have a trailer attached, and will be in charge of a competent driver sent by the firm entering it, while officers will be selected to accompany each vehicle in order to report on its capabilities. Four different routes have been chosen, the journey being made in one direction one day and in the reverse direction the next. A start will be made from the Royal Engineers' establishment at Aldershot Camp at half-past eight on the morning of each day, and the lorries are timed to return by about four o'clock in the afternoon. The following are the dates of the trials and the revised routes. December 5, Aldershot to Hale, Odiham, Hartley Row, York Town, Bagshot, Frimley, Farnborough, and Aldershot; reverse route next day. December 9, Aldershot to Hale, Odiham, South

of the carriage, holds about six gallons, and as efficient radiators are provided, the water is kept cool for a great length of time. The ignition is electrical. The changes of speed are effected by the well-known Panhard type of gearing, giving three changes of speed and a reversing motion. From the counter-shaft the usual duplicate pair of sprocket wheels and chains convey the power to the rear road wheels. The petrol reservoir, which is carried under the driver's seat, holds sufficient petrol for a run of one hundred miles. A small reservoir for lubricating oil is set on the dash-board so that the engine can be lubricated at will, when running, from the driver's seat. Steering is controlled by an inclined hand wheel placed on a smartly raked steering pillar. There are two distinct sets of brakes, one being actuated by the right foot and acting upon a large drum on the countershaft, and the other being actuated by a hand lever acting on large drums on the driving wheels. Both brakes act either forwards or backwards. The rear road back wheels are 30 inches in diameter and the front wheels 26 inches, fitted with 3-inch pneumatic tires. Although the illustration shows a *tonneau*, the car we examined, while being identical as regards the chassis, was fitted with a Limousine body, the two back seats being completely enclosed, with windows on either side, and a glass in front, whilst the front seats are protected by a leather canopy with side curtains and glass screen. The weight of the *tonneau* complete is 14 cwt. and the Limousine 15 cwt.

HERE AND THERE.

MESSRS. JAMES AND BROWN, motor engineers, of 78a, Queen Street, Hammersmith, are about to open more extensive premises in King Street, where the manufacture of their new type of car will receive special attention.

THE Presto Gear Case Components Company, Ltd., of Frederick Street, Wolverhampton, are now making a special feature of motor bonnets, radiators, oil and water tanks, carburettors, etc., for the motor trade.

A MACHINE somewhat on the lines of the Century is being built by the Eagle Engineering and Motor Company, of Altrincham, Cheshire. The motor is a $4\frac{1}{2}$ h.p. De Dion, while a new departure is the fitting of inclined wheel steering.

NEW signboards are being put up by many local authorities, and at Woodcote Green, Epsom, is one of metal, with the caution painted red, "This road is dangerous to motor-cars"—whether because of the presence of police spies, unrolled stones, or steep decline the notice does not indicate.

ON Thursday Mr. C. Friswell held a sale by auction of several up-to-date Panhards in first-class order, including one 12 h.p. four-cylinder 1901 pattern Panhard, with lamp and electric ignition, tonneau body, and all the latest improvements; besides several of the later pattern Locomobiles, and other well-known types of cars.

IN addition to motor roller chains, Mr. Hans Renold, of Manchester, is now making an improved form of the silent chain. It is known as the block silent, and is specially designed for high speed work. It is made in pitches from $\frac{1}{2}$ in. to $1\frac{1}{2}$ in. As an indication of the strength and durability of these chains, it may be mentioned that the $\frac{1}{2}$ in. pitch is now running at 1,500 to 2,000 revolutions per minute, transmitting $3\frac{1}{2}$ h.p.

MR. STAPLEE FIRTH had a long and busy day at Chertsey Police Court on Wednesday, when a number of cases against motorists were heard. Two Locomobilists were summoned for exceeding a speed of four miles per hour—the first case was dismissed, and the other withdrawn. In two summonses against motor-cyclists for exceeding a speed of six miles per hour with motor-cycles and trailers, one motorist was fined and the other case dismissed.

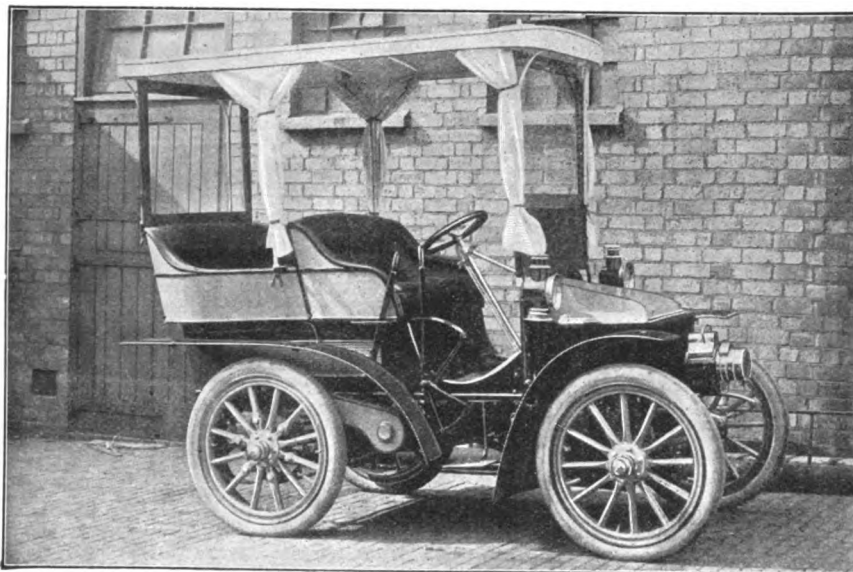
MESSRS. ROSS, COURTNEY, AND COMPANY, LTD., Ashbrook Road, Upper Holloway, N., have just introduced a special motor tire pump constructed to give the high pressure required in a motor tire with the least possible resistance while pumping. It is fitted with a water jacket, which neutralises the heat produced by working the pump against the high pressure, and keeps the working parts cool, thus prolonging the life of the pump and greatly adding to its efficiency.

THE Aspley Engineering Company, Ltd., of Aspley Lane, Nottingham, have lately introduced a new condenser for use on motor-cars. It consists of a large number of small canvas tubes carried in a tubular frame; it is claimed to be 75 per cent. lighter, and more efficacious than any other condenser on the market. It is also arranged to work with an air pump to create a partial vacuum in the condenser, so relieving the exhaust steam from any back pressure.

THE Hart Accumulator Company, of Marshgate Lane, Stratford, E., are introducing a special line of ignition cells contained in strong boxes, and sealed at the top to prevent spilling of the electrolyte. There are six standard sizes, and these can be supplied in large quantities at short notice. The capacities vary from 9 to 90 amperes, and the internal resistance is very low. In dimensions the over-all height and the width are 8 inches and $4\frac{3}{4}$ inches respectively for all sizes, but the length varies from 13-16 inch up to 7 $\frac{3}{4}$ inches.

THE only electric vehicle that made the Southsea trip, as the "Powerful" of the British and Foreign Electrical Vehicle Company. The total distance of 95 $\frac{1}{2}$ miles was covered in 6h. 48m., giving an average of more than 14 miles per hour. The cost of the run was 6s. 3d., and the passengers carried were five. The car was a Krieger, fitted with Leitner accumulators, the total weight of car and batteries being 1 ton 15 cwt. Thirty units of electrical energy were taken in London before the start and 6 units at Winchester during lunch. No stops other than the official stops were made.

THE illustration on this page depicts the 10 h.p. Wolseley Siamese phaeton with canopy, lately completed by the Wolseley Tool and Motor Company, Limited, Birmingham. The car is fitted with the standard chassis, but has in place of the ordinary



THE "WOLSELEY" 10 H.P. SIAMESE PHAETON.

tonneau body one which will carry with ease and comfort five persons, including the driver. The rear seat is very comfortable; the entrance to it is effected through the front, the seat to the left of the driver being hinged so as to open outward over the side. The canopy is made of light framework covered with a weather-proof material; curtains are arranged on sides and rear, and a glass shield is fitted in front, which can be raised and strapped to the roof at will. The whole of the canopy can be readily detached by a suitable lifting arrangement supplied with the car.

THE Automobile Racing Association of the State of New York is a new organisation formed with the purpose of developing automobile track racing. The association, it is stated, has secured a tract of land at Syosset, L.I., where tracks of different nature are to be constructed. There is to be a speeding track of ample length, with graded turns that will permit of motor-cars developing their highest speed, a climbing track, a rough roads track, a water ford, stretches of sand roads, etc. A grand stand of ample dimensions is also to be built.

UNDER the name "Narbonne," the Whippet Cycle Syndicate Limited, of Clapham Junction, S.W., are introducing a new ignition gear for petrol motor-cars. The advantages claimed for this device are that the contact-breaker is removed from the engine and can be placed in such a position on the car that it can be easily inspected and readily adjusted. It also entirely does away with the trembler and its attendant troubles. It enables the contact points to be in a position where it is impossible for oil to get on them and prevent them from doing their proper duty. The contact points are of platinum, and are of ample size. They are arranged so that they not only meet to make and break contact, but a slight "rub" occurs with every contact that they make, keeping the surfaces clean and bright. The gear is capable of working at any speed, and can be fitted to cars of all makes.

THE Winton Motor-Carriage Company, of Cleveland, U.S.A., have so far built about 700 carriages, and expect to turn out at least 500 next year.

THE annual dinner of the Manchester Automobile Club will be held in the month of January next, when a number of special guests are expected to be present.

A PUBLIC motor-car service is about to be started in Greece between Athens, Theben, and Chalkis. Two cars for the service were recently received at the Piræus from Paris.

MOTOR-CAR weddings are becoming popular. Two automobiles, one day last week, conveyed the principals to a matrimonial contract and their friends to St. Simon's Church, Shepherd's Bush.

A CONCESSION for a public service of motor-cars between Brussels and the suburb of Schaerbeck has been secured by M. C. Jenatzky, who will use his combination petrol-electric cars for the work.

The Grand Duke Nicholas Mihalovich has recently made the first mountaineering tour in the Caucasus in a 10 h.p. Mors car. The journey was from Borjom, near the Persian frontier, to Batoum, a distance of 144 miles.

A SPEED contest over a straight course of 3 kilometres was lately held at Nimegen, by the Dutch Automobile Club. Herr Conrad proved the winner, he covering the distance on a Gobron-Brillié car in 2 min. 59 sec.

MR. A. C. BOSTWICK, whose interest in and study of automobilism has probably exceeded that of any other American amateur motorist, is now taking an active part in the affairs of the Pan-American Motor Company, of Mamaroneck, N.Y.

WE understand that Messrs. Roots and Venables, of 100, Westminster Bridge Road, S.E., are commencing the manufacture of 7 h.p. and 12 h.p. cars, the latter having a two-cylinder engine. In both cases, the motors will be located under a bonnet in the fore part of the frame.

MESSRS. PEUGEOT AND CO., of Paris, inform us that notwithstanding advertisements to the contrary, no one has as yet obtained an example of the Peugeot new model, and that the only source through which it can be obtained in England is Messrs. Friswell, Ltd., of Holborn Viaduct, E.C.

IN a remarkably short space of time the motor car has made the conquest of the Royal House of Savoy. The King, the Queen, the Count of Turin, and the Duke of the Abruzzi have all become enthusiastic *chauffeurs*. The latest convert to automobilism is Queen Margherita, who is said to be so delighted with a recent tour that she has decided to purchase a car for her own use.

MESSRS. ROOTS AND VENABLES have just completed a special car for a gentleman in Bombay. The body takes the form of a Victoria to seat four persons in addition to the driver. The car is propelled by a 6 i.h.p. single-cylinder engine, using ordinary paraffin, and has two speeds ahead and one reverse. Solid tires are fitted.

THE question of regulating the speed of motor-cars in the city has come before the City Council of Christchurch, New Zealand. The By-Laws Committee expressed an opinion that there was no reason why motor traffic should not be regulated in the same way as the ordinary traffic of the city. It recommended that a by-law should be prepared requiring every motor-car owner to procure a licence and to register the licence at the office of the Council. The report of the Committee was adopted.

MR. L. SCHLENTHEIM, a member of the Automobile Club, writes:—"With regard to import duties in Holland, Germany, etc., it may interest you to know that I took my car over to Holland, where I had to pay a duty of 5 per cent. on the value of the car, which was refunded to me without any difficulty on passing the Dutch frontier into Germany. The cost of the various papers was about 7d. In Germany, on my explaining to the Custom House officials that I only came into Germany for a tour for a few weeks, I had to pay no duty whatever. In France I had to pay £28 duty, being £2 for each 100 kilos. weight, which also was refunded to me on leaving France."

MOTOR-CYCLES FOR 1902.



ONE of the features of the present time is the rapidly-growing prominence of the motor bicycle. Tricycles and quadricycles are still being turned out by a few firms, but it cannot be said that they are meeting with an increasing adoption. A better fate is, however, anticipated for the two-wheel machine, to supply which there is hardly a single firm, big or little, in the cycle trade not laying itself out. There is certainly to be a large increase in the number of motor bicyclists in the country during the coming season, but so many firms are now catering for this prospective demand that it behoves them to act cautiously, so that the market shall not be over-supplied. A large number of motor-bicycles have been described in our columns during the past few months, so that where they remain unaltered it is not necessary for us to refer to them again on the present occasion. Our object is to briefly describe the many new or improved motor cycles that have made their appearance at the cycle shows or which are about to make their bow to the public. Hitherto the belt drive has been the only method adopted of transmitting the power of the engine to the rear road wheels, but now several machines are being put forward with chain driving in place of the belt. It is, of course, too early yet to forecast the result of the battle that is, as it were, during the coming season to be waged between the two methods of power transmission. Altogether the motor-bicycle is in an interesting stage of development.

THE Quadrant Cycle Company, Limited, Birmingham, in addition to the "Autocyclette," recently described in these columns, have now introduced a new form of motor-tricycle, of which an illustration is given herewith. The machine is exactly the same as the "Quadrant" motor-bicycle in every detail except the front fork. In place of the front fork and wheel of the bicycle the steering socket is elongated and stayed to the diamond frame. This elongated socket has a cross-bridge fixed rigidly at the lower end, each end of this bridge terminating in a short pillar about 4 in. high. A corresponding pillar, working parallel with it and joined to it by four links, is arranged to carry the side wheel. By this arrangement either end of the cross-bridge is able to descend below the horizontal with a corresponding rise on the opposite side. This rise and fall is obtained automatically in steering by means of a sloping

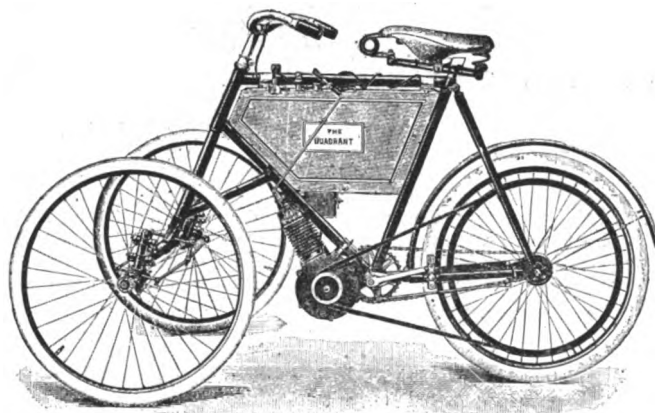


FIG. 1.—THE QUADRANT MOTOR-TRICYCLE.

cam and a grooved pulley wheel on each side of the machine. Steering is controlled by the handle in the usual manner, and by means of a pair of light rods running parallel with the fixed cross-bridge. The effect of this novel mode of steering a tricycle is (1) to cant over the back or bicycle part of the frame exactly as when a bicycle turns a corner, and (2) to bring the steering post an inch or so inside the true centre which it occupies when running straight, thus transferring the rider's weight to that extent to the inner side of the circle, and to the same extent counteracting the momentum and tendency to overbalance. The side wheels at the same time assume an outward sloping position, thus still further counteracting the momentum. The net result is to give a very high degree of safety when steering quickly, or turning corners. In case of need the driving band can be taken off in a moment and the machine ridden as an ordinary tricycle, plus the extra weight of a motor. The frame is 24 in. in height, the wheels being all 26 in. in diameter. The driving tire is 2 in., and the steering tires 1½ in. Back-peddalling band brake and a back wheel rim brake are fitted. The weight of the machine complete is about 100 lbs.

The motor-bicycle which Messrs. Calcott Bros., Limited, Coventry, are about to introduce will have the engine (1½ h.p.) located between the main down tube and the rear wheel, and will drive the latter by a belt. In addition to trikes and quads, the Ariel Cycle Company, Limited, Birmingham, are now turning out motor-bicycles on the lines of the Minerva. Provision for petrol, lubricating oil, accumulators, and coil is made in a case carried below the top tube. The bicycle itself has been specially built for motor driving, and is fitted with front-wheel hand-applied and rear-wheel back-peddalling rim brakes. The E. M. Bowden's Patents Syndicate, Limited, Dorrington Street, E.C., are making a bicycle of the Minerva type, but in which chain driving replaces the belt. The large chain wheel

on the hub is fitted on a friction clutch, which is thrown in and out of action by "Bowden" wires. The brakes are also regulated by this mechanism, and so also is the exhaust valve lifter.

A motor-bicycle, quite new to the English market, is the "Indian" illustrated in Fig. 2, and made by the Hendee Manufacturing Company of Springfield, Mass. The first one was brought over only last week by Mr. G. W. Sherman, the representative of the makers. The motor, which is of the high-speed air-cooled type developing $1\frac{1}{2}$ h.p., is built in, and forms part of the main down tube of the cycle frame. The carburettor or vaporiser is of a new type, and gives a steady quantity of

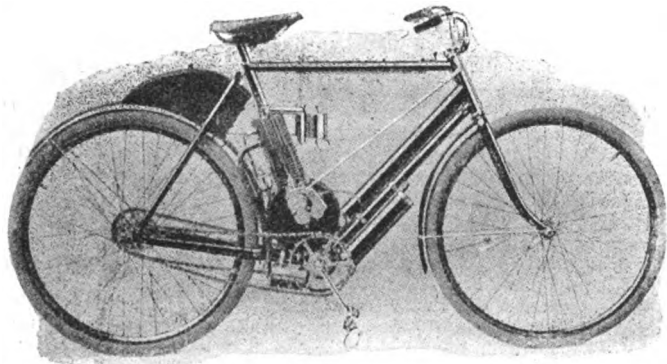


FIG. 2.—THE "INDIAN" MOTOR-BICYCLE.

"gas" under all conditions, an air valve only being fitted to regulate the quality of the mixture. One lever controls the ignition advance and retard, and the exhaust valve lifter. The battery is contained in a long cylindrical metal case which lies on the lower cross tube of the frame. The lubricating oil is carried in a small tank in front of the back stays, and is fed into a glass oil measure, fitted on to the crank case. This measure holds just enough oil to thoroughly lubricate the motor for about thirty miles, a cock being fitted to the bottom of the crank case to draw off the spent oil. By making the oil measure of glass there can be no question as to the oil reaching the motor, as it can be seen at a glance whether it is being fed or not. The entire drive is by chain. The starting or pedal drive is on the right side of the machine in the usual manner, and connects to a special free wheel clutch and back-peddalling brake in the rear hub. The motor drive is by chain from motor-shaft to a countershaft at the bottom bracket, at which point the first reduction is made, and from the countershaft back to the rear wheel, where the second reduction is made. In this construction a steady drive is claimed to be obtained without any slip whatever, allowing the entire power developed by the motor to be transmitted to the rear wheel. Provision is made for adjusting all the chains. The petrol tank is carried at the rear of the machine, and has a capacity sufficient for a run of thirty-five miles. Ample space is also available for the fitting of an extra tank. Complete, the machine weighs about 90lbs.

The Aurora Motor Manufacturing Company, Norfolk Street, Coventry, have been engaged some twelve months in bringing out a suitable motor for a bicycle, also in designing a frame that will carry a motor to the best advantage. The illustration (Fig. 3) is the outcome of their experience. The motor is very powerful, and is claimed to enable the machine to mount steep gradients without the assistance of pedal-

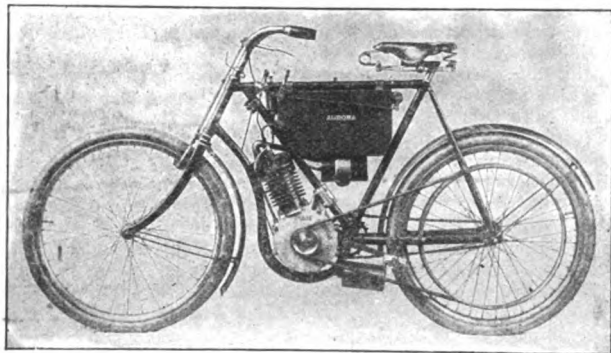


FIG. 3.—THE "AURORA" MOTOR-BICYCLE.

ling, and is so constructed that a slow speed of some five or six miles per hour can be obtained. This is of special value to a rider, as hitherto very few motor-bicycles could travel at a slow speed. The engine develops $1\frac{1}{2}$ nominal h.p., and drives the rear wheel by a small belt. A new motor-bicycle is about to be put on the market by M. De Breyne, Snow Hill, E.C. It is made by the Etablissements Pieper, of Liege. The motor, of $1\frac{1}{2}$ h.p., is supported from the bottom tube of the frame, also from the stays behind the bottom bracket. A carburettor of

the float-feed spray type is employed, while the power of the engine is transmitted to the back wheel by a round gut band. Messrs. Shakespeare, Kirkland, and Frost, Limited, Bradford Street, Birmingham, have adopted the Minerva system for their motor bicycles. The back-wheel hub, which is the Moderatum, made by the Garrard Manufacturing Company, provides the necessary free-wheel, and also a back-peddalling brake, so arranged that the machine may be wheeled backwards. The Enfield Cycle Company, Limited, Redditch, who are still making motor tricycles and quads, the latter with $3\frac{1}{2}$ h.p. water-cooled De Dion engine, are constructing two types of motor bicycles. One of these is of the Standard Minerva pattern, and has already been illustrated in these columns. The other has the motor arranged over the front wheel *à la* Werner. The power is transmitted through a crossed belt to the rear road wheel. The motor develops $1\frac{1}{2}$ h.p. at 1,500 revolutions per min. A mixing valve is arranged below the tank, and both the quantity of petrol and the quantity of mixture can be adjusted by vertical screws carrying finger discs on each side of the top tube. The end of the stem of the inlet valve is exposed, and an exhaust valve lifter is provided. Lubricating oil for the crank chamber is supplied from a pump conveniently situated to the left hand. A hand-applied band brake is fitted to the front wheel, and a foot-applied band brake to the rear wheel. The New Revolution Cycle Company, Limited, Loveday Street, Birmingham, are bringing out a bicycle fitted with $1\frac{1}{2}$ h.p. Mitchell motor, the feature being the employment of the New Revolution spring frame, which is claimed to reduce vibration to a minimum.

The Chapelle motor-bicycle, which was illustrated and described in the *Journal* in our report of the Paris International Exhibition of 1900, is now being introduced into this country by the United Motor Industries, Limited, of 42, Great Castle Street, W. The machine is made in two patterns, one having a two-speed gear and free engine and one having a plain belt drive. In both cases the motor is of $1\frac{1}{2}$ h.p., with both the inlet and exhaust valves situated on top of the head. The frame of the machine is of strong construction; the motor is located vertically in front of the bottom bracket, and in the case of the ordinary machine is connected with the rear wheel by a belt, the usual pedals and



FIG. 4.—THE "CHAPELLE" MOTOR-BICYCLE.

chain gearing being provided to start the motor and assist it on steep ascents. In the machine fitted with a two-speed gear no chain is provided, the pedals being connected with a spur wheel, which meshes with a pinion on the motor-shaft. An encased belt connects the rear wheel with the motor, which latter can be put out of gear by means of a device somewhat similar to that which was employed on the old Bollée—that is to say, the spindle of the rear road wheel is free to move under the action of a spring and lever forwards or backwards in slotted fork ends, so slackening or tightening the driving belt as desired. It is stated that the Chapelle, which has lately attracted great attention in France, holds the world's motor-bicycle records from one to one hundred kilometres.

The motor bicycle of the Crypto Works Company, Limited, 29, Clerkenwell Road, E.C., has already been referred to in these columns, but we may mention that the motor is supported on the lower cross tube of the frame. A special method of driving has been adopted, both the muscular power from the rider at starting, and the engine power, being transmitted through one chain. The bottom bracket chain wheel is mounted on a clutch on the axle: attached to the chain wheel is a large gear wheel, which meshes with a small pinion attached to the motor shaft. Means of readily throwing the engine in and out of gear are arranged. In the "Rex" motor-bicycle the engine—of $1\frac{1}{2}$ h.p.—is carried on the lower cross tube of the frame, the crank chamber being clamped to this and to the main down tube. The motor is of the air-cooled variety, the outer edges of the radiating ribs forming a square instead of a circle. From the engine shaft, the power is conveyed to a light metal pulley on the rear wheel by a small twisted belt. The machine complete weighs only 65 lbs., and can, it is claimed, ascend grades of one in ten without it being necessary for the rider to pedal. Messrs. Dennis Bros., Limited, Guildford, in addition to the "Speed King" motor tricycles and quads, have begun the manufacture of a motor bicycle. It is on the lines of the "Moto-sacoché," the motor being fitted in the diamond frame, and driving the rear wheel by means of a twisted leather belt.

THE accompanying illustration shows the new bicycle motor which has just been put on the market by the Century Engineering and Motor Company, Ltd., of Willesden Junction, W. This engine has been specially designed and constructed to meet the demand which has arisen for a practical article, capable of performing its work in an efficient manner with the least possible trouble to the user. The engine is of $1\frac{1}{2}$ h.p., and constructed upon the usual air-cooled principle with ample ribs or cooling surface. The bore of the cylinder is $2\frac{1}{2}$ in., and the stroke $2\frac{1}{2}$ in. The

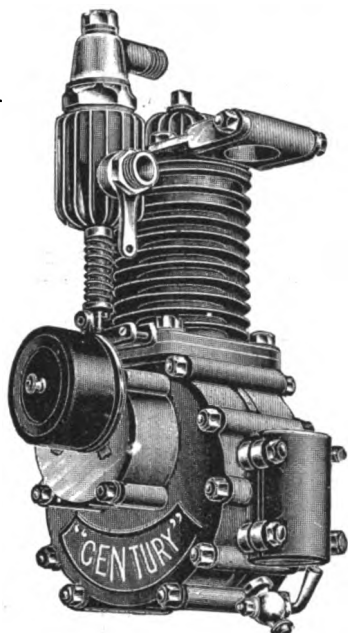


FIG. 5.—THE CENTURY BICYCLE MOTOR.

compression tap has been dispensed with, and in its stead a neat exhaust-valve lifter worked by a Bowden wire has been introduced, which answers all purposes and is invaluable for starting noiselessly and stopping, also for coasting, cooling the engine, and economising petrol on down grades. The inlet and exhaust valves are of serviceable dimensions; the crank chamber is of aluminium, and so designed that it is oil retaining. The ignition gear is strong and reliable, the make and break being of the positive not the trembling variety. The quality of the contact blade and contact screw is such that the company claim that these parts, with fair treatment, will last considerably more than 1,000 miles without requiring to be renewed or even adjusted. A 10-ampere accumulator of four volts and a Century induction coil are supplied with the motor, while the carburettor is constructed under the Century patent, the claim for which is that it is perfectly reliable even under the worst conditions of road and weather. An important adjunct to the motor is the throttle; by means of this the quantity of "mixture" admitted to the cylinder may be regulated without in any way interfering with the quality.

Several improvements have been effected in the New Courier motorette for two persons, made by Messrs. Frank Parkyn, Limited, Wolverhampton. It is now fitted with a $2\frac{1}{2}$ h.p. motor, the drive being taken from the motor-shaft by chain direct to a chain wheel mounted on an extension of the single driving wheel spindle. Two powerful band brakes are fitted, one on each side of the rear driving wheel. The Sparkbrook Manufacturing Company, Coventry, is another concern taking up the construction of motor bicycles, their machine being on the lines of the Kitto. Messrs. Thomson and Heard, Limited, of Chalk Farm Road, N.W., in their Mohawk motor bicycle have adopted the Derby system, using, however, a special cycle frame. Under the name "Meteor" Mr. E. Baedeker, of Farringdon Avenue, London, E.C., is introducing a new motor bicycle, in which the engine ($1\frac{1}{2}$ h.p.) is carried on the lower tube of the frame. Both the inlet and exhaust valves are at the top of the combustion chamber, the exhaust being worked by a rod, actuated by the usual cam, raising a rocking lever, which at the other end depresses the exhaust. The fly-wheel is outside the crank chamber, and is combined with V-shaped pulley, a belt, with jockey, conveying the power to the rear wheel.

ANOTHER new petrol motor specially designed for use on motor-bicycles is the Simms, made by the Simms Manufacturing Company, Limited, Bermondsey. It is of the vertical air-cooled type, and fitted with the Simms-Bosch magneto-electric ignition. The motor will develop 2 h.p. at 2,000 revolutions per minute. A simple timing gear is fitted in connection with the ignition, by which means the speed of the motor may be regulated to a nicety. The carburettor used with the engine is of a modified surface type, with splash plates to prevent change of uneven level in the petrol. In the bearings extra large wearing surfaces have been allowed, and all bosses properly stayed. The lubrication of the motor is automatic, thus obviating the necessity of constant attention to the oil pump. The motor may be fitted to any ordinary bicycle, and may be placed in almost any position on the frame.

We learn from Mr. D. Citroen that considerable improvement has been effected in the new model of the now largely used Minerva motor for bicycles. The new engine is claimed to give double the power on the brake of the 1901 pattern, being $1\frac{1}{2}$ h.p. The bore of the cylinder is 62mm., and the stroke 70mm. The compression has been increased one and a half atmospheres, the old compression being three atmospheres, whilst the new is four and a half. The inlet valve has been enlarged, and is now made to ensure a sharp closure with the minimum needful lift. The exhaust valve has been enlarged in proportion with the engine dimensions, and can be removed without unscrewing the piece carrying the sparking plug. A cementless sparking plug is used, which, it is claimed, has a very much longer life than the ordinary pattern. The thread has been kept to the standard De Dion, so that any ordinary plug can be fitted if desired. The guide in which the exhaust valve lifter slides is now not only made of hard steel, but it is also automatically lubricated from the crank chamber. The ignition apparatus has been thoroughly revised, and the trembler has been thickened where screwed to the crank chamber. The platinum screw has been reinforced, and the quantity of platinum in both screw and trembler increased. The trembler has been altered so that it is lifted by the ignition cam instead of being pushed, thus preventing the bending and breaking of the trembler. A new process of hardening the trembler has been adopted, which is a great improvement on the old one, ensuring thereby a longer life. An automatic oiling apparatus has also been fitted so as to admit of lubricating the engine from the saddle for over 100 miles. A proper tap for waste oil is now employed instead of the hexagon nut previously used.

Many attempts have been made to place before the public an apparatus that would minimise the danger of cycle riding amongst traffic in slippery streets. After a deal of trouble and expense the Empire Motor Company, of James Street, Oxford Street, W., claim to have succeeded in perfecting an apparatus known as the "Lifebuoy," that is not only an emergency support for use when riding in streets crowded with vehicular traffic, but it may also be used as an ordinary cycle stand. As will be seen from Fig. 6, it is a device for bringing a pair of side wheels into contact with the ground by a back-peddalling operation, further back-peddalling operating the brake. It can be easily attached to any type of machine, and is so simple in construction that a novice can master the mechanism in a few minutes. It should certainly be a useful adjunct to motor-bicycles, as it enables riders to seat themselves on the machine before starting the motor. Any motor-cycle fitted with this apparatus can be instantly brought to a standstill by switching off the current and a light back pressure of the pedals, which immediately places the support in position and at the same time operates a powerful band brake, thus allowing the rider to remain seated on the machine. As soon as the pedals are pushed forward the support

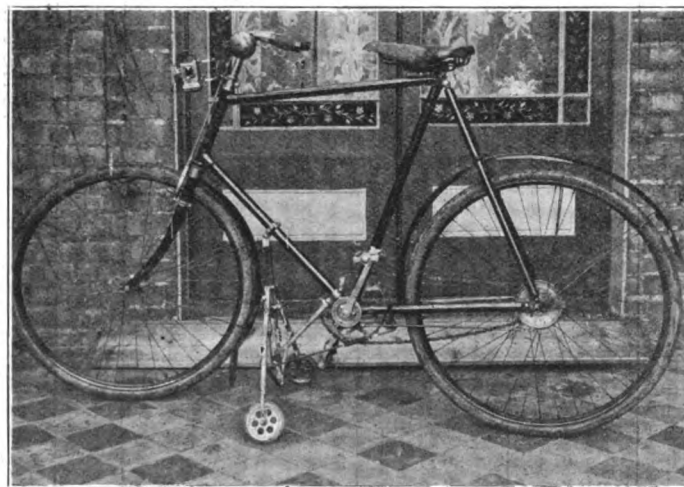


FIG. 6.—THE "LIFEBUOY" PORTABLE STAND FOR MOTOR-BICYCLES.

automatically goes back to its former position, out of contact with the ground. The Empire Company have also taken up the manufacture of motor-bicycles.

(To be continued.)

RANCHI, the headquarters of the Chota Nagpore Commission, and its neighbour Hazaribagh, are two stations in India whose charms have been considerably discounted in the eyes of visitors by their only being attainable after the ordeal of a long road journey in a conveyance known by the suggestive name of a "push push." We learn, however, that some enterprising gentlemen of Hazaribagh have combined in a project to start a motor-car service between the railway station at Giridih to Hazaribagh and Ranchi.

IMPORTS OF MOTOR-CARS, CYCLES, AND PARTS.

SO many foreign cars and cycles are at present being imported into this country that we have for some time been endeavouring to obtain some reliable information regarding such imports, and are now able to announce that in future we shall publish a monthly table of the number and value of the cars, cycles and parts imported. This table is being especially compiled for the *Motor-Car Journal* by the Customs authorities, and includes all the ports in the United Kingdom, so that its authenticity is undeniable.

Below we publish the list of imports during October last. The large total will, we fancy, come as a surprise even to those engaged in the trade.

Date.	Port.	Port whence.	Description.	No.	Value.
1	London	New York	Locomotives	3	465
"	"	Bremen	Motor car wagons	2	618
"	"	Paris	Motor cars	2	520
"	"	New York	Motor carriages	2	275
2	"	Brussels	Motor car	1	100
3	"	Antwerp	"	4	681
"	"	Boston	Automobile	1	140
4	"	New York	Locomotives	10	1,500
"	"	"	Automobiles	2	400
7	"	Bremen	Motor wagon	1	300
"	"	Brussels	Motor car	1	98
9	"	Antwerp	"	1	190
10	"	"	Electric motor	1	100
"	"	Boston	Automobile	1	170
"	"	New York	Motor-car Machinery	—	152
"	"	"	Automobile	1	200
11	"	"	Locomotives	9	1,440
15	"	Boulogne	Locomotive parts	—	300
"	"	New York	Automobile	1	200
"	"	Antwerp	"	1	70
17	"	Ostend	Motor car	1	220
18	"	Bordeaux	Automobile	1	150
"	"	New York	"	4	1,083
21	"	Ostend	Motor car	1	175
22	"	Antwerp	"	8	950
"	"	Ostend	"	1	222
23	"	"	"	1	200
24	"	Boston	Automobile	1	120
"	"	Rotterdam	Motor car	2	150
"	"	Boulogne	"	1	600
25	"	Rotterdam	"	1	70
"	"	New York	Auto-carriage	1	105
"	"	"	Automobile	1	200
26	"	Boulogne	Motor car	1	240
"	"	New York	" cycles	4 cases	100
28	"	Stettin	" carriage	1	308
"	"	Paris	" car	1	200
"	"	Bremen	" wagons	2	610
29	"	Antwerp	" cars	2	340
10	Liverpool	New York	Electric motors	—	40
16	"	Havre	Motor car	1	140
8	Dover	Calais	" carriage	1	1,000
1	Folkestone	Boulogne	" cars	2	640
"	"	"	"	1	200
3	"	"	"	1	220
"	"	"	"	1	220
4	"	"	"	2	410
9	"	"	"	2	920
10	"	"	"	1	200
11	"	"	"	1	1,000
12	"	"	"	2	480
14	"	"	"	1	600
15	"	"	"	1	350
16	"	"	"	1	648
"	"	"	"	2	640
17	"	"	" cycle parts	—	48
18	"	"	"	—	12
"	"	"	" cars	2	930
19	"	"	"	1	500
"	"	"	"	6	1,920
23	"	"	"	1	400
"	"	"	"	1	500

Date.	Port.	Port whence.	Description.	No.	Value.
24	Folkestone	Boulogne	Motor cars	2	400
25	"	"	"	2	360
26	"	"	"	1	200
28	"	"	"	1	210
30	"	"	"	3	720
"	"	"	tricycle	1	60
1	Newhaven	Dieppe	car parts	—	26
"	"	"	car	1	300
2	"	"	car parts	—	28
3	"	"	"	—	55
"	"	"	"	—	34
3	"	"	car parts	—	63
"	"	"	"	—	39
4	"	"	"	—	44
"	"	"	cars	2	640
5	"	"	car parts	—	28
7	"	"	"	—	12
"	"	"	car	1	140
8	"	"	"	2	1,112
"	"	"	car parts	—	18
"	"	"	"	—	216
"	"	"	car	1	340
9	"	"	car parts	—	20
"	"	"	"	—	30
"	"	"	cars	2	980
"	"	"	"	2	640
"	"	"	car parts	—	464
"	"	"	"	—	28
"	"	"	cars	3	800
"	"	"	"	2	560
11	"	"	cycle parts	—	29
12	"	"	car parts	—	16
14	"	"	"	—	480
"	"	"	car	1	110
15	"	"	car parts	—	74
"	"	"	"	—	18
16	"	"	"	—	4
"	"	"	"	—	2
"	"	"	car	1	324
17	"	"	"	1	340
18	"	"	"	1	320
"	"	"	car parts	—	14
"	"	"	cycle parts	—	10
19	"	"	car parts	—	76
"	"	"	"	—	55
"	"	"	car	1	800
"	"	"	"	1	132
"	"	"	cycles	2	60
21	"	"	car parts	—	85
"	"	"	car	1	280
"	"	"	car parts	—	2
22	"	"	"	—	8
23	"	"	"	—	6
24	"	"	"	—	40
"	"	"	car	1	320
25	"	"	"	1	120
25	"	"	car parts	—	2
"	"	"	"	—	54
"	"	"	cars	2	400
26	"	"	car parts	—	35
"	"	"	"	—	2
"	"	"	cycles	3	120
28	"	"	car parts	—	10
29	"	"	"	—	89
"	"	"	"	—	28
"	"	"	car tires	—	900
"	"	"	"	—	3,340
"	"	"	car parts	—	20
30	"	"	"	—	8
3	Southampton	New York	automobile parts	—	171
10	"	"	"	—	57
24	"	"	"	—	89
"	"	"	automobiles	2	250
"	"	"	motor cycles	2	175
"	Leith	Calais	motor car	1	120
14	"	"	"	10	1,200
21	"	Antwerp	motor bicycle	1	60
Total value -					£45,441

FURIOUS DRIVING CASES.



At the County Police Court at Peterborough, Mr. F. E. Burton, of Nottingham, was charged with driving a motor-car in the parish of Longthorpe, near Peterborough, on the 31st October, at a greater speed than twelve miles an hour. Mr. C. E. Welles Lucas, of Nottingham, defendant. The constable in charge of the case stated that he was on the road in the parish of Longthorpe on the 31st October last, when he saw the defendant driving a car at the rate of twenty-three miles an hour. In cross-examination by Mr. Lucas, he said he knew it was going at the rate of twenty-three miles an hour, because when the defendant was 560 yards away from him he pulled out his watch and timed him, and the defendant did the 560 yards in fifty seconds. He measured the distance from the place where he was to the place where he first saw the defendant and it was about 560 yards. His watch was at twenty minutes to three when he first saw the defendant, but he did not know where his second hand was at that time, nor could he tell where the second hand was when the defendant got to him. He timed the fifty seconds from the minute hand. Mr. Lucas objected that the defendant was charged with driving at a rate exceeding twelve miles an hour contrary to the Local Government Board Regulations and that such regulations had not been produced and proved, and, therefore, there could be no conviction. This objection was over-ruled, and Mr. Lucas then addressed the Bench for the defence. He pointed out the absurdity of a policeman who was no judge of pace and who had had no experience in timing speed, asking for a conviction on the evidence which he had given. Mr. Lucas said it was an impossibility for anyone to take the time of a man driving a motor-car from a point 560 yards away by such primitive means as the watch produced, which was not a stop watch. He appealed to the Magistrates not to take the uncorroborated statement of a policeman against that of Mr. Burton, who was a respectable citizen. Mr. Burton gave evidence and said that on the day in question his car was out of order and he could not drive it on the high gear, and therefore was driving on the second speed, and that he was not going when we saw the constable more than twelve miles an hour. The Magistrates dismissed the case.

At Bow Street, Albert Sheather, of Bourbon Street, Berkeley Square, was summoned for driving a motor-car to the common danger in the Strand. A police-constable stated that whilst he was assisting some ladies and children across the Strand from the Lyceum Theatre, a motor-car approached, which was driven by the defendant at the rate of about nine miles an hour. Witness held up his hand and shouted to the defendant to stop, but he took no notice. The ladies and children had to scatter in all directions to get out of the way. Defendant drove his car round witness, and did not stop until he collided with a cab. Defendant declared that he was not going more than five miles an hour, and said he did not see the policeman signal him to stop. Mr. De Rutzen imposed a fine of 10s., and 2s. costs, observing that if the police, whose duty it was to regulate the street traffic were disobeyed by drivers, no one would be safe.

At Cardiff, Mr. H. B. Widdows, one of the masters at the Grammar School, Cowbridge, was summoned at the County Police Court for furious riding on a motor-tricycle. P. S. Jones, Cowbridge, said the defendant passed through Abertthaw on the 2nd instant at the rate of sixteen miles an hour. Defendant, who said that he was only riding at the rate of nine miles an hour, was fined 25s., including costs.

At Huntingdon, Walter J. Hervey, of Newark, was summoned for driving a motor-car at a greater speed than twelve miles an hour at Brampton on October 13. Defendant did not appear. Police-constable Storey said that at midday on Sunday, October 13, he was near Brampton Hut and saw a motor-car coming from the direction of Alconbury at a fast pace. There were two gentlemen in the car, which he stopped, and he told them they were going too fast. The car covered 300 yards in 28 seconds, which was over 22 miles an hour. By the Bench: There were several persons about and the defendant slackened when witness held up his hand. The defendant wrote pleading guilty and apologising for the offence. It was his custom on meeting traffic or passing villages to slacken his pace. After the magistrates had retired the Chairman said he could not help expressing the Bench's opinion that this gentleman had treated both the constable and the county in a proper manner. He seemed to have taken the right view of the matter and they would mark their appreciation of that by fining him very moderately. They must inflict a fine, but he would only have to pay £1 1s. and 4s. costs.

In Edinburgh Summary Court, Arthur Brook, engineer, Greenend, was charged with having driven a motor-car on the public road between Nether Liberton and Liberton East Mains on September 30th at a speed of sixteen miles an hour, and driven the car on the Dalkeith Road, between Nether Liberton and the cross-roads at Liberton, twice on October 7th, at a speed of eighteen miles an hour. Superintendent Wright, the Deputy Chief-constable in Edinburgh of the Midlothian County Police, stated that in consequence of a complaint he instructed a couple of constables to detect the speed of the accused's motor-car. Constables Beattie and Macdonald brought out that they measured, by pacing, those parts of the Nether Liberton road mentioned in the charge, and they time the car on the three occasions. On the first occasion the speed was about sixteen miles an hour, and on the second occasion the speed of the car, both on the outward and return journey, was about eighteen miles. The accused, in his own behalf, stated that the car was geared for a maximum speed of fourteen miles. Expert evidence was called by

the defence to confute the evidence of the constables in regard to their measurements and timing. The Sheriff, in giving judgment, said, with regard to the first charge, where the constables only timed the car for a distance of a quarter of a mile, he would find it not proven, considering that it was very difficult for two men to be absolutely certain of the start and finish in so short a distance, and where a single second was of so much consequence. He was of opinion that the case had been made out in the other two charges, where the car was timed for three-quarters of a mile. Even had the constables made a mistake of two seconds this would not have reduced from eighteen to the statutory twelve miles. There were two grounds he had to consider in passing sentence, and these were that that was the first prosecution of the kind in Midlothian, and that the Prosecutor had not attempted to prove danger to the lieges. Had the contravention occurred in a crowded street the sentence would have been a very different one from that which he now passed—a fine of 5s. for each of the two offences.

Reported above are 6 prosecutions for furious driving. In 1 case the summons was dismissed, while in 5 cases fines amounting to a total of £3 1s. without costs were inflicted.

AN INTERESTING JUDGMENT.



The case of Young v. Bedwell was tried at the Cambridge County Court on October 23rd last before his Honour Judge Bagshawe, when he reserved judgment. It was an action by John Young, hay presser against Henry Alfred Bedwell, secretary of the Cambridge and Newmarket Autocar Company, Limited, for the sum of £5 18s., damages suffered by the plaintiff through the negligent driving by the defendant on May 27th, 1901, of a motor-car between Hedingham and Ridgewell. The defendant denied that he was negligent. His Honour's written judgment in the case was received on October 31st, and is probably one of the last he delivered, as his death has since taken place. It is as follows:—

"On further considering the evidence in this case, I continue of opinion that there was no evidence of any negligent or improper conduct on the part of defendant as driver of his motor-car, whereby the damage was caused which plaintiff sustained by the backing of a hay press, on the rear of which plaintiff sat, into a ditch. I have no doubt that the horse which was drawing the hay press and backed it into the ditch was frightened, and caused to back by the sight of the motor-car, but I find that there was no breach by defendant of any of the regulations imposed by law on the drivers of motor-cars, by the Light Locomotives Order of November 9th, 1896, nor of any other negligent or improper conduct. I find that he had seen the hay press some distance off as he came down a hill before turning a corner, which brought him ahead of the hay press; that by the time he was rounding the corner he had slowed down to four miles an hour; that as he rounded the corner he saw the horse which drew the hay press start and kick, and appear frightened; that he then stopped the motive power of his car and the noise it made; and that then his machine was brought to a stand about five yards ahead of the horse, which had then backed the presser into the ditch on defendant's rear, i.e., plaintiff's off-side of the road. I also find that no signal to stop had been made by the driver of the hay press. Under these circumstances I think the defendant cannot be held liable, unless it can be laid down as law that, whenever a motor-car, however moderately and properly driven, frightens any horse, its driver is liable for the consequences; but that, I think, cannot be laid down, as motor-cars are, clearly, when driven under proper regulations, legal occupants of high roads, and the only remedy for such risks as plaintiff encountered seems to me to be to train horses not to start at sight of a moderately-driven motor-car, which they do at many things to the sight and sound of which they have been left unaccustomed. I must make the costs follow the event, and, therefore, giving judgment for the defendant, must order plaintiff to pay his costs of the action."

THE DAIMLER MOTOR COMPANY.



The directors of the Daimler Motor Company, Limited, in submitting accounts for the year ended September 30th, 1901, state that the sales increased to £73,596. In the previous year they amounted to £63,737. A much larger business would have been done had there been a stock of completed cars ready for sale in the spring and summer of 1901. At that time there is a large demand for completed cars, and customers, as pointed out in the report for last year, declined to give orders for cars and wait several months for delivery when they can purchase cars elsewhere. A net profit is shown of £6,742. The greater portion of this profit is represented by cars and finished parts and work in progress, the value of which, including stores, etc., at the close of the year is shown in the balance-sheet as £48,717. This large accumulation of stock is explained by the fact that there was no stock of completed cars ready for sale in the spring of the year. The stock then in hand consisted almost entirely of finished parts. On April 10th, 1901, an extraordinary general meeting was held, at which the chairman (Mr. E. H. Bayley) announced the resignation of two directors (Mr. Thomas Bayley and Mr. Holt), and stated he "meant to remain on the board only so long as he saw the company would not suffer by his retirement." Acting on his advice, the shareholders elected Sir Edward Jenkinson to fill one of the vacancies. Subsequently Mr. E. H. Bayley sent in his resignation, and

Captain C. C. Longridge and Mr. J. S. Critchley were elected, and Mr. Thomas Bayley was re-elected by the board. At the commencement of the year the former directors borrowed £3,000 more on mortgage. The amount of the loan, therefore, now stands at £13,000. As working capital is now urgently required for carrying on the business of the company, the board propose to make an issue of five per cent. debentures.

THE MOTOR MANUFACTURING COMPANY.

ON behalf of the plaintiffs in the action by La Société des Anciens Etablissements Panhard et Levassor against the Motor Manufacturing Company, Limited, Mr. Walter moved, before Mr. Justice Farwell, for judgment by consent. Without stating the nature of the case, Mr. Walter said that his lordship had heard something about the matter in another action, not against the Motor Company, but against Panhard and Levassor. He had heard from Mr. Stewart Smith, who was briefed for the defendants; and the latter consented to an order for perpetual injunction, an inquiry as to damages, and to pay the taxed costs of the action. His Lordship made the necessary order.

MOTOR MANUFACTURER'S CLAIM.

MR. C. T. CROWDEN, Leamington, claimed £26 2s. from the Bournemouth Motor Company, Ltd., for work done by him in repairing six motor-car speed sleeves.—Mr. J. J. Parfitt, who represented the plaintiff, said the plaintiff had previously done work for the defendants, and they had paid at a higher rate than was now being claimed. Plaintiff stated that on the 16th January, 1901, he received from the defendant six motor-car change speed sleeves, which were to be altered and worked up as he had suggested. Witness had previously done similar work for defendants. The work on this occasion was of a highly technical nature, and to do it witness had to obtain special tools and employ trained men. Witness charged the defendants £3 10s. for each sleeve, 3s. less than he had previously charged them. He also charged 17s. each for six hardened speed wheels. Defendants did not appear, and judgment was given for the full amount claimed.

BREACH OF OMNIBUS BYE-LAWS.

AT Folkestone, Folkestone Motors, Ltd., were summoned for a breach of the Omnibus Bye-Laws in having no fares painted on the outside of a motor-car. Mr. English said the motor-cars had only recently been plying between Folkestone and Cheriton, and the board was being painted, a placard was placed on the back of the car. It must have either blown or had been torn off. They had no intention of breaking the bye-laws. A nominal fine of 1s. and 9s. costs was imposed.

DAMAGES FOR A DOG.

SIR CHARLES LAWES, who was recently ordered by the St. Albans city justices to pay the maximum fine of £10 and costs for furiously driving a motor-car so as to endanger the lives and limbs of passengers along a certain thoroughfare in St. Albans, was sued this week in the County Court by the owner of a pet dog which was killed by being run over by the motor-car on the same occasion. Judgment was obtained for the amount claimed—£10—and costs. After the accident to the dog Sir Charles wrote to its owner expressing sincere regret and stating that he would willingly make reparation for the loss; but after he had been fined by the justices he wrote to the purport that if he settled with the owner of the dog now he would be endorsing "deliberate perjury on the part of policemen and scandalous decisions of magistrates." Giving evidence in the case this week, Sir Charles explained that the accident to the dog was unavoidable. He did not dispute the speed at which it was alleged he was travelling—15 miles an hour—neither did he dispute the value of the dog, but he had allowed the case to come into Court in order that he might clear his character as a driver.

FAILING TO STOP.

AT Bristol, Richard Howard was summoned that, while the driver of a light locomotive, he failed to remain stationary when signalled to do so, on October 8. Mr. W. H. Wise said that on the day in question Mrs. H. W. Carter and Mrs. Duncan were driving in a carriage from the end of the Stoke Road to the end of Westbury Road. When near the top of Paddy Well Lane they observed a locomotive, driven by the defendant. As their horses showed signs of restiveness, the driver put up his hand for the locomotive to stop, and one of the ladies also waved her parasol for the defendant to stop. The horses were frightened, and turned back along the road upon which they had come. In reply to Mr. E. J. Pillers (who appeared for the defendant), the witness said the "locomotive" was a motor-car, and had accommodation for two. The defendant went into the witness-box and stated that he was going about three miles an hour when he turned the corner before meeting the carriages. When he saw the driver put up his hand, he put on the brakes and stopped. He was then about a hundred yards away. The bench said they were satisfied there had been a breach of the law, and the defendant would be fined 40s. and costs.

TO THE SCORCHER.

Oh, scorcher, who, bending forward, drives apace,
With melancholy stamped upon your face,
Pursuing Pleasure with a frenzied eye,
Yet mocked by her, however fast you fly,
Are you aware how horrible you look?
No guy invented for a picture book
Was ever a more painful sight than thou,
Lord of the bent back and the anxious brow.

Oh, sit up straight and try to wear a smile!
Be less intent to pile up mile on mile.
Enjoy the prospect as you ride along,
The trees, the sunshine, and the robin's song.
To us who view you scorching day by day,
Bent on your steering in such an awkward way,
You are the homeliest thing on earth, my lad.
Oh, sit up straight, and make the landscape glad!

The Motor World.

WHAT was it the voiturette? The fat spark.

WHY did the exhaust box? To silence her (silencer).

MR. C. JENATZY and Baron F. de Caters have entered their names at the A.C.B. as competitors in the 1902 Gordon-Bennett cup race.

A MEETING of the newly-formed Aero Club is to be held at 4, Whitehall Court, S.W., on Tuesday next, to approve the rules and to appoint an organising committee.

A REPORT from Stockholm, Sweden, conveys the news that the borough of Licksa, in Lapland, has asked Government permission to arrange a regular automobile service to the nearest railway station.

THE first Danish Automobile Exhibition is announced to take place at Copenhagen from April 11th to 27th next, under the auspices of the Danish Automobile Club and the Society of Industrial Arts.

ON the application of Mr. R. Macgregor Mitchell, the agent of Thomas Gourdie, blacksmith, Glenfarg, who is charged with having driven a motor-car against James Cross and four others, whereby Cross was killed, bail has been fixed for the release of the accused at £50.

RUMOURS of impending patent litigation in the American automobile trade are becoming rife. It is asserted that the Locomobile Company of America are about to begin proceedings against all other users of the side steering device, claiming infringement of their patents.

IN answer to several correspondents, who have asked for information *re* the quantity of glycerine to be added to the cooling water to prevent it freezing in cold weather, we may mention that it is usual to use one part of glycerine to every four of water. A little carbonate of soda may also be added to nullify any possible acidity of the glycerine.

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COMMENTS.



THE War Office motor-lorry trials, the programme of which was outlined in our last issue, commenced on Wednesday with only the disappointing number of five vehicles present for the competition. These vehicles were:—A Foden, a Straker, and two Thornycroft steam lorries, and a Milnes internal-combustion car. The Foden and Straker vehicles are described in another part of the present issue. The Milnes, which is fitted with a 25 b.h.p. four-cylinder motor and has a capacity of five tons, comprises a number of special features, the fuel employed being common heavy kerosene. The engine is started with petrol, and as soon it gets warm the spirit is turned off, and thenceforward only heavy oil is employed. This is effected by the use of two carburettors, one for the refined spirit and the other for kerosene. So far as could be seen on the first day the car travelled very well and great hopes are centred on the success of the vehicle. One of the Thornycroft lorries is on standard lines, but the construction of the second is somewhat novel, inasmuch as the motor is carried over the rear wheels of the vehicle and strikes one at first as looking somewhat strange. It is claimed that it is specially adapted for use on rough roads and uneven ground. Only some half dozen private cars were on the ground on Wednesday evening. The vehicles are stored in the magnificent electrically-lighted shed of the Royal Engineers, where Captain Lloyd, Colonel Crompton, Colonel Holden, and others were all busy seeing to the loading and weighing of the vehicles. The practical road tests commenced on Thursday. These are to be of a most exhaustive character, and will not be concluded until Saturday, the 14th inst., while during the following week a series of speed trials, manœuvring tests, rough country tests, hill-climbing and brake tests (unloaded) are to be carried out.

Moderate Speed.

THE Automobile Club has adopted a suggestion made by Colonel Crompton that in view of the increased number of convictions for furious driving, and of the public misapprehension of the facts in connection with these convictions, the Club Committee should issue a circular to all members of the Club, pointing out that the chance of the speed limit being removed by Act of Parliament must depend greatly on the behaviour of motorists, and begging members to drive at a moderate speed, and to use their influence to induce owners of cars who do not belong to the Club to co-operate with them.

Next Year's Cars.

It is, perhaps, hardly the thing to discuss next year's cars till after the Paris show, but there is, of course, little that is not already known about the 1902 models, the conditions of automobile manufacture demanding an early preparation for the coming season. A consideration of the general line of development during the past year shows an increasing tendency

to uniformity of design and arrangement, not, unfortunately, yet accompanied by any great advance towards standardisation of parts. The light car is steadily growing in size, power, and popularity, till, except in the matter of luxurious seating accommodation, there is sometimes little difference between it and the heavier vehicle it has superseded, though the ever-present tire question will probably be effective in preventing its overgrowth.

The Question of Durability.

AND herein is a point hardly fully appreciated by some of our own makers, who in the reaction against over-lightness hardly realise sufficiently that there is a more serious objection to weight than the mere question of useful load percentage, or even of speed. Both these points, as far as the utilitarian purchaser is concerned, may well give way to the more important quality of durability, and it cannot be forgotten that such purchasers will form the mainstay of the industry, though the sporting motorist, who changes his car oftener, perhaps, than most people do their bicycles, may be contented with "a short life and a merry one" for it. But the former even will not be satisfied if his car is too heavy for economy as regards pneumatics, and every legitimate means of dispensing with weight is necessary. This would seem a point unnecessary to labour, but that grave excesses in such matters as coach-work are still not unknown. Pneumatic cushions, for instance, might well replace heavy springs and stuffing, and when it comes to such things as hoods and glazed fronts, undoubtedly desirable for an all-weather car, improvements are much needed, and it does not appear that in this country at least they can be expected from coachbuilders.

Trials of Electrical Vehicles.

A CONFERENCE between manufacturers and sellers of electrical vehicles and members of the Club Committee was held at the Automobile Club on the 20th ult. A long discussion ensued, after which it was agreed that the Club Committee should be invited to appoint a Committee to advise the Club Committee specially on matters affecting electrical vehicles. It was decided to defer consideration of matters in connection with the trials until after the appointment of this Committee. The Club Committee authorised the Standing Committee to select names and appoint the Committee above referred to, on the understanding that its functions should be purely advisory and not executive.

Cruelty to Horses.

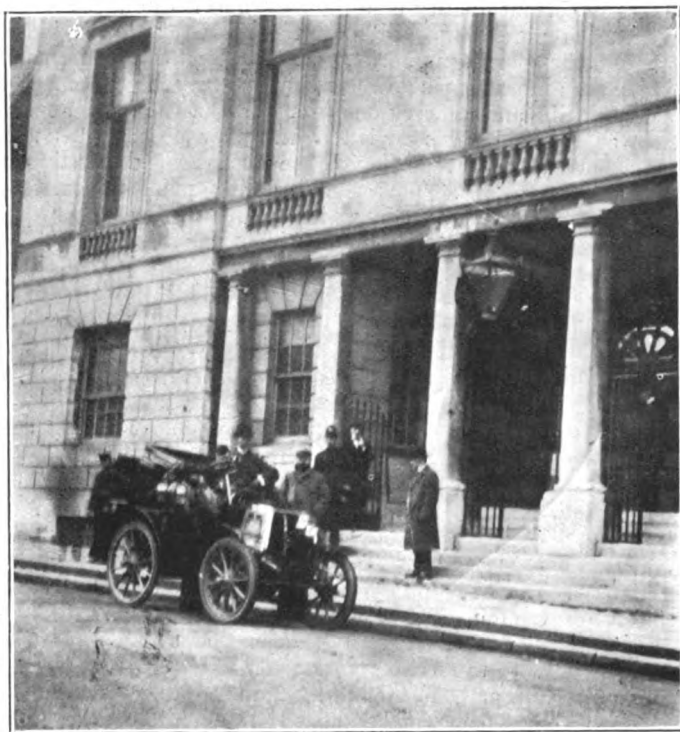
AT Dover the other day a London bailiff was fined for cruelty to a horse. It was stated that he started at 9.30 at night from Wood Green, in the north of London, to drive to Dover—a distance of seventy-nine miles—and that the horse was not taken out of harness the whole of the journey. The animal was subsequently driven about Dover until it fell down exhausted. This is an exceptional case, but the general adoption of automobiles would save us from hearing of many cases of wanton cruelty.

The Control of Horse-Drawn Vehicles.

WHILE referring to this matter we cannot refrain from mentioning a case in which two horses (belonging to the firm in which Mr. Arthur H. Ashworth, the hon. local secretary for Bolton in connection with the recent trials of the Liverpool Self-propelled Traffic Association, is a partner) were killed. Three horses attached to a lorry carrying material weighing five tons were descending a steep declivity at Eagley, near Bolton. A "slipper" brake had been applied to the hind wheel in addition to the ordinary brake being brought into use. As the horses moved the chain holding the slipper snapped, and the lorry dashed off, passing over two of the horses and crushing the man in charge against the wall. This unfortunate incident bears out the report of the judges at the Liverpool trials, which declared that motor-cars were better for manoeuvring on hills than were horse-drawn vehicles. When descending hills the normal speed of motor-cars can be maintained without locking a wheel or using a slipper, thus obviating any such risk as is incurred every day by heavily-loaded horse-drawn lorries in hilly districts.

Good News from Brighton.

WE are glad to hear that the Brighton police are taking a reasonable view of motoring, and the accompanying photograph of the new Chief Constable of Brighton on Mr. Muhlenkamp's car is of general interest. Mr. Muhlenkamp recently took the Chief Constable for a short run, and the latter expressed himself as highly delighted with the experience. For



the sake of the good relations now existing between the local motorists and the Brighton police automobilists visiting the town should drive carefully along the King's Road and in and out the boundaries of the borough. This is a gentle hint that we hope will be taken in good part by all motorists journeying that way.

The Humours of Motoring.

THE members of the Royal Scottish Society of Arts met in Edinburgh last week, when the Rt. Hon. Sir J. H. A. Macdonald made some observations on motor-car accessories, and said that it was not a nice thing when one entered a motor-car to set his foot on a petrol can or water tank, and to find

the interior in chaos with small packets. The usual thing a motor-vehicle did when it stopped on the road, according to his experience, was to tumble everything outside higgledy-piggledy; while those in charge would take off nuts, lay them down in all sorts of places, and when the repairs were finished and all was ready to start again the essential nut would be found wanting. The Lord Justice Clerk of Scotland showed a number of clever devices for protecting the switches and gearing, as well as a tool bag, a method of rolling the spare tires and using them as foot-stools, a petrol storage can, luggage carriers, etc.

The Value of Union.

THE value of organisation is sufficiently apparent in many departments of activity, and it has just been demonstrated in an effective way with regard to motorists. Some time ago the Hon. Leopold Canning was motoring in Ireland when an accident happened to a milk-cart fifty yards distant from his car. Mr. Canning was summoned in connection with the matter, and he very wisely placed the matter before the Motor Union. That body decided that if Mr. Staplee Firth, an English solicitor, would be permitted to take up the case in an Irish county court he should defend it; otherwise the Union would contribute not less than five guineas towards the cost of the defence. This decision, on being communicated to the prosecution, had an excellent effect, for the case fell through, and Mr. Canning has given public testimony to the value of the offer made by the Motor Union.

An Old-Time Tatler.

NEWSPAPER enterprise in connection with the recent run to Southsea was hardly so apparent as in previous years, but the *Tatler* did exceedingly well with its illustrations. In addition to a photo of the two ladies who were referred to by "Lollius" as being the most effectively attired, our gossip contemporary had a photo of "the halt on Portsdown Hill," showing the scene at a well-known inn just outside Southsea, on the arrival of some of the vehicles. Seeing that the cars travelled *via* Cosham and avoided Portsdown, the *Tatler's* photograph appears all the more remarkable. To photograph any of the cars on the day of the run was a difficult matter; but to get a photograph showing the cars at a place which they never passed must have necessitated the employment of much skill. In fact we have an idea that the particular photograph reproduced in the *Tatler* on the 27th ult. was taken in November, a year ago. But the public did not mind.

To Remove Restrictions

APPARENTLY the Bexhill District Council is anxious to promote the popularity of the local motor service, and representations are to be made to the Hastings Council to get certain restrictions removed. On its part the Bexhill Council is prepared to adopt a give-and-take policy. At the present time, unless a passenger from Bexhill has a return ticket, purchased at Bexhill, he is unable to avail himself of the cars when returning. This is a great inconvenience and we hope the difficulty will soon be settled.

Mr. Lorkin's Resolution.

A WHOLE Empire and a great industry are waiting to hear the verdict of the Winslow District Council on the subject of motor-cars. Winslow, it may be added, is near Aylesbury, and one of its energetic and observant councillors is named Lorkin. Now Mr. Lorkin has testified in council assembled that he has "witnessed what might have been (but, we notice, were not) very serious accidents through the carelessness of motor-car drivers." And having witnessed what might have been Mr. Lorkin said he proposed to move a resolution on the subject—but, so that the matter should not be too sudden, he intended to do it at the next meeting. We await with interest

the next meeting, and an anxious Empire lists for the words of Councillor Lorkin.

British v. Foreign Cars.

A LETTER has been appearing in the general press in which is given a criticism of British v. foreign motor-cars. It is shown that the prejudice of a class discouraged the automobile pioneers of the early years of last century just as a similar ignorance now endeavours to thwart the progress of the movement. But the writer is also critical with regard to motorists themselves and wonders why there is a preference for cars of foreign make. He declares that the British car has all the good points of the foreign vehicle, while the material and workmanship of the latter will not bear comparison with the home-made article. This is a matter which is steadily righting itself, and the success of British-made cars in recent Runs and Trials has done much in the interests of the British industry.

The Anniversary Run Prizes.

At the last meeting of the Committee of the Automobile Club it was reported that, owing to the fog, competitors in the Anniversary Tour had not been able to examine the vehicles with a view to voting for Mr. Cordingley's prize. Only a very small number of votes had been received. The Committee decided that Mr. Cordingley should be asked to withdraw his prize and to offer it in connection with some future event. It was also decided that Mr. Edmunds' prize for the driver of the car which made a non-stop journey and arrived last of non-stop cars at the several controls should be awarded to Mr. W. Whiteway's Decauville "Slowcoach."

Engines for Motor-cars.

At a meeting of the Leeds Association of Engineers, Mr. F. G. Heseldin gave an interesting paper on "Internal Combustion Engines for Motor-cars." Since 1895, he said, when M. Panhard startled the world by his famous ride from Paris to Bordeaux, 744 miles, at an average speed of 15 miles an hour, the internal combustion spirit motor had proved itself without a rival for the propulsion of vehicles long distances at high speeds. The chief features of the engine were described in detail, and it was pointed out that the size of the wearing surfaces in many cases was quite inadequate, resulting in frequent break-downs and rapid wear. Improvements, Mr. Heseldin said, might be expected to be made in better balancing, the increasing to a considerable extent of the wearing surfaces, and the complete substitution of electrical for tube ignition. In the discussion which followed, several speakers pointed out that when a motor-car was purchased the fact was often overlooked that an intelligent appreciation of its working parts, together with a due amount of attention, was necessary to obtain satisfactory results.

The Aero Club.

SIR VINCENT BARRINGTON presided on Tuesday afternoon over a meeting held at the Automobile Club of the candidates of the Aero Club of the United Kingdom. The chief business was to appoint a temporary organising committee, to elect members, etc., and the proceedings would have been expeditious and harmonious alike but for the time wasted by one or two gentlemen whose proposals found no support, but who nevertheless absorbed the greater portion of the time of the meeting. In the end, however, the following were unanimously appointed as a temporary organising committee, the permanent officers to be elected in 1902, after the club is fully organised:—Sir Vincent Kennett Barrington, Sir David Salomons, Sir Claude de Crespigny, the Hon. John Scott Montagu, M.P., the Hon. C. S. Rolls, Colonel Templer, Colonel Crompton, Major Trollope, Captain Laycock, Lieut. Spaight, Dr. Boverton Redwood, Mr. B. Redwood, Mr. Paris Singer, Mr. A. M. Singer, Mr. Mark Mayhew, Mr. Frank Butler, Mr. Campbell Muir, Mr. Hugh Weguelin, Mr. Roger Wallace, K.C., Dr. Hutchinson, Mr. A. Paget, Mr. Nep-

tune Blood, Mr. Patrick Alexander, Mr. A. Pollock, and Mr. Claude Crompton, or twenty-five in all.

Civility Costs Nothing.

It is reported that the latest police dodge is for one of a duly-arranged pair of constables to bestow what appears to be an approving official salute on the peccant motorist, said action being the signal for Bobby No. 2 to take the time over the measured (?) distance. This recalls the old story of the French general, who meeting a brother-in arms on the field of battle, was making a ceremonious bow when he was just missed by a cannon-ball, which passed where his head had been a moment before. All the comment he made on his narrow escape was, "You see, one never loses by politeness." And if the motorist, in his turn, bears that maxim in mind, and devotes a due and sufficient pause to the acknowledgment of official courtesy, the truth of it will probably receive a double exemplification. Politeness, we may admit with regret, is not always a national characteristic of ours; but certainly such a misuse of it is un-English in the highest degree.



MR. PERCY RICHARDSON ON HIS DAIMLER CAR.

British Aeronautical Society.

THE opening meeting of the winter sessions of the Aeronautical Society of Great Britain was held on Tuesday evening at the Society of Arts, Adelphi. Mr. Eric Stuart Bruce, the Hon. Secretary, read a paper, prepared by Sir Hiram Maxim, on aerial navigation by bodies heavier than the air. In the paper Sir Hiram Maxim bore testimony to the personal pluck of M. Santos Dumont, who had taken advantage of the new and extremely light petroleum motors. He did not think there was much possibility of greatly improving upon what M. Santos Dumont had already accomplished. He had advanced the science further than it had gone before—in fact, they had come very near the boundary line beyond which it would be impossible for anyone to go. He described in detail the principles of construction of his own aeroplane and the accidents which befell it. He was strongly of opinion that very much better results could now be obtained with petroleum motors than he obtained with the assistance of steam. Mr. Wm. Marriott next read a paper on atmospheric currents, and this was followed by one by Mr. Eric Stuart Bruce, on navigable balloons and the scientific aspects of M. Santos Dumont's experiments. Having traced the history of the experiments made from time to time, and described the feat accomplished by M. Dumont, he said that he was the first who had steered a balloon from a given point around a given point and back within a given time. At the time he started the force of the wind was $4\frac{1}{2}$ metres per second, and when he rounded the Eiffel Tower it had increased to 6 1-10 metres per second. He

advocated the carrying of parachutes on experiments of this kind in future in the interests of the safety of the aeronauts.

Motor-Balloons to Order.

M. SANTOS-DUMONT'S daring flights have induced the Motor Power Company to make flying machines or steerable balloons for sale. Their production is called the Napier Flying Machine, and according to a letter received this week, they are prepared to take orders at once. The balloon will be 75 ft. long by 25 ft. greatest diameter, having a capacity of about 25,000 cubic feet; it will be fitted with air-bag for equalising the pressure. The under-frame will be 50 ft. long, and take the form of a latticed girder, made of aluminium or other suitable material. The motive power will be supplied by a Napier four-cylinder water-cooled petrol motor, with electric ignition, to give not less than 14 h.p. on the brake, connection with the propelling shaft to be by means of a friction clutch as used on motor-cars. Steering will be controlled either by a rudder or by altering the direction of the propeller. The propeller will be designed as may be found best with due regard to speed and power of motor, while an air-pump for maintaining pressure in balloon is to be arranged to drive off motor. The lifting power of the balloon, after subtracting its own weight, is estimated at about 1,400 lbs. From America also comes the news that for a retail price of £400 a machine which will be an automobile on terra firma and a flying machine in the air will be placed on the market within the next half-year by Mr. Gustave Whitehead, of Bridgeport. The Whitehead vehicle is operated by steam, and immense wings and a propeller move it through the air. It also has an automobile running gear, upon which it is speeded along the road until it has secured sufficient momentum to rise in the air, and upon which it again runs when it is brought to earth from the air. Whitehead says that when he first conceived the idea of a flying machine he noticed that birds run a few feet on the ground to gain headway before soaring, and he thereupon allied his invention with motor-cars for that reason. He is confident that his apparatus can make forty-five miles an hour. But *qui vivra verra*.

Brake Tests.

AT a recent meeting of the Committee of the A.C.G.B.I. the Secretary suggested that, in reference to the legislation question, a trial should be organised by the Club of twelve vehicles of varying types on, say, Hartford Bridge Flats, in the presence of the inspectors of the Local Government Board and the Justices of the Peace, with a view of obtaining accurate and incontestable records of the space within which a motor-vehicle can be stopped when driven at high speeds. He suggested that the vehicles should be driven over a mile, and the speed of the vehicle should be thus ascertained, and that witnesses on board the vehicle should certify that the speed of the vehicle remained unaltered until the signal was given for the vehicle to stop. The Committee decided that the suggestion should be adopted. It was also suggested that if possible this trial might be also utilised for demonstrating how impossible it is for bystanders to accurately gauge the speed of motor-vehicles, and it was agreed that if the Standing Committee found it feasible to carry out this suggestion it should be adopted.

The "Competent Repairer."

THE problem of the supply both of mechanics and repairers is one that may be expected to grow more acute with the ever-increasing use of motor-vehicles, while as yet no organised attempt to meet the question has been made beyond the mere cataloguing of such repairers as can obtain some testimonials to their ability from practical motorists. Really skilled drivers will probably remain for some time scarce enough to command a premium, and the majority of owners are necessarily content to provide or obtain some sort of training for their own men, in lieu of employing a qualified mechanic, at the risk of their making use of their newly-acquired know-

ledge to seek a better position. It is the more important in consequence that the services of a skilled motor mechanic should be available in every town, but the methods of attaining this desirable end have hardly yet been considered. It is not easy to get practical experience with the numerous and ever-growing variety of cars, and it is to the manufacturers of these rather than to any others that we should look for an attempt to meet the circumstances. An itinerant instructor, visiting the more promising of the local repairers, might do a good deal by instilling a more accurate knowledge of his type of vehicle, while the fact of such a method of benefiting the users thereof being adopted would be a good advertisement. We fear, however, that there is too little direct profit in the idea to appeal to British makers, though it would not be surprising if some of their Transatlantic rivals were to adopt it.

Versatility of the Automobile.

THE versatility of the automobile is second only to its ubiquity. We have heard of it in the desert, on mountain peaks, never trodden by horse's hoof, and seldom by the foot of man, and one is at present on its way to the North Pole. The uses to which it has been put are as varied as its travels. It can catch a thief or a horse-stealer, drive a threshing machine or chaff cutter, and generate power for an electric searchlight on a battlefield. But, perhaps, the most ingenious use to which it has yet been put is that discovered by some French poachers, who are with its aid well on the way to ridding their part of the country of its game. The motor-car is driven into a wood at night, and a powerful acetylene lamp with which it is provided set going. The birds of the air are immediately attracted by the brilliant light, and on approaching it are easily taken in nets. A record bag secured in a minimum of time, the poachers avail themselves of the high speed of their vehicle to place a safe distance between the scene of the *battue* and the disposal of their spoil. Operations are simplified by a trespass being quite unnecessary. The strong light exhibited anywhere near a wood is sufficient to attract the game in flocks.

Automobile Law in Portugal.

ALTHOUGH the motor-car is at present more conspicuous by its absence than its presence in Portugal, legislators have wisely framed laws which will regulate its inevitable circulation. Speed must not exceed thirty kilometres per hour in the open, or ten kilometres in towns, villages, or down hills. Two brakes must be fitted to all vehicles, each in itself capable of holding them on the steepest hill. Vehicles of over 350 kilos in weight must be fitted with a reverse motion. All must carry two side-lights, a green and a white, and when a trailer is used that must also carry a red rear light. Number plates will be carried by all, and both driver and vehicle must obtain a certificate, the former of his efficiency to handle his machine, and the latter in proof of government requirements complied with. A fine of ten to one hundred francs is the penalty for a breach of any of the regulations. Road-racing is allowed subject to permission from the governors of provinces through which the route selected passes.

A PROPOSAL has been brought forward in Paris to form a Société de Technique Automobile.

WHEN did the piston ring?—When it heard the band brake.

WHEN was it the wheel spoke?—When it felt the tire rub her (rubber).

IT is now announced that from March 1st, 1902, a motor-car parcels post service will be established between Manchester and Liverpool, serving Warrington and Prescott *en route*. At present the service is being carried on with horse vehicles, but the authorities have entered into a contract with the Motor Haulage Company by which the new arrangement is to come into force.

THE FODEN STEAM WAGON.

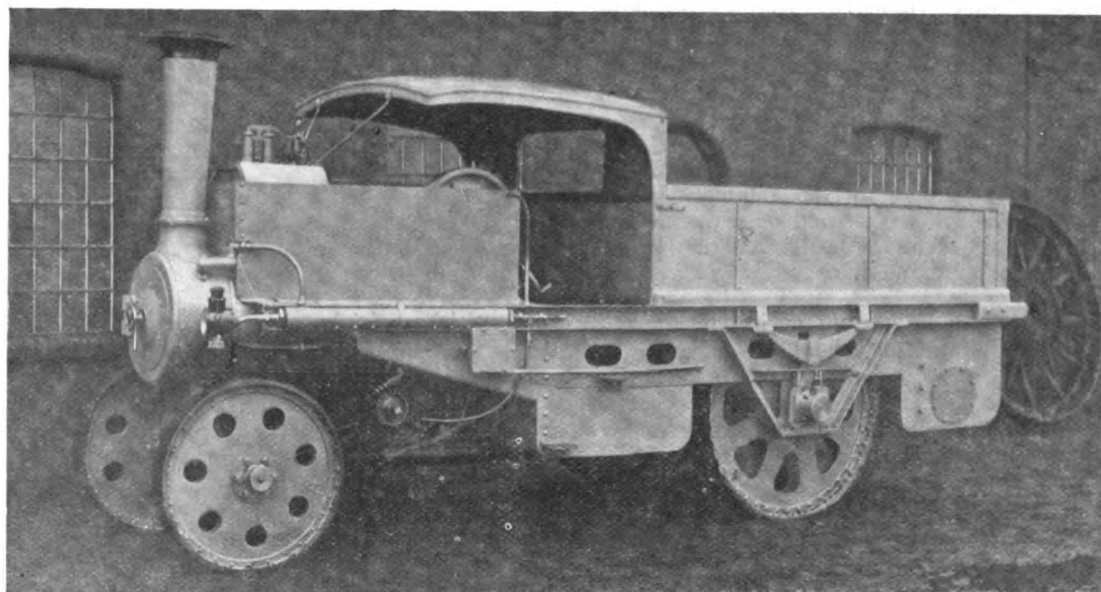
THE general design of this steam wagon made by Messrs. E. Foden, Sons and Company, Ltd., of Sandbach, and illustrated herewith, is of a novel and original character. The boiler, which is of the horizontal multi-tubular type, forms the front part of the frame work. The sides of the frame are constructed of strong channel steel tied and braced together in such a manner as to secure great strength in the complete lorry. The main platform of the vehicle is 9 ft. 4 in. by 6 ft. 4 in., and below this is another platform, or well, 9 ft. long by 2 ft. 9 in. wide by 15 in. deep, which can be used conjointly with the top platform, or separately, as a secret chamber for ammunition or valuable goods. The boiler is fired with coke or coal, but can easily be arranged for oil combustion. The wagon is driven by a compound steam engine fixed on the top of the boiler, so as to be readily accessible, and to work with "dry" steam. The cylinders are 4 in. and 6½ in. diameter, and are fitted with a patented high-pressure gear, by means of which both cylinders can in case of emergency receive live steam from the boiler, and each cylinder exhaust independently into the chimney. The reversing motion is of the ordinary link type, and the whole construction of

CONTINENTAL NOTES.

BY "AUTOMAN."

LAST week whilst the *Journal* was going to press the exciting competition for the record speeds for the Hill of Gaillon and also for the level mile were still continuing, and I was only able to send a little note, telling the brief results of the first of these two competitions, which left Rigal at the head of the list for motor cycles, both for the kilometre on the level and the Gaillon Hill. The tricycle on which Rigal has made these wonderful records is made by Darracq, but has a 16 h.p. Buchet motor. Late on the afternoon of Tuesday Rigal tried to lower Osmont's record for the flying mile, but unfortunately a passing carriage caused him to slow down, when he left Osmont's record unbroken.

THE object of these fights for records is self-evident; it is Buchet and De Dion who are struggling to have the best time on record for their motors when the Exhibition opens, and up to the last we may expect this struggle to continue. Such a competition has not occurred since the days when Jenatzy beat the Count de Chasseloup Laubat by thirty-four seconds, and esta-



GENERAL VIEW OF FODEN STEAM WAGON.

engine and steering arrangement is so similar to the Foden traction-engines that any ordinary traction-engine driver can, it is claimed, easily handle the wagon. The power is transmitted by a pair of spur wheels acting on a cushioned compensating gear by two extra strong block chains working side by side. The gearing is arranged for two speeds—9 to 1 and 24 to 1.

The boiler is fed by two pumps, one driven by the engine and the other a separate independent slow double-acting single-cylinder pump, which can be regulated from 2 to 150 strokes per minute. The road wheels are made with cast steel hubs and double dished steel-plate sides, with ¾ in. lapping plate, and shod with steel diagonals 2 in. by ¾ in. The car is mounted on laminated springs, with angle axle guards containing the sliding axle boxes, similar to those on the modern railway carriage.

VISITORS to the Salon de l'Automobile, shortly to be opened in Paris, will find, in addition to the usual good show of motor-cars, some extra attractions this year in the form of air-ships and balloons. M. Deutch's steering balloon, the military balloon, *La France*, and several devices of a similar nature will be on view, as well as many models, designs, and illustrations connected with the same science.

blished a record which it was thought at that time would never be beaten. Now, however, Jenatzy's record is left behind by the tricycles, which look as though they were going to be the fastest vehicles on the road.

WHAT adds interest further to the struggle is the great publicity that has been given to the Buchet motor by its being used in Mr. Santos Dumont's successful air-ship, which has raised such polemics before the Committee of the Aero Club, of which the Count de Dion is a leading member. Each of the competitors is straining every nerve and using every skill and artifice, and the public may calmly look on under the absolute certainty that this fierce competition will bring a benefit to the trade by forcing both these firms to create the best possible motor. It resembles the duel between Panhard and Mors, which has lasted so many years, and which has produced in a very short time a vast progress in automobiles. The *Auto-Velo* has now come forward with an offer of a gold medal for the highest speed attained by any vehicle for a distance of at least one kilometre.

ON Wednesday last week Osmont set to work to lower the record for 100 kilometres on the track, and was more than

successful until, at the 86th kilometre, his pneumatic tire burst, and he was obliged to stop. He was literally frozen. The long-distance records on the track must, I think, be a thing of the past, on account of the fearful wear on the pneumatic tires round the turns. The fact is, a set of tires is used up before a record can be obtained, and it becomes a serious danger to the rider.

THE Union Automobile de France has been liquidated, and the dispute between it and the A.C.F. therefore falls to the ground. There were, however, some good ideas brought forward by the defunct society, although the Committee was foolish enough to fall foul of the A.C.F. and get their organisation excommunicated. The A.C.F. now proposes to take up some of these ideas, and endeavour to put them into successful operation. The Committee has decided to form a new group which will be affiliated to the A.C.F., and which will have a smaller subscription in order to enable the great mass of *chauffeurs* and also provincial automobilists to become members.

THE Swiss Automobile Club has just decided to enter for the Gordon-Bennett Cup for 1902 from Paris to Bordeaux. The challengers are therefore so far, the Belgian, German, and Swiss Automobile Clubs. Germany will no doubt be represented by a Mercedes, and Belgium has several go-ahead manufacturers, and rumour says that Dechamps, who so pluckily contested the Paris-Berlin and the Gaillon Hill competition, will come forward with a new car, and try to wrest the Gordon-Bennett Cup from France.

THE Bordeaux Automobile Club held a hill-climbing trial last Sunday, during which a Serpollet 6 h.p. car driven by Barbereax did the best time, climbing up the 450 metres of 15 per cent. slope in 52sec. Taylor was second on a Korn 6 h.p. carriage, in 1min. 55sec. A 7 h.p. Peugeot and a 4½ h.p. Renault tied for the third place, in 2min. 2sec.

AN international hill-climbing trial in Switzerland seems thoroughly appropriate, and no difficulty should be approved in finding a hill-road with very steep, long, and straight gradients. The Swiss Automobile Club has, therefore, decided to organise next year an international hill-climbing trial, and has written to the A.C.F. asking for its co-operation, which will no doubt be given.

ITALY is the first country to seriously undertake a motodrome. An influential committee has been formed with the object of studying a project for the construction of a velo-auto-hippodrome. The spot chosen is at Monza, about nine miles from Milan, and it is said that the purchase price of the land has already been guaranteed by two rich gentlemen of that town.

AN engineer of the name of Kress, an Austrian, is working on an aviator. In his machine, as the name conveys, he does not employ hydrogen or any gas lighter than the air in order to diminish the comparative weight of his machine with the air, but trusts to powerful fans to raise the machine in conjunction with aeroplanes. He employs a Mercedes motor of 35 h.p. Mr. Kress is determined to continue the trials of his aviator on the Lake of Worth.

TALKING about aviators, I cannot help alluding, before passing from the subject, to the little note from Mr. Sydney H. Hollands with regard to my report on the Exhibition of Aviators held at the Parc des Princes some few weeks ago. My report of this show was not adverse in any way; all I could do was to report without fear and without favour what there was to be seen, and I can assure Mr. Hollands, who seems to have constituted himself as the "guardian angel" of aviators, that as soon as there is the slightest possible success in this direction to be recorded I shall hope to be one of the first to chronicle it if it comes within my Continental Department.

Later news from Italy informs me that in the race between

the Duke d'Abruzzi and M. Coltelletti, of which I have given the readers of the *Journal* an account in last week's issue, the breakdown of the Duke's car was not caused by a stone in the middle of the road, but by the motorist trying to avoid a hippo mobile coming round a corner. The Duke, it seems, was going strong, and only a few hundred yards behind his competitor, when, turning a sharp corner, he saw a carriage coming in the opposite direction at a great speed. In order to avoid a collision he suddenly swerved his car and struck a milestone, so damaging the car that, although a repair was attempted, it was soon seen that it would be impossible to continue. The Duke, I understand, is not discouraged by his accident, and means to issue another challenge very soon.

AN Italian, Count Almerico da Schio, is said to be making an air-ship after the style of the Deutsch prize winner. The hydrogen chamber is to cube 700 metres and to be 33 metres in length by 6½ metres in diameter. It is to have an aluminium keel which will accommodate three passengers, and a Buchet 12 h.p. motor, weighing 78 kilos.

ACCORDING to a telegram received from Vienna, permission to run the great motor race between Paris and that city has officially been granted by the Austrian authorities. No application has yet been made to other Governments on the subject, but it is hoped that the example set by the Viennese officials will be followed by the Powers that be in the other countries concerned. Preparations are accordingly being pushed forward for the great event, and routes have already been mapped out, though a final choice has not yet been made.

WITH the view of raising fresh capital, the Edinburgh Autocar Company, Ltd., is offering for subscription 5,500 7½ per cent. cumulative preference shares of £1 each.

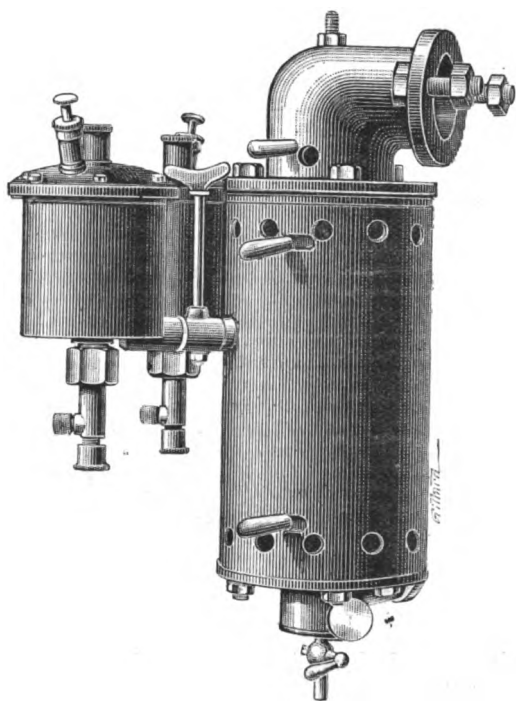
WIND and weather permitting, Mr. C. P. Pollock and the Hon. C. S. Rolls were to make the second ascent of the Aero Club on Thursday, from the Crystal Palace, at 11.30 a.m. No professional aeronaut was to be engaged on this occasion, the balloon being under the management of the gentlemen named. The third ascent of the Aero Club will be made from the Crystal Palace at noon on Wednesday, 11th inst., weather permitting, the passengers being the Hon. C. S. Rolls and Dr. Hutchinson, the balloon being in charge of M. A. E. Gaudron.

THAT most attractive of motoring localities, the New Forest, is about to be equipped with a good repairing establishment. Messrs. Edward Morant, of Brockenhurst Park, Brockenhurst, and Hamilton Dent, of Buckland, Lymington, both members of the Automobile Club, are the originators of the scheme, which is to receive their joint and personal supervision. Lyndhurst is the spot chosen for the works, which will be opened, under the name of the New Forest Motor and Cycle Repairing Works, early in the new year. Accessories and spare parts will be stocked, and a staff of experienced workmen will be in constant attendance.

WE formed one of a half-dozen who on Saturday last attended at the Crystal Palace track to assist at an attempt on making an hour record for the Eagle motor-tandem, a machine very much on the lines of the Century. The attempt was made by Mr. R. Jackson, of the Eagle Engineering and Motor Company, Limited, of Altrincham. Unfortunately, the machine had met with an accident the previous day, as a result of which the frame was slightly strained. Getting away about mid-day in a cold wind, Mr. Jackson covered the first mile in 1 min. 43.1-5 sec. Several of the succeeding miles were done at a faster pace, one being done in 1 min. 37 sec. Ten miles were reeled off in 17 min. 46.1-5 sec., and twenty miles in 34 min. 52.4-5 sec. Just as Mr. Jackson had completed twenty-three miles in 40 min. 3.3-5 sec., one of the front wheel tires went off with a bang, and so the trial had to be abandoned. The tire—a new one—was completely worn through, and yet the single rear driving tire showed absolutely no signs of wear. We may add that Mr. H. H. Griffin held the watch.

THE FILLET CARBURETTOR.

HEREWITH we give a general view of a new carburettor of French design which has just been put on the English market by Mr. A. Godin, of 182, Gray's Inn Road, W.C. It is claimed for the new device, which is made in two types—one for use with automobile motors and one for fixed engines—that it works equally well with either petroleum spirit, pure or carburetted alcohol, and ordinary petroleum. The carburettor comprises two constant-level receptacles, one being intended to feed petrol or alcohol, and the other for heavy oil only. The main part of the device consists of a re-heater and the spraying arrangement. The re-heater is made in two parts, one being for heated air and the other for the heating of ordinary petroleum. As usual, a branch pipe from the silencer conveys a portion of the exhaust gases around the carburettor, the quantity being regulated by means of a tap. Cold air is admitted to the re-heater through a series of adjustable holes towards the bottom



of the device. The exhaust gases, after heating a tubular spiral for petroleum, warm the cold air, without, however, mixing with it. The petroleum is thus warm when it meets the warm air at the spraying nozzle. Should there be an excess of warm air, additional cold air can be admitted through adjustable openings towards the top of the carburettor.

THE Committee of the Automobile Club has decided that the speeches made at the anniversary dinner shall be printed and circulated to the county councillors of England and members of the House of Lords and House of Commons. Mr. Paris Singer has offered to bear the cost of printing and circulating the speeches, which is estimated at £50.

MESSRS. CARBONEL AND SONS, of Marseilles, have established an express transport service for goods between Marseilles, Aix, Lambesc and Salon. The vehicles employed are steam motor-wagons of 35 h.p. At a minimum speed of eight kilometres per hour 10 tons can be carried, and a speed of twenty-five kilometres can be attained when empty.

THE Clipper Tire Company announce that Michelin tires to be used in this country ordered at Stand 1, the gallery, at the Automobile Exhibition, Paris, will be delivered properly licensed. The Paris agents for Clipper Michelin tires are the Société Française des Cycles Clement et Gladiator, 33, Quai Michelet, Levallois-Perret, Seine.

CORRESPONDENCE.

MOTOR-BICYCLES FOR 1902.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—The advice of your correspondent, Mr. Teschemaker, to those who contemplate motor-bicycling, which, briefly summed up, appears to read "Don't," is, I think, rather harsh judgment. Unless Mr. Teschemaker refers exclusively to Werners with the motor over the front wheel, or to Singers with the motor inside the rear wheel, I consider his remarks about vibration to be very highly coloured. The position which is evidently going to be adopted by nine out of ten manufacturers—i.e., amidships, so reduces vibration, that, given a comfortable saddle and large tires, it may be put down as nearer 10 per cent. than the 100 per cent. claimed by your esteemed correspondent.

Mr. Teschemaker advises "a few pleasant days in town" as being more conducive to longevity and economy than the purchase of a motor-bicycle; but here again I venture to query the correctness of his views. And last, but not least, do I demur from his instructing novices to gauge the power of belt transmission by pulling the rear wheel round and noticing the slip on the small pulley. Herein lies a fallacy; and, to use a hackneyed expression, Mr. Teschemaker has "got hold of the wrong end of the stick," and would do well to ponder a little elementary dynamics, which may be found in any technical handbook under such heading as "belt driving," together with the simple formula for calculating same.—Yours truly,

A. E. S. CRAIG.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Some words in reply to my fellow Devonian, Mr. Benett, my evidence only relating to practical experience—a literary man being a mere trespasser in the domain of motor engineering—I will then leave the discussion to others.

I have made it clear that I found the Werner, both as regards pace and power, highly efficient. Even on hills, I did better with it than with the "Singer," as the auxiliary pedalling counts for so much in the case of the Werner. And my machine, as now righted, is probably better than it was when bought last June. But I recall many troubles before it was so righted, e.g., cylinder had to be replaced owing to unfixed gudgeon pin slipping out; carburettor tank supports pulled through (this is a common trouble, and will be avoided in the new patterns), belt carrier on wheel worked loose, belt pulley shaft showed considerable side-play, and so on. These troubles, as in "Electrical Engineer's" case, involved (twice with me) a complete overhauling of the whole machine, before it proved really serviceable. It is now certainly a "splendid goer," as I have already stated, but to attain this result I have been put to great inconvenience and not a little expense. Ought this to be? Probably the 1902 Werner with the engine on the head (the M.M.C. pattern) will be the ideal *fine-weather* "scorcher's" mount. I have heard it said that the new "Werner" pattern (centre frame motor), though superior in convenience and in freedom from slip, will not equal the other in speed. This may well be true, and, if so, the fast rider will of course prefer the improved 1901 type. But tests have to be made, and I hope later to be able to report more fully.

Now, as to some of Mr. Benett's points. Yes, the Werner lubrication is messy and dirty as compared with the Minerva. You have to dismount, take off a cap, open an oil can and pour in oil by hand; on a machine, say, like the Phoenix, lubrication is effected by mechanical means. Further, the old oil has to be let out by unscrewing a nut; in the Minerva the lubrication can be done or old oil let out while riding at full speed. As regards petrol storage, Mr. Benett asks if the Minerva can beat his 120 miles storage capacity. Yes; in the Phoenix there is 200 miles capacity. And I must say that I do not at all find that this 120 miles capacity realised in my case, as I refill about every sixty miles; but I have to run usually with open throttle valve for half my runs on account of bad hill country, and this, of course, makes a difference.

Re mud and dust. Yes; the 1901 Werner has a great advantage in the engine being clear of the wheels. But I do not rate the mud convenience so highly, as I have abandoned mud-plugging owing to the refusal of my machine to stand up. A superb goer in fine weather, it is dangerous on grease. The Minerva is not and, probably, the new Werner is equally safe.

Re brake. My opinion is only that of all riders and repairers I know. My 1901 Werner companion wholly supports my view. As my wire connection failed three times, and once nearly let me in for a serious accident, I speak feelingly. Both of us took refuge in Bowdens, which are admirable. With the old brake I could not ride safely down the well-known hill, probably familiar to Mr. Bennett, into Totnes; the slipping of the clips and the opening of the wire loops were too frequent. The drum for the brake is broad and good, but what is the good of this if you cannot keep the brake on it?

Re projections, I refer chiefly to the tank-cap, which has on several occasions torn my understandings. But this is a detail, and easily righted. Finally I urge, give us a good silencer. To conclude, I now find that the improvements I have urged in these columns are practically all to be embodied in the two patterns of 1902 machines, including better lubrication and finish. This is really my best answer to Mr. Bennett. As a rider who has, on the whole, immensely enjoyed his motoring, I feel myself greatly in the debt of the clever "Werner" inventors, and I wish to make it quite clear that my criticisms were simply designed to draw attention to defects in a, generally speaking, admirable design. The Werner, probably in either pattern, will always and justly command popularity.—Yours truly, E. D. FAWCETT.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I should like to add a few remarks to those already made *re* Werner motor-bicycle. The only difficulty I have been unable to get over is the effect of cold weather on the carburettor. I cannot get the oil to vaporise quick enough to cause an explosion. Possibly there may be some fault with the carburettor, but I do not think so, as at times I have had the air hole nearly full open in warm weather. Last week I tried gasoline (Messrs. Carless, Capel, and Leonard), a much lighter oil, and on the top of Dartmoor, with snow in some places, I was able to start right away, but towards evening the air hole had to be gradually closed and finally no explosions would take place except by injecting oil in the cylinder head. It is not through the oil failing to feed into the carburettor, although I have had trouble with that before now, but no matter what quantity of oil there is in the carburettor, only an occasional weak explosion takes place. Gasoline is no doubt a great improvement for cold weather, but not good enough. Even the latter end of the summer, on a cold morning, I always had to pour a kettle of hot water on the oil tank before I could start. If any of your readers have tried this bicycle in cold climates and found different results, I should be glad of suggestions.

I may say I have never even seen any motor-bicycle but my own and never had any personal instruction in management, so there may be something I have not yet understood, although I have had a mechanical and electrical training. It has struck me, failing the use of the exhaust gases to warm up the oil as in the motor trike, a resistance coil at the bottom of the carburettor, connected, when necessary, with the accumulator, might warm up sufficiently, but this would probably be wasteful of battery power. However, notwithstanding the fact that perhaps most people do not care to go thirty miles an hour against a freezing wind, I think the machine should be capable of use under those conditions.

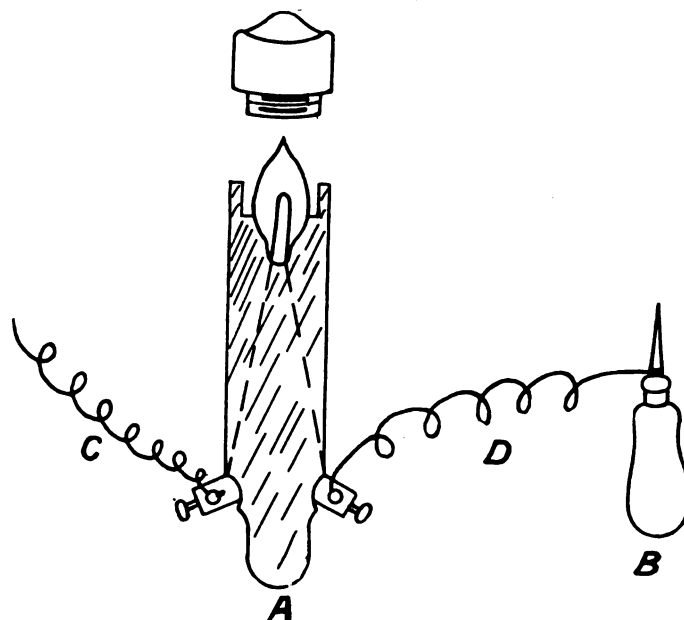
I may say, taking the machine all round, I was more than pleased and surprised at its power back in the summer when I bought it, and I have during the time I have had it taken every hill from Plymouth through Princetown to Moreton Hampstead, and anyone who knows that road will appreciate this. I have tried and failed at Dartmoor Hill on both sides, what the gradient is I do not know, but I managed to get half way up on the Princetown side—the sandy soil is against hill-climbing there. In conclusion, I should like to repeat the advice given to

me by cycle agents and travellers:—Do not have a motor-bicycle unless you understand its working and can take it to pieces and find out the cause of anything going wrong.—Yours truly, LATE ELECTRICAL ENGINEER.

AN IGNITION TESTING DEVICE.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Having been "hung up" by a fault in the primary circuit of my electric ignition, I devised the arrangement illustrated herewith for its detection, and by its means I was enabled to locate it in a minute or two. A is a boxwood sparking-plug case with two terminals screwed into the lower end and in which is fitted a four-volt lamp. The wires from the lamp were first placed in position and the box nearly filled with plaster of Paris. B is a cobbler's awl; C is a flexible insulated wire about 12 ft. long; D is a flexible insulated wire about 2 ft. long. One end of D is soldered to the piece of the awl near the handle, the other end is connected to A by one of the terminals. One end of C is connected with the other terminal on A.



To locate a fault: (a) Disconnect the wire which leads to earth from the battery; (b) adjust the contact breaker or trembler screw in such a manner that there is good continuous contact; (c) connect the free end of the wire C to the free terminal of the battery; (d) see that the switch is "on" and the "touche" pin in place; (e) hold the lamp in the left hand and the awl in the right, and with point of the awl puncture the insulated wire on the car or touch the free metal at the connections. If the lamp lights, the wire between the point touched and the battery is sound, and *vice versa*.

The advantages of the method are: (1) A light is more easily seen than the needle of a galvanometer. (2) The awl enables one to quickly locate a fault even in a flexible insulated wire such as occasionally occurs in a De Dion trembler—Yours truly, G. WASHINGTON ISAAC.

THE SMART SURREY POLICE.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—On Friday last, at the top of Merstham Hill, I was stopped by one of the above force for emitting steam from my International Benz car, but after holding a strong argument for about ten minutes I was informed that I could continue on my journey, which was to the National Cycle Show at the Palace. This is the second time I have been stopped for the same offence. Can any of your readers inform me how I can prevent the steam from showing out of the exhaust pipe after ascending hills, as I find at the present time it is not safe to drive a car in this neighbourhood which shows any steam?—Yours truly,

S. W. FULLER.

QUERIES RE IGNITION.

To THE EDITOR OF *The Motor-Car Journal*.

SIR,—All owners of De Dion voitures or cycles will endorse the remarks of your correspondent, "Ten Miles from Anywhere," which appeared in the last issue of your journal; for assuredly every one of them has had trouble with the trembler method of ignition. After considerable experience with all three systems I am of opinion that both the Simms-Bosch and the wipe contact methods are infinitely preferable to the trembler and platinum tipped screw arrangement.

For six months I used regularly in Paris a De Dion tricycle fitted with the Simms-Bosch ignition, and during the whole of that period I had no trouble with the system whatever, except in two minor details, since satisfactorily overcome by the Automatic Magneto Electric Company. The spark, in common with all those produced by rupture, is extremely hot, and fires almost any mixture; while, the tension of the current being low, short circuiting is practically unknown. The system requires careful initial attachment and adjustment, but, given these conditions, it is, in my opinion, an ideal method of ignition.

With regard to the wipe contact system, it may interest your correspondent to learn that I have found the employment of a Bassée et Michel *interrupteur* and coil, fitted with a trembler (Carpentier's for choice), gives most excellent results, and diminishes ignition troubles to almost vanishing point.—Yours faithfully,

ERNEST M. C. INSTONE.

THE SOUTHSEA RUN AND A SUGGESTION.

To THE EDITOR OF *The Motor-Car Journal*.

SIR,—What would have been a splendid parade through the streets of London, and other places, of a unique show of over two hundred motor-cars, although a success as far as it went, would have been much more so had it not been for the London fog which prevented many cars from joining, and prevented thousands of people from viewing the procession of those brought to Whitehall under very great difficulties. Therefore, from the point of view of familiarising the public with the sight and actions of self-propelling vehicles, a great opportunity was almost entirely lost, especially as far as our Metropolis was concerned.

Indeed it was a great and pleasant surprise to me to find such comparatively long and good accounts of the run to Southsea in most of the London papers, from which we may safely conclude that had there been sunshine, with thousands of spectators along the route, we should at least have been advanced one year in everything pertaining to motoring. Yes, even a year less of prejudice and a year nearer the abolishing of the speed limit.

Then, sir, is it not practicable—is it not desirable—to have a parade on one or two days during the motor-car show next April? There are many reasons for the favourable consideration of this suggestion, some of which are:—More favourable weather; more motorists, more cars and more people interested in motoring in London. The whole of the trade would support such a parade, and undoubtedly the public and the Press would become more interested.

The A.C.G.B.I. should, of course, be the promoters, as in the Glasgow Trials, and would themselves determine if there should be any tests of reliability or not (certainly not of speed).

I would advocate a quiet run to any town twenty to thirty miles out of London, and back before dark; and no car that started on any account (except from breakdowns) to leave the procession till dismissed in London on the return. Much more could be said, but I hope the above will be enough to set all those interested a-thinking, and the A.C.G.B.I. promptly acting to bring about what no doubt would have a very good effect on the non-motoring world.—Yours truly,

W. J. BARNIKEL.

To THE EDITOR OF *The Motor-Car Journal*.

SIR,—Being the owner of an English-made car, I was invited to take part in the Southsea run on the 16th inst., to assist in demonstrating that British-built cars are as reliable as those imported from the Continent. That I succeeded in doing this, the following will amply testify.

I journeyed to London on Friday, November 15th, from the West of England (150 miles), conveying three passengers and luggage. Started the next morning at 9.45 for Southsea, making an absolutely non-stop run (except at controls), arriving at Winchester 33rd car, and Cosham 24th, at 4.46, still with three passengers. Left Southsea for home (113 miles) with four passengers, at 10.30 on Monday, arriving same evening, making a total run for the three days of 358 miles. Nothing whatever was done to the car, other than lubricating and replenishing petrol tank, excepting tightening two nuts previous to leaving Southsea.

I think few foreign cars taking part in the run could show better results. It is also splendid testimony of the progress made by our own builders, particularly the Motor Manufacturing Company, Ltd., whose 7 h.p. phaeton, supplied to me last spring, I drove with such good and pleasurable results to myself and passengers. I am only an amateur driver, and have no interest in writing you other than to promote the well-doing of our own manufacturers, and to interest possible purchasers.—Yours faithfully,

E. W. HILL.

IMPROVING A MOTOR-TRICYCLE.

To THE EDITOR OF *The Motor-Car Journal*.

SIR,—As I have recently converted my motor-tricycle from an instrument of torture to "a thing of beauty and a joy for"—well, until I get a 40 h.p. car, perhaps the process may be interesting to some of your readers. The tricycle had the usual defects: difficulty of starting with the pedals and the tendency of the front wheel to tip up, and perhaps the whole machine going over backwards. Another difficulty (as far as I am concerned, and a good many other people who have written to me), if I may venture to name it, is "the uncertainty of the De Dion ignition."

I thought that a free motor would get over the first difficulty, and a forward chain drive the second. As the space between the motor axle and tricycle axle was too small to allow of the necessary reduction of gear ratio, I decided to try a Crypto gear on the motor-axle, which served the double purpose of reducing the gear and providing a free motor. After waiting seven or eight weeks for a Crypto gear I had ordered I gave it up as a bad job, and, as I was determined not to go back to the old style, I consulted Messrs. Root and Clarke, of Herne Bay, who were altering the tricycle for me, and, to help me out of the difficulty, they took the differential gear out of an old Singer tandem-tricycle. This, with a little alteration, made a first-class epicyclic gear, and was fitted to a new motor-axle, which was twice as long as the old one.

The motor was made to work forward, an eight-tooth tandem-chain wheel was screwed to the plate which carries the two small pinions, a 22-tooth tandem-chain wheel bolted in place of the big brass wheel, and an ordinary cycle chain completed the gear. The motor is started with a small handle, and when running free drives the outer drum backwards. When this is held by a band brake the gear drives the chain-wheel and starts the tricycle without tipping up the front wheel, no matter how suddenly the gear is put in. As soon as the free motor was fixed up I could experiment with the ignition indoors; but, although I tried everything I could think of, I could not get it to act with the unfailing regularity I so much desired, so I decided to fit the Benz ignition. Mr. Blake changed my coil for one with a trembler, and made me a fibre cam with brass connections to put on in place of the De Dion cam. I used the ordinary De Dion trembler for the make and break, and now I am certain of getting a splendid spark which never fails, and when the mixture is anywhere near right will start with the first pull-over of the handle every time. I have had the brake on the gear connected to the right-hand brake lever on the tricycle.

Now I start the motor indoors, wheel the tricycle out, take my seat, put the brake on, and start like a car. I have the brake lever held on by a catch, and slow up by switching the spark off and on in the usual way by the handle switch. I have taken the tricycle out, and made six or seven calls of a minute or two each with the motor running all the time. I have tried the new

ignition for speed with the motor running full, and on advancing the spark it keeps on increasing in speed up to, I should think, about 2,000 revolutions a minute, when I switch it off for fear of shaking the tricycle to pieces.—Yours faithfully.

CYRIL SCOTT.

A RUN ON A WERNER IN A THICK FOG.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Being a motor cyclist and a constant reader of your paper, I thought you might like to have an account of a short run in the fog on Sunday, November 3rd. I had asked a cousin who has just returned from South Africa to take the seat in my Milford trailer, and sample the pleasure of being pushed, or rather, in his case, being pulled by a pint of paraffin. When my companion turned up in the morning I was afraid that we should not be able to go for our ride, as the petrol that I had ordered several days before never turned up. This was most annoying. However, I determined to start and take my chance of filling up the tank on the road. I found no difficulty in pedalling the machine and trailer along the Bayswater Road, and we had a fine free wheel run down Notting Hill to Uxbridge Road Station. The heavy Werner, with its addenda, seemed to get up a great pace down the hill, and I heard somebody remark as we dashed by that it was a very silent motor, probably electric! In the Goldhawk Road we procured a can of Pratt's motor spirit, with which we filled our tank and ran nicely and at a good pace to Maidenhead. We put up at The Bear and had a good hot lunch, which was much appreciated after our chilling in the cold, wet fog. The landlord, who was an old Lancer, had a long yarn with us about the war, so the time passed quickly, and we decided to return instead of going to Reading. The return journey was decidedly exciting as the fog became much thicker, and it was impossible to see a yard or two ahead. A large motor-car was following in our wake, *teufel-tufing* all the way. So it was a case of being between the devil and the deep sea. We managed to keep the lead until nearing Hounslow, where we slowed up as our engine was evidently getting tired. After this we came along at a more moderate pace and overtook the car, which had stopped to light up. We pulled up alongside of them to light our acetylene lamp and adjust the trembler when they very kindly offered us assistance, which, luckily, we were not in need of. From here I found it extremely difficult to follow the tram lines even with the aid of a powerful lamp. The huge electric cars looked weird as they passed in the fog like ships in the night. We overtook those going our way, so there was no danger of being run down. At Uxbridge Road Station we had to get off and walk up the hill, as it was impossible to see a yard in front of us. The road was filled with buses and other vehicles wandering about trying to find their way by means of lanterns and torches. Curiously enough when we passed Notting Hill Gate Station it became much lighter, and it was fairly clear all the way to Dorset Square, which we reached in time for a cup of late afternoon tea. As everybody knows, motor-cycles are peculiarly sensitive to atmospheric changes, and I do not think it would be possible to have had worse conditions.

With regard to the Werner, I must say, after a thorough trial of over a thousand miles, that it is a splendid little machine, and I doubt if any of the 1902 productions of the same power will equal the records of this year's front driver. Many people object to the position of the engine, to which, to my mind, the success of this motor-bicycle is probably due. I have never ridden any machine that steers better, its natural tendency is to run straight. The high position of the engine keeps it clean and cool. The improvements that would naturally suggest themselves to any practical rider would be the now Hub two-speed gear, a powerful back pedalling rim brake, a valve lifter, and a slightly more powerful engine for a heavy man or record breaking. My advice for those going in for this sport is, do not throw your money away on any freaks or weak machines with a motor stuck on. They may look very nice on the show bench, but will soon rattle to pieces on the road.—Yours truly,

J. WARREN DAVIS, M.R.C.S.Eng., etc.

A DAY AT CHERTSEY.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—A pressing invitation from the powers that be led to my spending a long though by no means a happy day at the Court House at Chertsey last week. The law, it is said, is a *hass*! but that is surely no reason why a body of half-a-dozen worthy English gentlemen, called upon to administer justice, should apparently sacrifice their common sense to lend colour to this oft repeated statement. The first case submitted for impartial judgment was a charge of furious driving—motor, of course—on the Anniversary Saturday. The victim, a well-known and respected gentleman, denied the charge, and then that valiant champion of the oppressed automobilist, Mr. Staplee Firth, proceeded to do battle for him in gallant style. But in the inspector he met a doughty opponent, and soon the air grew thick; "lie," "confounded lie," and other expressions in vigorous English penetrated the murky atmosphere as the battle raged. Mr. Firth impetuous and indignant, the inspector smiling and dogged. "An infamous trap, degrading to the police," was how Mr. Firth characterised the inspector's little plans for catching the automobilist. The method adopted is, of course, familiar to your readers from reports of previous similar cases. Twenty-five miles an hour said the inspector, ten miles an hour said the English gentleman; decision, a fine of forty shillings plus costs.

In the next case the victim was of kindred order and again the strife waged merrily. Here the defendant was admitted to be a gentleman of some standing in the county; on his oath he said he was not exceeding twelve miles an hour, and that he was paying special attention to the speed, having been warned of the pitfalls that awaited him. His engineer confirmed his statements, but alas, the truth was not in him, for again the urbane inspector triumphed; fine, 30s. and costs.

The case that followed presented a little variety, inasmuch as it was a double-barrelled charge, viz., that the wicked man had driven two vehicles at the lightning speed of over six miles per hour. The courteous inspector here left the realms of fanciful twenties and twenty-fives per hour, and grovelled in a paltry twelve. The first part of the charge, "that a tricycle and trailer constituted two vehicles," was decided by the court against the defendant, but fortune and Mr. Firth's clever pleading saved him on the charge of exceeding six miles an hour, and the lucky man was acquitted. There remained two more motor cases to be heard, both at the instance of the ubiquitous inspector, one being that of another tricycle and trailer, and the other a charge of exceeding four miles per hour with a steam locomotive, this charge being based on the fact that the car, a "steamer," was emitting a cloud of steam. The driver of the tricycle and trailer was held to have exceeded the pace of six miles an hour, and had to pay a fine of 20s. The case of the "steamer," however, had not terminated when I left.

Mr. Staplee Firth had a long and arduous day, and fought his cases well. For the inspector, too, I must say a good word: he's a clever man, but out of place. With a few like him in South Africa the war would, I am convinced, finish in a twinkling; for with tape and watch he'd trap the Boers on his favourite quarter-mile.—Yours truly, A VICTIM.

MR. F. R. HATCHER writes: "Petrol for motor-bicycles. Referring to a letter signed 'Lock Nut,' any quantity of petrol (Carless' or Pratt's), from a quart upwards, can be obtained at the Saracen's Head Hotel, Dunstable, and I hope at every other hotel throughout the country, where the proprietors are alive to the fact that motors bring them business."

MESSRS. TIMSON, BULLOCK, AND BARBER, of Montagu Street, Kettering, are now keeping a stock of motor accessories, and are able to carry out repairs to all types of motor vehicles.

UNDER the name "British Tyre Restorer and Repairer," Mr. H. R. A. Philp, of Pailton, Rugby, has introduced a preparation which can be painted on the sides of the tires on motor-cycles and which it is claimed not only prevents cracking, but will often enable an old and cracked tire to be put to a fresh period of service.

THE STRAKER STEAM LORRY.

THE accompanying illustrations show the military steam lorry and trailer designed and constructed by the Straker Steam Vehicle Company, Limited, 9, Bush Lane, London, E.C., to the special requirements of the War Office. The vehicle is 18 ft. 6 in. long by 7 ft. in extreme width. The wheel base is 10 ft. 5 in., and the wheel gauge, from centre to centre of driving tires,

being 200 lbs. per sq. in. It is constructed to the requirements of the Manchester Steam Users Association, is rivetless, affords special access for disconnecting and cleaning, and is provided with a superheater. The engine is of special compound horizontal reversing type, having cylinders 4 in. and 7 in. by 7 in. stroke, the normal speed being 400 revolutions per minute. The valve gear is of the company's design, permitting of linking up. The power developed at 400 revolutions per minute is about 25 i.h.p. The power is transmitted from the engine to the countershaft, at

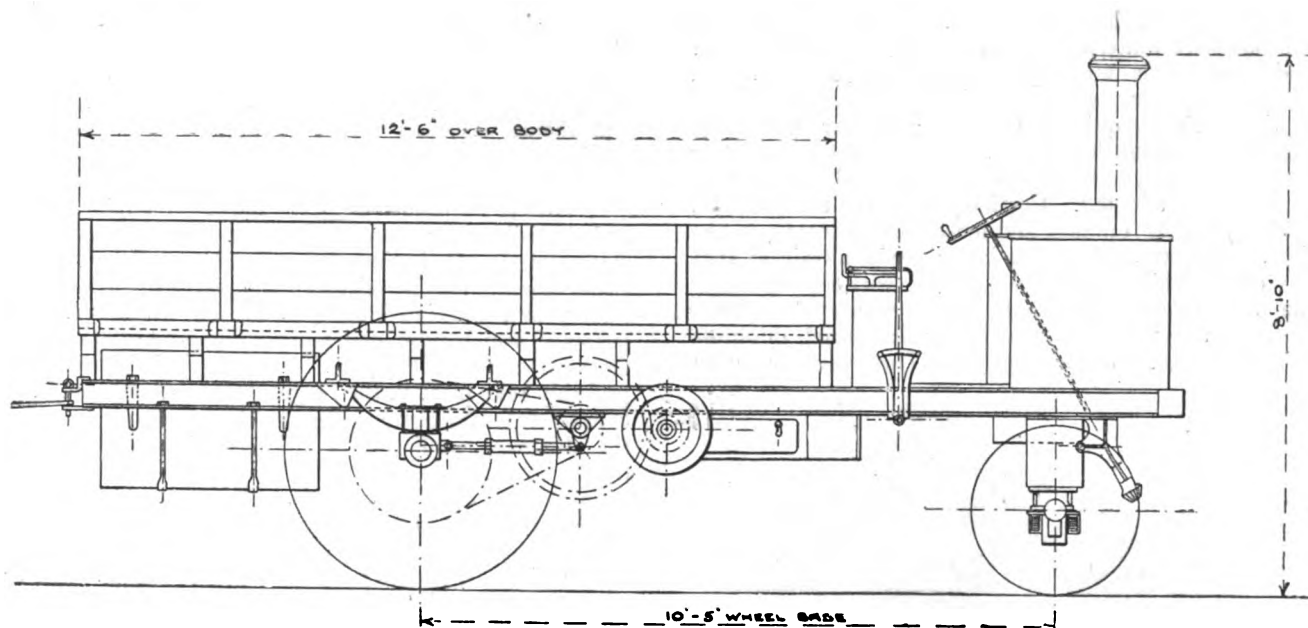


FIG. 1.—SIDE ELEVATION OF STRAKER STEAM WAGON.

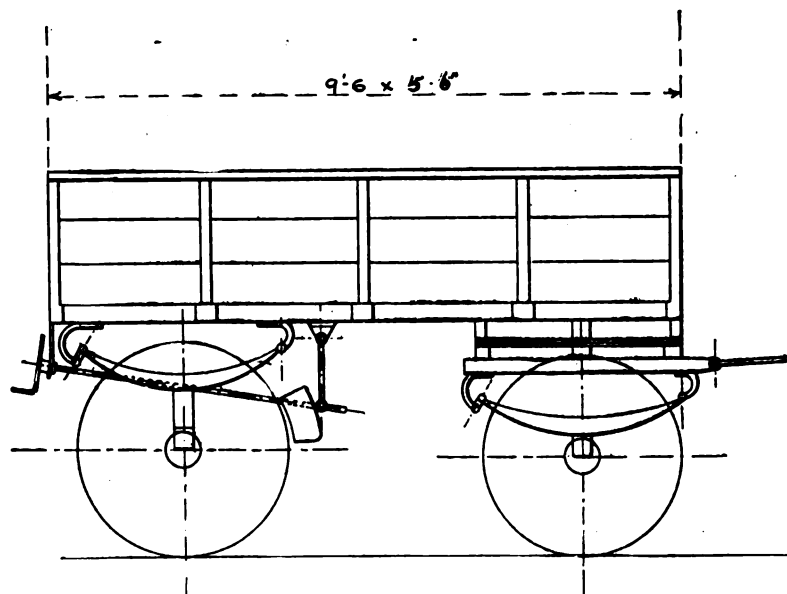


FIG. 2.—SIDE ELEVATION OF STRAKER TRAILER.

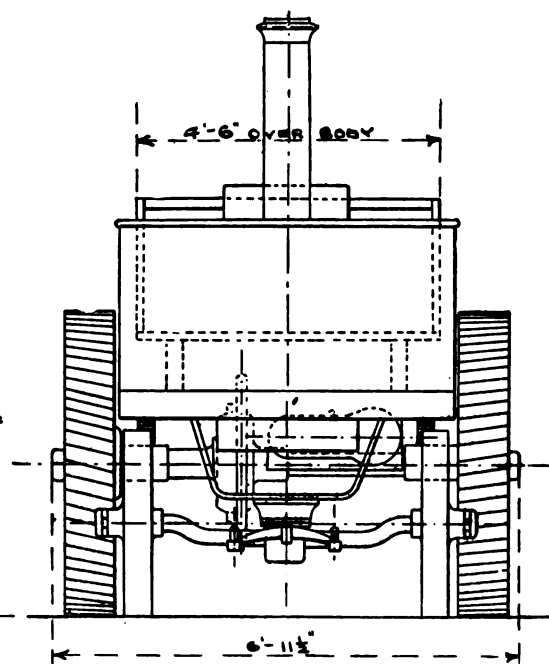


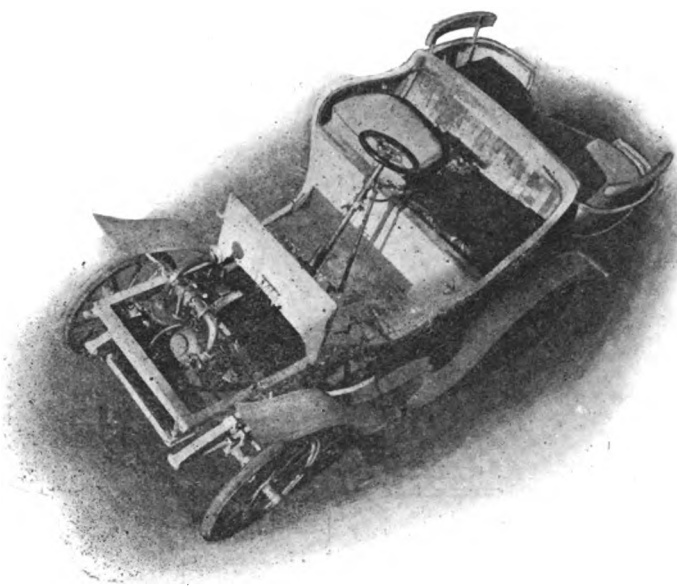
FIG. 3.—FRONT ELEVATION OF STRAKER STEAM WAGON.

5 ft. 10½ in. The leading wheels are 2 ft. 9 in. in diameter by 5 in. in width, and the back wheels are 4 ft. 6 in. in diameter with 9 in. tires, the latter having "stropes" secured to same. The leading axle is mounted on a central pivot under the boiler, and takes the weight of that portion of the vehicle through anti-friction bearings, thus obtaining a three-point support, which relieves the frame from any undue transverse strain, and secures great ease in steering. The body of the vehicle is constructed of well-seasoned timber, and framed up with removable stanchions and sides 2 ft. in height. The superficial area is 48 sq. ft. The boiler is of the Straker Company's water-tube type, and contains 70 sq. ft. of heating surface and 2.2 of grate area, the working pressure

two useful ratios, giving speeds at from two to eight miles per hour. The countershaft also carries a sprocket pinion driving direct to back axle through the medium of a specially constructed chain capable of withstanding a working strain of twenty tons. The back axle is provided with device for locking the differential gear; it rotates in hard gun-metal bearings and, through the medium of axle-boxes, is secured to steel laminated springs bearing on the channel frame. Powerful brakes are provided, while there is accommodation for sufficient fuel for a day's requirements. A four-wheeled trailer is connected to the back of the vehicle, the platform area being 45 square feet. The lorry and trailer are intended for a load of 5 tons.

THE "BELLE" PETROL CAR.

REFERENCE has already been made in these columns to the new petroleum-spirit car which Mr. E. J. Coles, of Upper Holloway, is putting on the market. On Saturday last we had a brief run on the new vehicle, of which we are now able to publish an illustration and a brief description. The engine is carried at an angle of about 45 degrees under a bonnet in the fore part of a channel steel frame, with the explosion chamber forward and at the highest level. The normal speed is 800 revolutions per minute, at which the motor develops 6 h.p. The cylinder, which is water jacketed, is cast in one piece, while the valves are so arranged that by unscrewing two nuts they can be quickly removed; another advantage being that no packing is needed. A surface carburettor is employed to furnish the explosive mixture, while electrical ignition is, of course, adopted. Coming now to the transmission, a single belt, working on fast and loose pulleys, connects the engine with the countershaft. The latter carries a train of spur wheels, any one of which can be made to mesh with corresponding pinions on an intermediary shaft, from which the power is conveyed to the rear road wheels by the usual duplicate set of chains and chain wheels. The variable gear,



BIRD'S-EYE VIEW OF "BELLE" CAR.

which is enclosed in an oil-containing case, is adapted to give three speeds ahead and one reverse. A single lever controls the forward speeds, while a pedal actuates the reverse motion. Inclined wheel steering is fitted, while the road wheels are of the artillery type shod with pneumatic or solid rubber tires at the desire of the customer. The belt-striking gear is operated by a pedal, as also are the band brakes on the hubs of the rear wheels and the band brake on the countershaft. Special attention has been paid to the question of brakes. Those on the rear wheel hubs are of large size, while that on the countershaft is water-cooled; in addition to these, hand-operated brakes acting direct on the rear wheel tires are also provided. A novel feature of the car is the combined radiator and water tank. The latter is located in the fore part of the frame, and is in two portions, connected together by a series of what, at first glance, appear to be thin plates, but which, on close inspection, prove to be flattened tubes. The car we tried the other day was an unfinished *tonneau*, with solid tires. It appeared to run very quietly and took the hills that came in our way at a good pace. The frame carrying the engine and all the gearing, any type of carriage body can be fitted, although we understand that the *tonneau* and phaeton styles will be adopted as standards. Complete, the car weighs about 8½ cwt., and on average roads can attain a speed of 25 miles per hour.

FLOTSAM AND JETSAM.

By "FLANEUR."

IF only it could be realised, the proposal which has emanated from Vienna as to the itinerary to be followed by the tourists' section of the Paris-Vienna race of 1902 would be ideal; it is to be feared, however, that the scheme is quite impracticable. The suggested route is from Paris to Geneva, by way of Dijon, thence up the Rhone Valley road to Sion, Brieg and Gletsch; over the Furka Pass to Andermatt; over the Oberalp Pass to Disentis, and on to Tiefenkasten by Ilanz and Thusis; over the Julier Pass to Silvaplana, St. Moritz, and Pontresina; over the Bernina Pass to Tirano; over the Stelvio Pass to Prad, and thence eastward through Meran, Botzen, Toblach, Klagenfurth, and Graz to Vienna.

THIS route would whip the cream off Alpine scenery so far as it is visible from main roads. But there are serious obstacles. The most vital is the fact that it is a hundred to one against the Swiss Government permitting motor-cars on the Furka, Oberalp, Julier, and Bernina Passes, or in the Engadine. The only passes on which automobiles are at present allowed are the St. Gothard and the Simplon. As the Paris-Vienna race would probably take place in the height of the Swiss tourist season, it is unlikely in the extreme that the Swiss authorities would allow the diligence traffic to be affected by the passing of large numbers of cars, for the horses are certain to be frightened, and serious accidents might ensue. This difficulty apart, however, the suitability of the route to automobilists themselves is not without objection. The Furka Pass has been in very poor condition this year, and may be worse next summer. The road, too, from Disentis to Thusis is altogether too narrow, too dusty in dry weather, and too muddy in wet, for the passage of motor-cars, racing or non racing. I have been over this route twice—this summer and two years ago—and can speak with emphasis. Of late, too, the Engadine road has lost its former high quality, and in parts is narrow as well.

FROM my experience of French, Swiss, Italian, and Austrian roads, coupled with a consideration of the routes which are declared "taboo" by the Swiss authorities, I should be inclined to suggest the following as the most practicable routes from Paris:—(1) Dijon, Geneva, Basle, Zurich, Schaffhausen, Constance, Innsbruck, Botzen, Toblach, etc., to Vienna; (2) Geneva, Brieg, over the Simplon Pass to Domo d'Ossola, along Lake Maggiore to Arona, then to Milan, Lecco, along Lake Como to Colico, thence to Sondrio, Tresenda, and Tirano, and over the Stelvio Pass, as per the original route. The second journey would be longer than the first, but more picturesque. Neither, however, would be as striking as the Viennese proposition, and as I have been over the greater portion of all three routes I can speak impartially; but that the first proposal will ever be carried out I take leave to doubt very strongly.

WHILE very far from desirous of questioning the good intentions of the *Daily Mail* in advocating the standardisation of the small car, the writer of the argument in favour of a uniform specification of "weight, horse-power, and measurements" appears, at all events, as hopelessly at sea. A maker builds his car according to his individual judgment, and if one believes in wooden wheels and another in tangent spokes of wire, who is to decide which type shall be the standard, and what is to prevent the minority from acting up to its beliefs, even if a majority agree to regard one type as standard? If one maker, moreover, is willing to give an 8 h.p. car at the same price as that of another maker's 5 h.p., with other factors equal, why should the public be debarred from the opportunity of acquiring the more powerful car?

THEN, again, the public itself has to be considered, even if the trade conspired with complete unanimity. Supposing makers all agreed to fit artillery wheels; there would be those who

would demand the wire pattern, and *vice versa*. The trade might further agree to fit phaeton bodies only to small-priced cars; must those who wanted *tonneaus* be compelled to buy a more expensive vehicle? In the matter of weight, again; if ten hundredweight were an accepted standard, is a maker to be prevented from stating his opinion that eleven represents the minimum weight that is safe, or another maker from declaring his opinion that he could make a car at nine as strong as any standard type? It is entirely impossible to get the manufacturers to agree to such narrow limitations as the *Daily Mail* suggests; and what is still more important, if the trade itself agreed, the public would demand originality and variety at once, as well as that ancient right of selection which is familiarly expressed in the apothegm that "He that pays the piper shall call the tune."

"THE Most Sensational Motor Ride" is the title of an

of the Capitol at Washington on a safety bicycle. But this statement, if made, may have been a bit of *réclame* to lend interest to his latest feat. At the same time, I know Kilpatrick to be a man of immense pluck, having made his acquaintance two or three years ago, when he came to ask my advice on a project he was then maturing.

THERE is a perfect epidemic, by the way, of illustrated references to motor-cars in the various current publications. The same number of the *Strand* has a story, eminently silly, under the title of "Lord Beden's Motor," and it contains various illustrations of a race between an impossible car, which is supposed to be real, and another which is admittedly spectral. In one picture the cars are seen descending a hill with a gradient of one in two! The familiar artistic error is also perpetrated of making a car go round a corner with its inside wheels off the ground instead of the outer, if any left the ground at all. In the Christmas number



THE WINNER OF THE RECENT ITALIAN MATCH, M. COLTELLETTI, ON HIS 24 H.P. PANHARD.
(*La France Automobile*.)

article in the *Strand Magazine* of the current month, by Winston Spencer, wherein is described a rush down a specially-prepared "chute" on a "Mobile" car by Charles Kilpatrick. He is described as first ascending under high steam pressure, turning at the top, and then descending with a straight run. The chute is stated to be only six inches wider than the car, but the photographs accompanying the article show the fact to be otherwise. Somehow the feat, though daring, does not appear so difficult as is sought to be proved, assuming that the boards are free from projections of any kind. Everyone knows that a car never runs in such a bee line as when running free down a smooth hill, and the only factor that seems difficult is the form of steering with which the car is provided, namely, the old and easily swayed tiller, set parallel to the direction of the machine. The only testimony that appeals to me is that of Kilpatrick himself, who is reported to have said that riding down this chute is a severer tax upon his nerves than his famous feat of descending the steps

of *Punch* is a hunting sketch, with the following explanation appended:—"It was most unfortunate. The first time Mr. and Mrs. Spool used their new motor-car to drive to the meet, something went wrong, and the wretched thing bolted for fifty or sixty miles before it could be pulled up." Is not this excruciatingly funny? How pleased the artist must have felt when he evolved this "joke." But had he been making harmless sport out of an ordinary huntsman he would have depicted some humorous incident that was not absolutely impossible, and would not have represented, say, a horse spinning round on its tail, or balancing itself on one foot, or tying itself in a knot. Yet none of these is more absurd than the supposition that a motor-car can "bolt." The essence of legitimate caricature is exaggeration, coupled with the element of immediate "recognisability," if one may coin the word. In the same way a comic reference to a motor-car, however exaggerated, should not be fatuously impossible if it is to possess any quality of humour at all.

MOTORING UNDER DIFFICULTIES.

TO see a motor-car, like a thing of life, running smoothly over a level road carrying its occupants swiftly from one fair landscape to another excites the envy and admiration of the pedestrian. But, as Burns says—

"Pleasures are like poppies spread,
You seize the flower, its bloom is shed."

In our variable climate the pleasures and troubles of motoring are never very far apart. This I discovered on my cost during a recent journey between Glasgow and Coventry. I was ordered to bring a large motor-car which had been on view in the Glasgow Exhibition back to the works at Coventry.

Leaving the "second city of the Empire" on a beautiful Saturday morning I passed through Edinburgh at noon, and put up for the night at the border town of Berwick. Sunday morning was foggy, but as the sun rose in the heavens the fog disappeared and, there being no farmers' carts about, I put on top speed and rattled gaily along through Alnwick and Morpeth. On this bit of hard road with a bracing wind from the German Ocean in my face, I experienced all the exhilaration of a morning's canter on a good horse.

I arrived at Newcastle at midday, and was surprised at the wonderful difference between its Sunday and week-day aspects. It was quite clean and comfortable looking, and, seeing it then, it was easy to understand why it had been named "the cannie town." Leaving it after lunch, I was soon within sight of Durham, but the fog had fallen on the old cathedral towers and was slowly blotting out the landscape. I had to light up long before the regulation time as the fog wrapped everything in its clammy embrace. I had intended to reach York that night, but was glad to put up at Darlington. Had I been a gentleman of leisure on my own car I would have remained there till the weather and the roads improved, but, being only a travelling motor-car salesman, I was bound to continue my journey, and so in a drizzling wet morning I left Darlington and made my way before nightfall to Bradford. There I found a telegram to proceed at once to Blackpool and await orders. The car was in such a shocking state with mud that I stayed in Bradford over night. With the help of the hotel hostler next morning I got the chains off, which were like bars of iron, and then with the aid of a hose we "discovered" the wheels. When all was ready I was loth to leave a comfortable hostelry and face the weather.

"An sic a day to tak' the road in
As ne'er poor sinner was abroad in."

But there was no help for it, and so, encased in waterproofs like a North Sea pilot, I wended my way at half speed through dirty mining villages to Todmorden—between which place and Blackburn I met the *piece de resistance* of the journey. The rain was so heavy that every few minutes I had to stand up to shake the water out of my lap. Locomotion was of the slowest and, to add to my dismay, I saw a long steep hill before me which must be negotiated. There was no detour, and so, like Buller at Colenso, I made a frontal attack and tried to rush it. Its three-inch coating of black mud was, however, as fatal to my progress as the Boers' barbed wire was to Buller, and I stuck fast. For half an hour I waited anxiously for reinforcements, but not a soul was to be seen. There I was, stuck at the foot of this Hill Difficulty on a 25-cwt. motor-car with the rain pelting in my face.

The Scotch proverb "Put a stout heart to a steep brae" came to mind, and acting on it I got out and made a reconnaissance. The wheels, chains, gearing, and lower part of the body were simply one mass of mud. I scraped the chains a bit clean, and put some oil on them. I then put the motor into gear, jumped down, and pushed behind to give it a start—then jumped up to steer it. In this way I progressed some forty or fifty yards, when the vehicle again came to a standstill. This process I repeated some score of times, and at last I gained the top utterly exhausted. Passing on through Blackburn and Preston I came to a toll-bar, where I had sixpence to pay. My doe-skin gloves refused to come off, having positively stuck to my fingers, and

the toll-keeper cut one off with a knife, so that I might get into my pocket to pay him.

Long after nightfall there might have been seen crawling into the tripper-deserted town of Blackpool a weird-looking motor-car begirt with mud from keel to sky-scraper and with a woe-begone skipper at the wheel.

WILLIAM GLASS.

HERE AND THERE.

WESTON MOTORS have made a contribution of £3 3s. to the funds of the Motor Union.

THE Thornycroft Steam Wagon Company are building a steam dust wagon for the Acton Urban District Council.

WE had a trial run on the new Speed-King 8 h.p. light car the other day, and were much impressed by its sweet running and hill-climbing powers. We hope to refer to Messrs. Dennis' latest production at length in an early issue.

THAT the Benz cars are maintaining their popularity is evidenced by the fact that for the last financial year a dividend of 25 per cent. has been declared by Messrs. Hewetsons, Limited, the British agents for these vehicles.

THE new motor fire tender of the borough of Eccles, recently illustrated in our columns, turned out to a fire one day last week for the first time. The horse tender was also ordered out, but the motor was first to arrive at the fire, which proved a trivial affair.

THE Locomobile Company of America have been awarded the medal (first prize), in the steam voiturette class at the recent hill-climbing competition at Gaillon, France. Another medal and a diploma for Locomobiles was also received for the same event.

IT has been suggested that there may be some members of the Automobile Club who do not intend to spend Christmas in London, and who would like to join other members in a run to the South Coast, to stay over Christmas at an hotel at one of the southern watering places. Members who wish to take part in such a tour are requested to communicate with the Secretary.

THE Fleuss Patent Automatic Boiler-Feed and Motor-Car Syndicate, Limited, has been registered with a capital of £12,000 to adopt an agreement with H. A. Fleuss and W. J. Watts, and to carry on the business of manufacturers of and dealers in steam boiler-feed apparatus, builders of steam engines, motors, motor-cars, etc. The registered office is at 15, Bury Street, St. Mary Axe, E.C.

MR. PARKER THOMAS, who is about to sever his connection with the Aberdare Valley Motor Company, with which he has for some time past been associated, is now engaged in the formation of the South Wales Motor Company, Limited, which will shortly open extensive premises in Cardiff, where a good selection of cars and accessories will be stocked, and repairs undertaken.

AT a meeting of the Lincolnshire Automobile Club on the 23rd ult. a lecture was given by Dr. E. Cragg, of Billingborough, on "Automobilism from a practical point of view." Dr. Cragg dealt with the subject in a most interesting and practical manner, and at the conclusion of the lecture a discussion followed, in which a large number of members and others took part. The lecture and discussion dealt with many points of interest to automobilists, and it is intended to arrange similar lectures during the winter. The general annual meeting of the Club will be held on Friday, January 10th.

THE Committee of the A.C.G.B.I. have decided to recommend to the Administrative Committee that, providing the funds of the Club will allow of it, a donation of £5 5s. should be given to the benevolent funds of the borough and county police forces in recognition of the extra trouble and prolonged hours of service which were involved on the police by the Anniversary Run. The Committee recommend that the donations should be made to the benevolent funds of the police forces of the Borough of Winchester, the Borough of Portsmouth, the Metropolitan Police, and the Counties of Middlesex and Hampshire.

THE other day we visited the depot of the City and Suburban Electric Carriage Company, at Denman Street, Piccadilly, W., and were pleasantly surprised at the long list of names shown us of users of electrical vehicles in the West End, a list which, by the way, is steadily extending. To facilitate the use of electrical vehicles the company have made arrangements to maintain and charge the batteries as often as desired at a fixed annual sum.



THE accompanying illustration shows the "Millennium" motor jack, which has just been put on the market by Messrs. Lake and Elliott, of Braintree, Essex. The jack, which will lift a weight of 10 cwt., is worked in a similar manner to a ratchet brace, a raising or lowering motion being imparted to the screw by turning the milled ratchet head. The handle is pivoted, and can be worked at any angle found convenient, while when not in use the tool occupies but little space. The lift of the jack is from 10 in. to 18 in. It should prove a useful addition to the motorist's tool chest.

MR. G. BRAULIK, of 217 and 218, Upper Thames Street, is issuing a new catalogue and price list of instruments, all of which are directly or indirectly connected with electricity as applied to the motor-car. Pocket volt and ampere-meters for alternating and continuous currents, or both, occupy a prominent position. A new direct reading ohm-meter, small but reliable, should be found useful when the charging of batteries or accumulators is in progress.

OWING to the demand for the E.I.C. specialities, the Electric Ignition Company, of Birmingham, have been obliged to take a new factory giving them greater area for development. The company are about to commence to manufacture their sparking plug with three lengths of reaches into the cylinder, viz., $\frac{5}{8}$ in., to suit those engines where the exhaust valve is likely to foul the sparking plug; $\frac{3}{4}$ in. where the exhaust valve allows a trifle more room; and $\frac{7}{8}$ in. where still further room is allowed.

THE Twentieth Century Motor Company, Limited, has been registered, with a capital of £1,000, to acquire as a going concern from A. M. Cawthorne the business carried on by him in his own name or in the name of the Twentieth Century Motor Company, and, generally, to carry on in all or any of their respective branches the businesses of builders of, repairers of, and dealers in motor-cars, cycles, and accessories. The registered office is at 33, King Street, Cheapside, E.C.

WHAT is claimed to be a greatly improved type of storage battery intended primarily for use with electric automobiles has, states *Lightning*, just been introduced by the Albion Battery Company, of 2, Wynyard Street, Clerkenwell. Mr. Carl Oppermann, the well-known maker of electric cars, is the inventor, and the battery is the outcome of five years' experiments. The inventor claims that with a battery weighing only nine cwt. 100 miles of average road can be readily negotiated with only one charge. A further advantage claimed is that the battery can be fully charged in about two and a-half hours, and discharged at even a more rapid rate without any injurious effects to the cells.

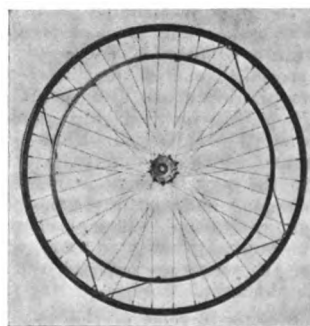
THE first house dinner of the winter season of the Automobile Club will take place at Whitehall Court on Wednesday, the 11th inst., at 7.30 p.m. It is hoped that after the house dinner a paper will be read by Mr. Ernest J. Hutton, J.P. The paper is intended for insertion in the Badminton Library book on "Motoring." The title is to be "Ignition in Petroleum Spirit Engines; Systems; Possible Failures: How to Discover and Remedy Them." The paper is to be as free as possible from technical language, and is to be suitable for beginners. It is

hoped that experienced motorists will attend to add to the value of the paper by relating their experiences.

As already mentioned in these columns, the Committee of the Automobile Club is offering a prize of £5 for the best design for an embossed and colour-enamelled metal plaque to be attached to the fronts of hotels and to the establishments of repairers appointed by the Club. The plaque is to be in the shape of a square, having sides of 20 in. each, set upon one of its points, thus \diamond . Any device or design considered suitable may be employed. The initials "A.C.G.B.I.," or the words "Automobile Club of Great Britain and Ireland," or a combination of words and initials, such as "Automobile Club of G.B. and I.," must be introduced. The design must be such as to strike the eye from a distance, and such that it would be immediately recognised among other signs or advertisements. The designs submitted must be on stiff cardboard of the full size of the plaque. The name and address of the designer must be written on the back of the cardboard. The design should be addressed to the Secretary of the Automobile Club, 4, Whitehall Court, London, S.W., and should be in his hands not later than Saturday, the 14th inst. The decision as to which is the best design will rest entirely with the Club Committee, who cannot undertake to return designs, but designers may call for them any day after January 1st, 1902.

MESSRS. T. COULTHARD AND CO., LTD., of Preston, may claim to be an historic firm, their existence dating from the eventful year of 1815. From that date to the present the name of Coulthard has been continually associated with engineering enterprise. For over twenty years the brains of the celebrated house have studied the complex question of steam motor-vehicles with the result that Messrs. Coulthard's steam lorries and wagons are found on highways and byeways throughout the world. It was not, however, till the memorable year of 1896 that the first Coulthard steam cart took the road. The illustrated catalogue now being issued is, besides being a work of art, an interesting souvenir of five years' progress in motor-vehicles for commercial purposes. From the No. 1 Coulthard steam cart of 1896, depicted and fully described, each page takes us one stage further on the march towards perfection. Wagons and trailers are naturally the most frequently depicted. Amongst the former a 4-ton vehicle "snapped" in the act of carrying a 4-ton load up a gradient of 1 in 9 should shatter the faith of the most hardened believer in the superiority of horse flesh for heavy road traffic. Buses in use at home and abroad, groups of vehicles despatched to foreign parts, and plans and elevations of machinery, combine to fill an interesting and instructive work.

THE present system of fastening the drive pulley to the



spokes of the rear wheel of motor-bicycles with washers and small screws has the tendency of making the nipples bell-mouthed. This is claimed to be obviated entirely in the method devised by Mr. W. Starley, of Coventry. In the new arrangement, illustrated herewith, four pieces of wire bent at right angles and screwed at each end pass through eyes on the drive pulley and are tightened by nuts. On the felloe of the driving wheel four plates are screwed or riveted with a projecting piece bent at right angles, parallel with the spokes. In the centre of each of these four plates is a small knob resembling a door handle riveted to them. Where the four wires are bent in the centre they lie in the groove of these knobs and the drive is taken from them. To remove the drive pulley from the wheel all that has to be done is to loosen the eight small nuts about a couple of turns, when the wires can be lifted off the knobs. The arrangement is claimed to give a direct drive from the pulley to the rear wheel without the shearing strain on the spokes.

MOTOR-CYCLES FOR 1902.



(Continued from page 713.)

Still another new motor-bicycle is that made by Messrs. Timson, Bullock, and Barber, of Montagu Street, Kettering (Fig. 1). The motor is of the firm's own manufacture; it is of the Dion type, developing $1\frac{1}{2}$ h.p. actual. It is fitted with large inlet and exhaust valves and efficient silencer. The cylinder is $2\frac{1}{2}$ in. in diameter by $2\frac{1}{2}$ in. stroke. The trembler is on the coil (Van Raden's), and will work, if necessary, at a speed of 3,000 revolutions per minute. The position of the motor in the frame allows the cranks to rotate without touching the motor, thus enabling extra long bearings and a long belt

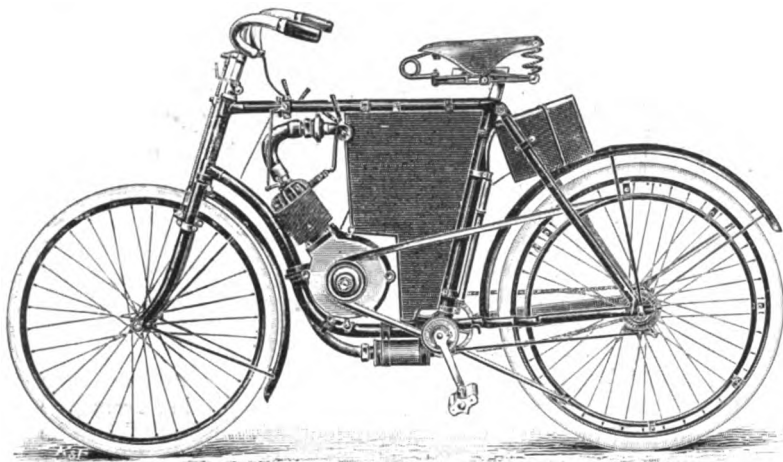


FIG. 1.—THE TIMSON MOTOR-BICYCLE.

drive to be employed. The wheel base is 4 in. longer than that of an ordinary cycle; this, the firm claims, effectually stops side slip and all vibration. The frame is built especially strong, all joints being reinforced; the front forks are taper gauge with triple head. The back hub is of the New Departure tandem type, which allows the machine to be wheeled backwards—a great advantage in a motor-cycle. The carburettor is of the surface type, fitted with splash plate, and carries sufficient petrol for a run of eighty miles. The case below the petrol tank contains the coil and space for a supply of lubricating oil. The various handles for controlling the motor are conveniently situated on either side of the top tube of the frame. Messrs. Timson and Company inform us that they have thoroughly tested the machine for the last four months, during which it has carried a fourteen-stone rider up hills without pedalling.

Two types of motor-bicycles are being made by Messrs. Humber, Limited, Coventry, for the 1902 season. The Beeston Humber motor machine is of the Minerva type, but it contains a number of special improvements and fittings. In the first place, it is fitted with a spring fork, while, secondly, control is all effected from the handle-bar by twisting the grips. On the left side the advance sparking and exhaust valves are operated by Bowden wire, and on the other side the air adjustment is similarly operated, the throttle being the only motion not controlled from the handle-bar. A front rim brake and a back-peddalling brake are fitted. The Coventry Humber motor-bicycle is of the Minerva type, but without the special features in the way of spring fork and control. Messrs. Humber are also making a chain-driven machine of an interesting type, in which a $1\frac{1}{2}$ h.p. motor is built into the lower cross tube of the frame. Through a clutch the motor pinion drives by a chain on to a countershaft which surrounds the bottom bracket, and then by another chain to the back wheel. A free-wheel clutch is fitted to the chain drive of the engine and another to the pedal chain drive. An automatic compression tap is fitted, which acts during only half the stroke, so that the machine is always ready to start when required. Only very short lengths of the wiring are exposed, and the circuit is broken by merely lifting the brake-lever.

Another firm making two types of motor-bicycles is the Progress Cycle Company, Limited, of Coventry, in both of which bicycle frames of special construction are employed. In one the bottom tube is formed at its lower or bracket end somewhat after the shape of a letter U, with the motor placed in the recess thus formed, and in a vertical position. The motor is of the Forman air-cooled type of $1\frac{1}{2}$ h.p., with the ordinary electric ignition. A spray carburettor is fitted. The petrol tank, which has a capacity sufficient for forty miles, is slung from the top tube beneath the saddle, and forward of this is another case, which contains the battery and coil and a supply of lubricating oil. A belt drive is used on this machine, the belt being a special V section, to suit the grooves cut in the pulleys. The higher priced machine has the motor—a 2 h.p. Simms, with magneto-electric ignition—placed vertically a little behind the steering socket. The frame to which the motor is attached is of special design. The wheel-base is considerably longer than that of the majority of machine

The down tube—from head to bottom bracket—follows the circle of the wheel for a portion of its length, and then curves away to the bottom bracket. At a distance of about one-third of the length of the top tube a vertical tube connects this with the down tube. Between this and the head the motor is fixed, and in the rear of the vertical tube the petrol tank is carried. Power is transmitted to the back wheel by a belt, a jockey pulley running on ball bearings being fitted to take up any slack of the belt. Two brakes are fitted to the machines—a front rim brake, and a back-peddalling brake in the rear hub.

The Ormonde Motor Company, of Wells Street, W., have brought out a new motor-bicycle in which the engine is arranged behind the main down tube in front of the rear wheel. A spray carburettor is employed, and a lubricator for the crank chamber is fitted which can be operated from the saddle. Driving is by belt to the rear wheel, and the wheel base is several inches longer than the pedal-propelled safety. The machine is controlled principally by two levers on the top tube. The tanks are arranged in the usual position under the top tube. The motor, which is of the Kelecom type, the sole agency for which in this country has been acquired by the Ormonde Company, has a cylinder 64 mm. diameter, and at a speed of 1,750 revolutions per minute develops $1\frac{1}{2}$ h.p. The cylinder, instead of being bolted on to the crank-chamber, screws into it. The piston is provided with three piston rings instead of two, as generally used on small motors. The guide for the exhaust stem is bushed, so that it may be easily and inexpensively replaced when worn. The valves are of large diameter and strongly made, to avoid all possibility of fracture through heat. The machine is fitted with Clincher motor-bicycle tires. The Alldays and Onions Pneumatic Engineering Company, Limited, Small Heath, Birmingham, are making two types of motor-bicycles, one with the engine (of $1\frac{1}{2}$ h.p.) carried near the head, on the lower cross tube of the frame, and driving the rear wheel by a belt, and one on the lines of the Minerva. Mr. W. R. Thomas, of Thornbury Road, Brixton, is introducing a new motor-bicycle known as the Brion, a feature being the adaptability of the motor for attachment to the frame of the machine in different positions.

One of the most novel motor-bicycles which is being brought forward for the 1902 season is the Holden (Fig. 2), made by the Motor Traction Company, of 27, Walnut Tree Walk, S.E. As will be seen the machine bears a general resemblance to the "Bantam" front-driving safety bicycle. The motor is of 3 h.p. and comprises four cylinders arranged in two longitudinal pairs horizontally between the wheels. The two piston rods, each carrying two pistons, and the cross heads between each pair drive connecting rods coupled to parallel cranks attached to the rear 16 in. wheel. The speed of the motor being only five hundred per minute, no reducing gear is required. The ignition is electric. A single coil serves to provide high tension current for all four ignition plugs. A two-to-one shaft runs parallel to the motor, and, besides working the exhaust valves, in turn carries a brush, which makes contact with four contact points, and so completes the circuit through each plug, as required. The valves are so timed that the cylinders give an explosion at every revolution of the wheel. The cylinders are water cooled, and natural circulation is depended upon. The throttle is worked by a lever below the left handle, and the electrical circuit is completed and broken by a switch close to the right handle.



FIG. 2.—THE HOLDEN MOTOR-BICYCLE.

A single lever operates all four exhaust valves through Bowden mechanism. A Bowden brake is fitted to the front wheel. Convenient footplates are fitted for the rider, and the position as a whole is very comfortable. The four cylinders all exhaust into one box of large dimensions, so that the noise is reduced to a minimum. The front tire is 2 in. in diameter, and the back $3\frac{1}{2}$ in. The wheelbase is 48 in., though, owing to the smallness of the back wheel and the fact that the front is 24 in., the total length over all is practically the same as that of an ordinary safety. The front wheel is geared up by Crypto gearing, and pedals were fitted to the machine we examined, although w

understand that the use of these will not be continued. The lubrication is performed mechanically, and ceases when the engine stops. The central tank is for water, the forward one for petrol and the carburettor, and the rear one for lubricating oil. The machine will, it is stated, start itself without pedalling, even in the middle of a steep hill, and it would drive on the level even if three cylinders out of four were out of order.

The Shaw motor bicycle, made by Messrs. Shaw and Son, Crawley, has the motor fixed vertically in the rear frame, drawing the rear wheel either by belt or chain as desired. Two sizes are being made, with $2\frac{1}{2}$ h.p. and $2\frac{3}{4}$ h.p. respectively. A large petrol tank is fitted, its capacity being sufficient for a run of 120 miles. The James Cycle Company, Ltd., Birmingham, have been devoting attention to motor-bicycles for some time. As, however, they will not have their own motor ready until late next season, they are prepared to fit either the "Minerva" or "Derby." The Centaur Cycle Company, Ltd., Coventry, are making a motor-bicycle on the Minerva system. A rim brake on front wheel and Bowden brake to the back wheel are provided. The machines will be fitted with a new spring fork. In this, the fork sides run right up from the front axle to the root of the handle-bar, where they are hinged on a cross pin. At the points where they pass through the fork crown, rubber buffers or linings are provided, so that the fork is allowed a certain amount of back and forward movement. Under the name "Morriscoche," Mr. Frank Morris, of King's Lynn, is making a motor-bicycle ($1\frac{1}{2}$ h.p.). It is on the lines of the "Moto-Sacoché" which has already been described in these columns.

A number of improvements have been effected in the motor-cycles of the Singer Cycle Company, Ltd., Coventry, and several new styles introduced.—The 1902 "Singer" motor-bicycle, for ladies and gentleman, now possesses a 28 in. front wheel, lengthened wheel base, lubrication from saddle by pump, and cock attached to lubricating tank, spring seat-pillar, and a very powerful back wheel rim brake. The toothed wheel gearing is now entirely enclosed in a dustproof case, which thoroughly protects it from dirt. The air supply, which requires adjustment two or three times in the course of a day, is now controlled by a small lever on the top tube. As to the three-wheeled machines, these are made in both ladies' and gentlemen's types. A new machine is the Tri-voiturette, which, as its name implies, is a machine of the tricycle order with seating capacity for two passengers. The motor, which is of $2\frac{1}{2}$ h.p., is contained within the front wheel, as is usual with the Singer tricycles. The main framework of the machine is of the usual pattern with the exception of top tube, which has been curved downwards, so as to allow an easy mount and dismount. From the rear of the back axle a rectangular frame projects horizontally. This carries a platform which is hung on carriage springs. On the platform is a comfortably upholstered seat, which pivots at the rear right corner. In front of the platform is a splash-board, which protects the rear rider from the wind and any mud which may be thrown up. Access to the rear seat is gained by swinging it back on the pivot, and when the passenger is mounted it is pulled forward and catches by an automatic spring. There is a band brake on the back axle which is applied by a pedal conveniently placed on the left side of the down tube. The back seat is reversible, so that the passenger may face either backward or forward, or the machine may be had with a suitable box or basket for tradesman's use. Another type suitable for speed or touring is one which has the frame extended behind the rear axle so as to provide a seat for another rider who has a pedalling gear driving direct on to the back axle. Both front and back-pedalling gears have independent free-wheels, so that either, or both, riders may pedal at will. This type is also interchangeable with the "Tri-voiturette."

Two different types of motor-tricycles fitted with $2\frac{1}{2}$ h.p. De Dion or Automoto air-cooled engine are being made by Messrs. W. King and Co., of Sidney Street, Cambridge. In one design the head of the motor projects right through the head of the bicycle. The steering-socket and the part of the same enclosed thereby are absent, and a separate ball bearing is formed at the end of each backbone. The fork sides are continued up to the top of the head, and bow out laterally, thus providing the necessary space for the cylinder, which is secured to both tubes of the frame, and also to the two steering bearings. A stay is introduced between the top and bottom tubes between the crank case, to which the motor is also secured. A surface carburettor and petrol tank, holding $1\frac{1}{2}$ gallon, fill up the remainder of the main panel of the frame. The power is transmitted from a pulley on the crankshaft to a double pulley carried forward of the bottom bracket, and thence to the back wheel, belts being employed for both drives. In the second design, the motor is arranged vertically behind the main down tube, and in this case drives through a single band on to a pulley on the back wheel. The pulley is secured to the rim by radial brackets and the tank practically fills the open part of the diamond of the frame.

Many improvements have been made in the 1902 Excelsior motor-bicycle by Messrs. Bayliss, Thomas, and Co., Ltd., Coventry. The power of the engine has been increased to $1\frac{1}{2}$ h.p. on the brake. This has been attained without increasing the width of the crank chamber, and adding but few ounces to the weight. An arrangement is being fitted, by which the engine can be automatically lubricated without dismounting from the saddle. The carburettor has been increased in size, thereby giving greater capacity for petrol, but, at the same time, not being in the way of the rider's knees. The contact-breaker has been improved, and also the sparking plug, in the latter doing away with the porcelain covering. The

inlet and exhaust valve, compression tap, and interruption block have been altered, and made more satisfactory. An "Excelsior" motor-bicycle for ladies' use is also being introduced by this company. The engine and transmission are fenced in by removable protectors. The motor is carried below the bottom front tube, and the carburettor is placed behind the head between the double curved front frame tubes. In addition to motor-tricycles and quadricycles, Messrs. Brown Bros., Limited, of Great Eastern Street, E.C., are devoting considerable attention to motor-bicycles. It will be remembered that the "Brown" bicycle has the motor ($1\frac{1}{2}$ h.p.) arranged in the angle of the frame above the bottom bracket, being clipped both to the down tube and the lower cross tube. Transmission is by a twisted belt to the rear wheel, and a very simple form of surface carburettor is fitted. The firm are now using a specially-designed frame by the B.S.A. Company for their motor-bicycles. A connection for advancing the ignition also serves, when reversed, for lifting the exhaust valve. Sufficient petrol can be carried in the carburettor to feed the motor for about 50 miles. The ignition is electrical, the current being supplied by accumulators, which are attached either to the seat tube or back stays. The sparking coil is attached by bands to the seat pillar tubes, in a position so as to be out of all obstruction. The weight of the machine complete is 75 lbs.

The 1902 type Werner Motocyclette, which is being introduced by Werner Motors, Limited, 28, Brook Street, Bond Street, London, W., is essentially different in many ways from any other type on the market, and embodies several patents and a registered design. The frame is specially designed, and of ample strength. The bottom tube is forked and bolted to the top of the crank casing, and the front of the angle of the back triangle of the frame is bolted to another point on the casing. A tubular stay runs below the tanks parallel to the top tube. The $1\frac{1}{2}$ h.p. engine is placed low down, and just halfway between the two wheels, in an absolutely vertical position, thus ensuring perfect and regular lubrication. The engine being close to the ground, the centre of gravity is very low, and consequently the steering is steady, and the

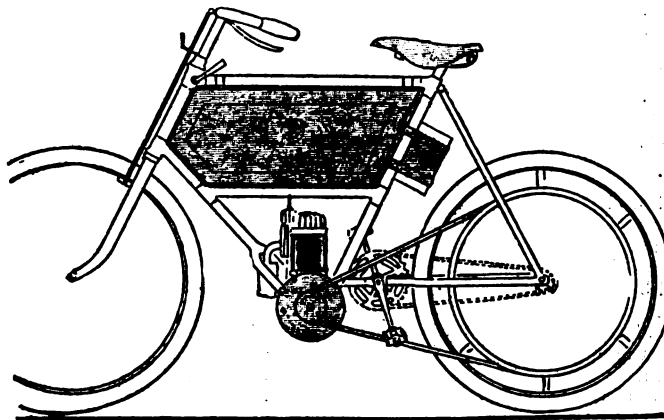


FIG. 3.—THE 1902 WERNER MOTOR BICYCLE.

danger from side-slip is claimed to be practically non-existent. The driving is done by means of a belt from a pulley on the engine shaft to a steel rim firmly bolted to the back wheel rim. This distance between the belt pulleys has been carefully considered, and the motor has been fixed in a position which allows a long belt to be used. The bicycle can be pedalled when required for starting or up an unusually steep hill by the ordinary chain and free-wheel system. An entirely new pattern pulverising carburettor is fitted in conjunction with the motor, which is said to be very effective and economical. The petrol tank holds sufficient for 100 miles, and an extra reservoir can be fitted if desired. A very powerful rim brake is fitted to act on the front wheel, and a band brake acting on the back wheel can be supplied when ordered. The 26-in. wheels are shod with 2-in. Dunlop special motor-bicycle tires with thickened edges, with or without non-slipping treads, or 650 mm. by 50 mm. Clipper Michelin tires.

The Kitto motor-bicycle can now be had from Mr. W. H. Kitto, Hartington Road, Chiswick, S.W., with either a frame of American or English construction. The motor ($1\frac{1}{2}$ a.h.p.) is arranged high up on the lower cross tube of the frame, and is supported on a bedplate set on the tube. The oil and spirit tanks are supported from the top tube, while the batteries are carried behind the saddle. The power is transmitted to the rear wheel by a belt. An adjustable jockey pulley is fitted. The left handle twists for the making and breaking of the electric circuit, but otherwise the handle-bar is free from levers and similar fittings the braking action being provided for in the Morrow free wheel and back pedalling brake contained in the rear hub. In place of the usual carburettor a special form of vaporiser in which the air and gas are mixed automatically is employed. The tank supply is three quarts of petrol, which is said to be sufficient for seventy-five miles when the rider becomes experienced. An automatic arrangement for the lubrication of the crank chamber is provided.

(To be continued.)

THE DAIMLER MOTOR COMPANY.

The fifth annual general meeting of the Daimler Motor Company, Limited, was held at the Holborn Restaurant last week, under the presidency of Sir Edward G. Jenkinson, K.C.B., Chairman of the Company. The Chairman said: I wish to-day to explain to you, as shortly and as clearly as I can, the present position of affairs, and to give you the views of the board as to future policy and prospects. We have now appointed as works manager a man who came to us with a very high character, and who has had a thorough scientific training, both in America and in Germany, as an engineer and in the organisation and working of shops. Although only appointed in the beginning of November, the good results of his management are already apparent. I am glad to say that, notwithstanding the bad management in the past and all the difficulties which the company has had to contend with, the business goes on steadily improving. The present board does not desire to take too much credit to itself for the improvement this last year. It took charge of the business too late in the year for it to do much to increase sales, and the full results of its labours cannot yet be seen. The present board claims that it has not only maintained the progress which was going on, but it has during the last few months initiated a new and sound policy, from which a larger business and greater progress may be expected in the future. A few figures will show the progress that has been made since the year 1898. Taking the sales first, they have been: In 1897-8, £47,239; 1898-99 (fifteen months), £62,813; 1899-1900, £63,738; 1900-1901, £73,596. Secondly, cash receipts: 1898-99 (fifteen months), £51,580; 1899-1900, £67,316; 1900-1901, £80,615. Thirdly, the gross profit on manufacture: 1898-99 (fifteen months), £15,290; 1899-1900, £14,920; 1900-1901, £20,628. And, fourthly, the profit and loss: 1897-98, £1,424 loss; 1898-99 (fifteen months), £1,045 profit; 1899-1900, £4,430 profit; 1900-1901, £6,742 profit. Orders on hand in the manufactory on September 30th, 1901, numbered seventy, representing a value of £31,335. These figures are so far satisfactory, in that they show we have a good and expanding business, if we take advantage of our opportunities, build our cars of types up-to-date, and have good management. The two features that are unsatisfactory in our accounts for the year are the increase in our liabilities and the large accumulation of stock. A large stock was accumulated in 1900, which could not be utilised in the spring of 1901, and which could only gradually be worked up into cars for sale. When this board took charge it was too late to build cars for sale during the season of 1901. All that we could do was to complete orders already on hand and to take new orders. By degrees this accumulated stock will be worked up into cars and profitably sold, and the amount will be reduced to proper dimensions. There is nothing in the accounts to make us despondent about the future. We have strong rivals and competitors, however, and there can be no doubt that as the demand for motor-cars increases competition will become keener, and prices will be reduced. We must be prepared to meet this new condition of things, and, above all, we must not be too proud to learn, or too self-satisfied to acknowledge that the English are not the only people who can manufacture good cars. French manufacturers have stolen a march upon us, and this year the sale of French cars has increased immensely in England. Yet I will not allow for a moment that we cannot manufacture cars as good, or that our workmanship is in any way inferior to French workmanship. On the contrary, I believe that our engines, frames, gears, etc., are of better material and workmanship than those of the French. But what we have to do is to study the public taste more, to exercise more economy in manufacture, and to have cars for sale when customers are ready to buy. First thing is to get even with the French, and then, if we can, to surpass them. Now it is evident, if I have made myself clear, that if we are to succeed we must adopt a policy suitable to the state of things I have described, and must have no deviation from it. In the opinion of the present board, our policy must be based on four essential conditions. First, good works management; second, good commercial management; third, the manufacture in considerable numbers of two, or, at most, three, standard types of cars, which should be ready for sale in the early spring and summer; fourth, sufficient working capital. The three first conditions are practically governed by the fourth. Without a sufficient working capital we cannot carry out the third condition, and, unless we have cars for sale in sufficient numbers, we cannot afford to pay adequate remuneration to our managers. We have already, as I have told you, appointed a good works manager. We have in view the appointment of a managing director, and we have decided upon certain types of cars, which, we hope, will be ready for sale in the spring of 1902; but if we are to work with economy and to have cars ready in sufficient numbers, we must have more working capital without delay. Hitherto, in my opinion, the cost of manufacture has been out of proportion to the output, and I am convinced that at a reduced cost a much larger output can be obtained. I have strong hopes that under the management of Mr. Percy Martin, our new works manager, this result will be attained. We have considered most carefully how the money can best be raised to provide us with the working capital we require. We have decided to make an issue of 5 per cent. mortgage debentures, repayable at 105, and the shareholders will have the first chance to take them up on the underwriting terms. The money provided from this source will enable us to carry on energetically the policy which I have advocated, and we feel confident that your business will go on increasing, and that before long you may expect

large profits. For some time past negotiations have been going on with the board of the Motor Manufacturing Company for an amalgamation of the two companies. It was arranged that the Motor Manufacturing Company should be absorbed by this company, and that their shareholders should receive from us one ordinary share for every three ordinary shares held by them; but when we came to go into details we failed to come to a satisfactory arrangement. This is to be regretted, because we believe that an amalgamation on fair terms would be to the advantage of the companies. Perhaps negotiations may be reopened, and the board may have, at some future date, proposals to lay before you. It was our genuine desire to bring about the amalgamation of the two companies, but we had, of course, to safeguard the interests of our shareholders, and also to see that any arrangements which might be made, especially financial ones, would not be of a nature to hazard the success of the business of the amalgamated companies in the future. I have now to move the adoption of the report and accounts.

Mr. J. H. Mace seconded the motion. Mr. E. H. Bayley said he had one or two questions regarding the accounts which he wished the chairman to answer. He desired to know, first, who valued the stock of cars and stores. The works manager, of course, was the proper person to do this, and in previous years the words "as valued by the works manager" appeared against the item; but these were now omitted.—The Chairman said the valuation was made exactly as in former years by the works manager, the figures also being gone into by the works committee of the board. Mr. E. H. Bayley: And increased, I presume. The Chairman: No; not increased. The words referred to by Mr. Bayley were struck out by arrangement with the auditors.

Mr. E. H. Bayley said it was satisfactory to know that the figures were correct. He wished to know why there had been an increase of £620 in the directors' remuneration, and also who the director was to whom £398 was paid for special services? Since he (the speaker) left the board in April last, two very serious things had happened. One was that there had been a drop in the price of shares of 6s., and, what was still more serious, the fall which had taken place in the credit of the company.

Mr. H. J. Toor asked what proportion of the stock was up-to-date, and could be turned into finished cars that would command a ready sale during the coming year. He also wished to know the reason for such a large expenditure as £1,660 under the head of legal and professional charges.

Mr. Holt asked on what terms it was proposed to raise the new debentures—what commission or underwriting fee it was proposed to pay.

The Chairman said, that regarding the question of the directors' fees they were debited in accordance with the provisions of the articles of association. The amount in the profit and loss account was really divided into two parts, one being credited to the old board for six months of the year, and the other part to the new board. The former board had still three months' fees due to them, and the present directors had the whole six months' fees due to them, the latter not having drawn a single penny for remuneration, and he believed he was right in saying it was the intention of the directors not to draw anything until the company had sufficient working capital to carry on the business in the way they wanted to carry it on. The director to whom remuneration had been paid for special services was Captain Longridge, who, at the request of his colleagues, went to Coventry to take charge of the business, and stayed there for some months while the board were looking out for a works manager. His services were of great value to the company, and the remuneration was exceedingly reasonable. Regarding the stock, it was to a very large extent stock which they could utilise, at the valuation placed upon it, in the manufacture of cars which could be sold at a profit. The directors, together with the new works manager, inspected it very carefully, and came to that conclusion. Of the total amount of law charges—£1,660—over £1,408 was incurred during the past administration, being due largely to lawsuits which he considered should never have been entered upon. As to the terms upon which the new debentures would be issued, he could not go further than he had done in his statement, because negotiations were still in progress, and much depended upon the valuation which was going on at the works.

The motion for the adoption of the report and accounts was then put and carried unanimously.

Captain C. C. Longridge, in moving the re-election of Sir Edward Jenkinson as a director, referred to the large amount of time and labour that gentleman devoted to the business of the company. Sir Edward was not only chairman of the company, but also of two of its committees, which occupied an enormous amount of his time. Mr. Mace seconded the motion, which was unanimously agreed to. Captain Longridge was also re-elected to the board. Mr. Avery proposed a hearty vote of thanks to, and confidence in, the chairman and his colleagues. The motion was carried, and the chairman, in acknowledging the compliment, said the proof of the pudding was in the eating, and he thought they would have to wait and see whether or not this praise was deserved. Another year would tell.

LOCOMOBILE STEAM CARS IN FRANCE.

As the impression generally exists that Locomobile steam cars are not permitted to be used in France, Mr. Letts, of the Locomobile Company, asks us to mention that they have had the carriage accepted by the authorities for a long time, but it has been impossible until now to do very much business in France owing to their having to make several

alterations on the carriage before they could get it passed by the authorities.

Several clients have written, asking what changes have to be made to enable them to take their Locomobile into France, as after using their vehicle in England during the summer they desire to take it with them while wintering abroad. Their Paris agent has consequently furnished the following information:—

In order to comply with the French regulations the following changes are necessary:—16 boiler tubes fixed so that they can be removed, if necessary, in order to examine the interior of the boiler; additional water column; additional safety valve; additional hub brakes on the rear wheels; French gauges reading in atmospheres, with a red arrow to show the point at which the valve should blow off, and also what air pressure is considered safe.

The import duty on automobiles is 60 fr., per hundred kilos., a kilo. being roughly 2 2-10 lbs., so assuming that the car complete would weigh about 825 lbs., this would amount to 380 kilos., which would cost about 228 fr., or, say, between £9 and £10. This duty would, of course, be refunded when the carriage was taken out of France. The best thing would be for the customer to ship his carriage direct to L. Barriere and Co., 22, Rue St. Sabin, Paris, through shipping agents, who would attend to the duties for him. The principal charge in making changes would be for brakes, which would be a matter of about eight guineas. The other changes would be principally labour, and should not amount to more than £4. It would not be necessary to make any change on bringing the car back to England, and then it would always be ready to take to France any time its owner might desire.

A NON-STOPPING CASE.

At the Stafford Borough Police Court, George Cooper Hewitt, Lord Shrewsbury's motor-car driver, was summoned for not stopping when requested, contrary to the provision of the Light Locomotives on Highways Order, 1896. It appeared that on Friday morning Dr. Maison was being driven in a close carriage along the Lammascote Road when the defendant was coming in the opposite direction, driving a motor-car. The horse became restive, and the driver put up his hand for defendant to stop, but he did not do so. Defendant alleged that he did not see the driver's hand up. He admitted, however, seeing Dr. Maison hold up his hand, but it was then too late for him to stop. A fine of £5 and costs was imposed.

TWO FATALITIES.

An inquest was held at Westminster on the body of Frederick P. Haslam, corn factor. Evidence was given to the effect that the deceased was driving with his wife in Hyde Park, when the pony, frightened by the noise of a motor-car, reared and threw the deceased into the road. He was pitched on his head and died within an hour. Nothing more was seen of the motor car, but, according to a policeman, there was no suggestion that it was being driven at an improper pace. A verdict of accidental death was returned.

At St. Albans an inquest was held concerning the death of Harry Austin, aged seventy-nine, who was knocked down and killed by a motor-car at Redbourn on Friday last week. The evidence showed that the deceased, an agricultural labourer, was returning from work when he suddenly left the path, with the result that the motor-car driven by Mr. J. S. Critchley ran into him and so seriously injured his head that he died shortly after removal to the hospital. The various witnesses called stated that Mr. Critchley and Mr. Tacchis, who was also in the car, did all they possibly could for the deceased, and independent testimony established the fact that the car was not being driven at more than ten miles an hour, and it was completely under control. A verdict of accidental death was returned, and the driver of the car was exonerated from blame.

THE CAMPAIGN.

As will be seen from another column, Mr. Paris Singer has acted most liberally in the interests of the automobile movement by giving £50 to defray the cost of printing and dispatching to the County Councils of England and Wales, and to members of both Houses of Parliament verbatim reports of the speeches made by the Rt. Hon. Henry Chaplin, M.P., and Lord Onslow at the anniversary dinner of the Automobile Club. The campaign which the Club commenced a year ago by the publication of its blue book to County Councillors, is far from ended. The Club will not rest content until it has obtained a revision by Parliament of the existing law and regulations affecting motor vehicles.

The provisions of the new Act are receiving most careful consideration on the part of members of the Special Legislation Committee, and Mr. Roger Wallace, K.C., the Chairman of the Club, with the Secretary, recently had an informal conference with Mr. Walter Long, President of the Local Government Board, on the matter.

It will be seen from another column that it is desired to obtain for the purposes of this campaign accurate and incontestable information as to the space within which motor vehicles may be stopped when travelling at various speeds. Manufacturers and agents and private members may, by entering their vehicles for this trial, render great assistance to the Club in

pursuance of the campaign. Manufacturers and gentlemen who are willing to enter vehicles for the trial are invited to communicate with the Club Secretary without delay, as it is probable that the trial will take place, weather permitting, before or shortly after Christmas.

It is hoped that affiliated clubs in districts where there are electric tramways will assist the Club by obtaining incontestable evidence taken in the presence of Justices of the Peace as to the speed at which tramcars are driven in cities. The evidence should be taken partly within the boundaries and partly in the suburbs of a city, and the time of day at which, and the name of the street in which such records are taken should be stated.

The results of the Club's campaign are beginning to be seen. The County Council Association have resolved that the statutory limit of the speed of motor-vehicles should be removed. The Association recommend at the same time the numbering of motor-vehicles and increasing the penalties attaching to infringement of the law. Presuming that the specific limit of speed be removed, numbering and heavier penalties would be welcomed by many motorists as methods for checking the selfish and inconsiderate driving by a very small minority of automobilists which has undoubtedly been the cause, to some extent, of the opposition to the movement.—*Automobile Club Notes and Notices.*

THE STORAGE OF PETROL.

At the Kingston County Bench, last week, Messrs. George Nunn and Sons, of High Street and Portsmouth Road, Thames Ditton, were summoned for keeping petroleum spirit upon their premises without being licenced to do so by the Esher and Dittons Urban District Council. Mr. H. A. Houghton, an inspector under the Explosives Act, deposed to visiting the premises on October 22nd, and to finding stored there quantities of petrol, a spirit used for the propulsion of motor-cars. He described the premises as unsuitable for the storage of such an inflammable spirit. In answer to Mr. Campbell, witness said he tested the spirit himself by throwing a quantity on a slab of stone and setting a light to it. The flame rose about 3 ft. He was aware also that the defendants kept a motor-tricycle for private use, and that they were entitled to keep quantities of the spirit, but only in proper places. In answer to the Bench witness said as early as April the defendants applied to the District Council for a licence, but it was refused, as the premises were not suitable, and he advised the defendants what to do in the matter. A suitable place subsequently was erected in Portsmouth Road, and a committee of the District Council had recommended a licence should be granted for this place, but it was not granted yet. Mr. Campbell, for the defence, contended that the defendants having a motor-tricycle, were entitled to store sufficient petrol for their private use, which was all they did, and he further urged that the test of the spirit as carried out by the Inspector did not satisfy the requirements of the Petroleum Act of 1871. The Bench convicted, and imposed a fine of 9s. 6d. and 10s. 6d. costs in each case. Mr. Campbell asked the Bench to state a case for the High Court on the question of the test, but the Bench declined.

AN UNSUCCESSFUL APPEAL.

WILLIAM HEPBURN, Aberdeen, was on July 15th last convicted and fined 40s. for having driven a light locomotive in Aberdeen at a greater speed than ten miles an hour, contrary to the Light Locomotives on Highways (Scotland) Regulations, 1896, made by the Secretary for Scotland in pursuance of the powers given him by Section 6 of the Light Locomotives on Highways (Scotland) Act, 1896. At a diet for the trial of the case on July 11th, the appellant's agent averred that the prosecution was not competent without proof that the rules and regulations libelled had been laid before both Houses of Parliament in accordance with the provision of Section 6, which sets forth "that every regulation purporting to be made in pursuance of this section shall be forthwith laid before both Houses of Parliament." No evidence was adduced by the appellant in support of his objection, nor was any evidence adduced by the respondent that the section had in this respect been complied with, and Sheriff substitute Robertson held that it was immaterial for the purposes of the prosecution whether in point of fact they had or had not been so laid. The question of law for the court was whether, in view of an averment by the appellant that the regulations had not been laid before both Houses of Parliament in accordance with Section 6, the prosecution was competent without proof that the regulations had been laid before Parliament. Their lordships dismissed the appeal on the ground that the Sheriff was right in holding that it was unnecessary for the Procurator to prove that the regulations had been laid before both Houses of Parliament, and that it was immaterial whether they had or not, as they were merely to be laid before Parliament for information and not for confirmation. The Crown was allowed seven guineas of expenses.

DE DION-BOUTON v. MANNING AND SON.

In the Chancery Division the plaintiffs sought an injunction to restrain Messrs. Manning and Son, Limited, dealers in automobiles, from representing motor-cars sold by them to be the same as cars sold by the plaintiffs; from representing, by circulars, advertisements, or otherwise, that they are agents in this country of Messrs. De Dion and Bouton, or

are entitled to sell motor-cars manufactured by them; and from carrying on their business in a manner calculated to lead the public to believe that they are representatives of De Dion and Bouton. After hearing counsel—Mr. A. J. Walter for the plaintiffs, and Mr. Buckmaster for the defendants—his lordship made an order by consent, perpetually restraining the defendants from using the names. The defendants agreed to pay a sum for damages and costs.

SAINT AUTO'S LITANIES.

THE *Auto-Velo* furnishes the following extracts from a poem, "written between two punctures," by one of its fervent disciples of automobilism:—
Deliver us, Saint Auto:

Withal, at every juncture,
Deliver us from puncture.

Preserve us from ignition
That acts in fair condition
Until a storm o'ertakes us,
Then, suddenly, forsakes us,
Short-circuited, no city
In sight—the saints take pity!
From water-pump and sliding
We would, in thee confiding,
Implore protection duly,
And render thanks most truly.

But O, at every juncture,
Deliver us from puncture.

FURIOUS DRIVING CASES.

At Brentwood, last week, Mr. A. L. Bucknall, of Wikhurst Manor, Sevenoaks, was fined £3 and 7s. costs, for furiously driving a motor-car on November 8th. A police-constable stated that Mr. Bucknall covered the six miles from Romford to Brentwood in seventeen minutes.

At Steyning, Mr. Frank H. Butler pleaded not guilty to a summons alleging that he drove a motor-car at a greater speed than was reasonable and proper, having regard to the traffic, at Southwick, on November 17th. Police-constable Thomas Bristow said, on the afternoon of Sunday, November 17th, he saw defendant driving a car very furiously along Adur Terrace into Albion Street, Southwick. He held up his hand to the defendant and told him he was travelling a great deal too fast, and to the danger of the public. Defendant said he was not going at an excessive speed at the time spoken of. Fined 10s. and costs £1 12s. 6d.

At Stockport, Benjamin Marsden, engineer, of Heaton Chapel, was charged with furiously driving a motor-car. The evidence showed that he drove at a speed equal to seventeen miles an hour. A fine of 20s. and costs was imposed.

At the same Court, Charles Cooke was fined 10s. and costs for furiously driving a motor-bicycle at Cheadle. The defendant was seen to ride at a terrific rate through High Street, Cheadle.

At Chertsey, last week, Mr. Henry Pearce, of Hampstead, was summoned for driving a motor-car at a greater speed than twelve miles an hour at Windlesham, on November 16th. Mr. Staplee Firth defended. Inspector Marks said that he timed the car and found that it covered a quarter of a mile in 35.25 secs. During the cross-examination of the witness, one of the magistrates described a question put by Mr. Firth as absurd. Mr. Firth: Your remarks are very embarrassing. A man is innocent until he is proved guilty. You are trying to reverse the thing, it appears to me. Further cross-examination elicited the fact that it was the anniversary run of the Automobile Club on the day in question. In giving evidence on his own behalf, the defendant said his car was geared to ten miles an hour. Other witnesses were called for the defence, and the Bench imposed a fine of 40s. and costs.

At the Rotherham West Riding Court a Frenchman named Felix Naulet, of Ollerton, was summoned that he, being the driver of a motor-car, gave no warning as required, and also that he ran it at an excess of speed at Wickersley on September 4th. Mr. F. J. Mason prosecuted. He said the defendant was engineer to Lord Savile, and on the day in question was proceeding from Ollerton to Sheffield. As he approached Wickersley he passed a trap at a very great speed. He did not sound his gong or bell, or give any indication of his approach. The car was in shape like an omnibus, and it caused the horse to shy into the side of the road. The rate of speed was over twelve miles an hour. Later, Police-constable Walker timed the car from a certain point near the Mason's Arms, Wickersley, to another point further down the road, and he calculated the pace at twenty-two miles an hour. It might be said the constable could not properly gauge the speed, but there would still be a wide margin for inaccuracy. The motor-car passed two horses attached to a dray near the Stag Inn, and caused them to swerve to one side of the road, and it was then being driven in the same reckless way. Defendant was seen at Sandbeck by Police-constable Walker, and at first denied that he had ever been out with the motor-car that day, but in the presence of Lord Savile

he admitted that he had. Defendant pleaded ignorance of the law, and expressed regret if he had transgressed. He had been a driver in England six months. The Bench imposed a fine of £10.

Reported above are 6 prosecutions for furious driving, for which fines amounting to a total of £17 without costs were inflicted.

THE manufacture of light metal pulleys suitable for use on belt-driven motor-tricycles has been taken up by Mr. J. T. James, of Loveday Street, Birmingham.

"ALL ABOUT THE MINERVA MOTOR FOR BICYCLES" is the title of a useful little booklet which has been issued by Mr. D. Citroen, of 45, Holborn Viaduct, E.C.

MR. A. C. INSTONE has resigned his appointment with the Daimler Company, in order to take up the post of general manager to the Auto-Carriage Company, Limited, sole agents in England for the Bardon car.

A MOTORIST, whilst endeavouring to steer between a tramcar and an omnibus, at Kennington Gate, one day last week, came into collision with a coal wagon, the result being that he was thrown into the road and somewhat seriously injured.

WE learn that Messrs. De Dion-Bouton and Co. are taking up the question of motors for balloons. They have been making motors of 25 h.p. for this purpose, but they are now making a new motor developing 40 h.p., which will weigh only 400 lbs. This motor has four cylinders in line, with a single aluminium crank chamber.

THE December meeting of the Nottingham and District Automobile Club will take place at the Blackboy Hotel, Nottingham, on Friday, the 13th inst., when the guest of the evening will be Mr. C. Johnson, secretary of the parent organisation. There will be an informal club dinner at 7.30. The annual dinner will be held on Friday, January 10th.

TO CORRESPONDENTS.

All communications intended for insertion in this Journal or relating to Editorial matters should be addressed to THE EDITORIAL DEPARTMENT, MOTOR-CAR JOURNAL, 39 and 40, Shoe Lane, London, E.C., and must be written on one side of the paper only. Letters must in all cases be accompanied by the name and address of the writer, as no notice will be taken of anonymous communications.

The Editors cannot undertake to return MSS. or drawings, although every effort will be made to do so in the case of rejected communications. Where such are regarded as of value, correspondents are requested to retain copies.

The Editors do not hold themselves responsible for the opinions expressed by their correspondents, or for statements and facts which do not appear in the editorial columns.

The Editors and publishers beg also to state that they will accept no responsibility for unsolicited contributions, even if used, unless payment for same is directly specified in forwarding, and the terms arranged before publication.

To insure insertion communications and contributions must be in the Editor's hands by Tuesday forenoon of the week in which the same are intended to appear. Disappointment may be caused by non-compliance with this rule, and to avoid this earlier receipt, if possible, is necessary.

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THE Motor-Car Journal.


VOL. III.]

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COMMENTS.

THE second annual dinner of the Yorkshire Automobile Club was held at Leeds on Friday evening, the 6th inst. The vice-president, Dr. Farrow, was in the chair, and amongst those present were Mr. Alexander Bosville, High Sheriff of Yorkshire; Mr. Cheswright, or the A.C.G.B.I. (who was the founder of the Yorkshire Club), and many other gentlemen. In proposing the customary loyal toast the Chairman spoke of the admirable example set by the King as an automobilist. The toast of "The Yorkshire Automobile Club and Automobilmism" was proposed by Mr. Higgins, who said that he happened to live within twenty yards of the Great North Road, and during the past eighteen months he could scarcely fail to have noticed a considerable accession to the ranks of automobilists. The Chairman, in responding, said he hoped the Club would succeed rather more than it had done up to the present. He thought that it ought to have a wider utility than that of merely personal intercourse. The Automobile Club of Great Britain and Ireland was doing a good work, and Yorkshire ought not to be backward in doing its share. The Chairman went on to say that automobilists had not, perhaps, suffered in Yorkshire so much as in other parts of the country from the over-officiousness of the police. The Yorkshire policeman, like the Yorkshire native, had some sense about him, and if he saw a motor-car travelling a little above the statutory limit, so long as the automobilist was not endangering any of the inhabitants of the county, he judiciously looked the other way. From those remarks, he must not be understood to appear as an advocate of high speeds on the road. Many suggestions had been made by County Councils and other bodies as to what should be done to limit the danger of the automobile. One of the suggestions was that each car should have affixed to it a distinctive number prominently displayed in large type. Personally, he was quite willing to agree to that suggestion if it were extended to include all vehicles. The toast was also acknowledged by Mr. A. W. Dougill, the Hon. Secretary, who mentioned that the membership of the Club had increased to fifty.

A Topical Dinner.

THE menu of the dinner must have produced a somewhat alarming effect on the few non-motoring guests. "Starting Handle," with which it commenced, though alarmingly suggestive of indigestion, proved nothing worse than soup, of which there were two varieties. "First Speed" carried the dinner into the fish stage, and "Advance Sparking" produced entrées. By the time "Top Speed" was attained "roast and boiled" was well to the fore. "Exhilaration" was found in roast turkey and salad. The "Slow Down" process was performed on motor-car pudding and other sweets. A "Stop" was made at dessert; after which came "Lubrication."

Mr. Dewar, M.P., and Motor-Cars.

COACHING men who love to "tool" a four-in-hand are taking to the "steering wheel" as naturally as possible. Mr. T. R. Dewar, M.P., who has driven mule teams in South Africa, oxen in India, ponies in New Zealand, and fours-in-hand in the Park, informs his friends that they need not be surprised if he goes in for motoring. While admitting the delights of ordinary coaching for distances of twenty miles or so he declares that there is nothing like the automobile for sensation and sport. In fact, he believes that in another six years' time there will be at least twenty motor-cars in London for every road coach.

Motoring and Sport.

MOTORING is a sport which can be indulged in all day without upsetting one for pleasures in the evening. Colonel Thornycroft, in relating some of his horse-driving experiences in the *Road*, tells how he once drove a four-pony team sixty-three miles in a day, and had a game of billiards in the evening, but his hand shook and there was little excellence in his play. Motorists, however, who have had good experience of the pastime, are able to indulge in such sports without inconvenience.

Motor-Cars Wanted in Belfast.

ACCORDING to many of the leading members of the Town Council of Belfast the tramway system in that important Irish centre is a disgrace. Several of them are wishful of seeing motor-cars introduced for the public service not only to convey passengers rapidly, but also as an incentive to the local tramway authorities. A recent request for a licence for a motor-bus was refused by the Police Committee, but at the last meeting of the Council a full explanation was given, it having been reported that the vehicle in question was not so modern as some that have been successfully worked elsewhere. Councillors Johnston and Davis and Alderman McCormick testified to the friendliness of the Police Committee to the new form of omnibus, and pointed out what an advantage the adoption of an adequate motor-car service would be. We hope that the motor-car industry will be well developed in Belfast, where commerce flourishes more than anywhere else in Ireland, and where a public service system of motor-buses should be profitable.

Beautifying London.

WHILE the development of the new thoroughfare from Holborn to the Strand and other great Metropolitan schemes are in progress the automobile industry is doing its part in the reform of London streets. Architecturally a great advance is in course of achievement, but unless the cleanliness of the streets is secured the real beautification of the Metropolis will be impossible. In substituting something that will not pollute the thoroughfares with refuse—as do horses—and that will demand smooth surfaces in the roadway, motorists are rendering easier the task of the street cleaning committees of the City and the various Borough Councils. This will be a substantial gain, and

its value is dawning upon many surveyors and local authorities. A few minutes' walk along Holborn—from the motor firms on the Viaduct to those in Shaftesbury Avenue—affords an interesting anticipation of the streets of the future. Of course the horses largely predominate, but motor-cars are becoming an appreciable quantity in the traffic of that part of London.

An Exciting Ascent.

LAST week's ascent of the Aero Club from the Crystal Palace was the first undertaken without professional assistance. The Hon. C. S. Rolls and Mr. F. C. Pollock were the passengers, and from first to last the ascent was marked by incidents of an exciting nature. A strong and gusty wind

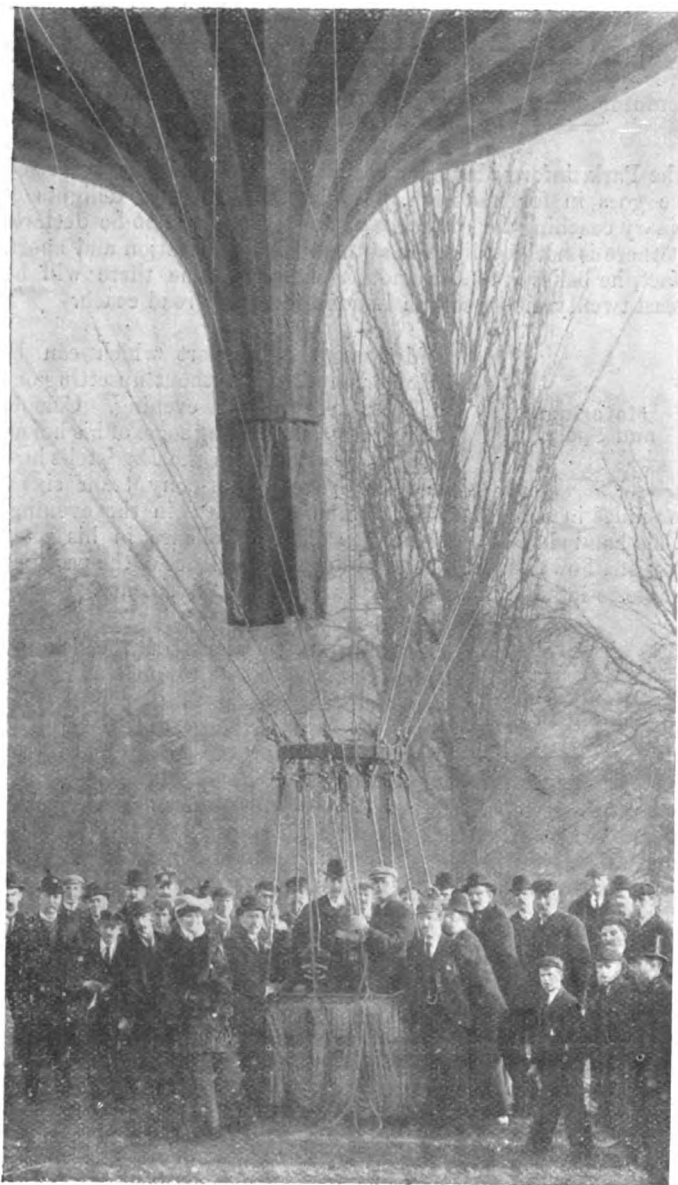


Photo by

[Argent Archer.]

rendered the start difficult. During the process of taking in ballast the score of assistants who held the guide ropes were at one time or another continually off their feet. During the scuffle with the elements a valuable aneroid barometer fell to the ground and was destroyed. Mr. Rolls, however, had a pocket instrument, with which altitudes were taken. After some reluctance on the part of the balloon several successful photographs were taken, one of which we reproduce. Finally ropes were let go and the two adventurous aeronauts were rapidly carried to the south-east. A shift of the wind bore the balloon to the north, and, to avoid the alternative of being carried over the North Sea, a rapid descent was made on the banks of the Thames near Gravesend.

Roads

THE Roads Improvement Association has addressed an important memorandum to the President of the Local Government Board. The chief plea put forward is for a central authority which would supervise the work of local authorities in maintaining the roads of the country. It is shown that the present system is extravagant, the control of our highways being divided among no less than 1,879 different authorities, whereas the work could be carried out more cheaply and efficiently by less than one-tenth of that number. The Association has determined to put its proposals into a Bill to be introduced to Parliament next Session, and if the Government is unable to adopt it a Royal Commission on the subject will be demanded.

The Failure of Alcohol.

It is truly remarkable, despite the many attempts to popularise alcohol as a motive power, and the many strong points which have been recorded in its favour, that so little success has attended the movement. Every motorist would welcome a fluid which promised to be cheaper, safer, and as effective as petrol, and these claims have been advanced for alcohol. Moreover, the latter is an artificial substance easily manufactured in almost every clime, whilst our petrol supplies are drawn from a few natural sources and are so limited that a "corner" could be worked in it without much difficulty.

Scope for Inventors.

THIS condition of things is not desirable. A growing industry like automobilism should not be wholly dependent on what may be described as a rare product. A new and cheap fuel with all the good qualities of petrol would advance motoring considerably. Alcohol, though so far an apparent failure, has many points of recommendation for inventors. It can be cheaply manufactured in our own country from many forms of agricultural produce. If the British farmer found a demand for such stuff he would take a kindlier interest in automobilism. Alcohol distilleries would spring up all over the country, and considerable employment be given in growing, collecting, preparing, and extracting spirit from the various field stuffs, etc., adapted for that purpose.

Alternatives.

THE complete applicability of alcohol to motoring may be chimerical, and consequently all our fond dreams of new home industries created by motoring may have to be abandoned. But, failing alcohol, perhaps some clever chemist may devise some other hydro-carbon which will be cheap, easy to produce, and powerful in use. Should such not be forthcoming immediately, we may hope at least for more attention being given to the heavy oils. A few firms have enterprisingly studied the matter, and with no inconsiderable success. We trust that progress in this direction will go much further. The ideal has not yet been reached. When the motorist can command a cheap, universally distributed, compact, and safe fuel, many of the woes which befall us at present will have disappeared.

More Check to Police Aggression.

THE police of Cheshire, Knutsford Division, have made an attempt to copy the tactics of the Surrey police, and, notwithstanding the public utterances of Lord Onslow, in which he denounced the tactics of policemen hiding behind hedges in order to trap honourable citizens, they prepared a well-laid plot to catch automobilists near Knutsford, and succeeded in stopping Mr. Nicholas Kilvert, a well-known Manchester gentleman, when he was driving his car from his residence at Brooklands to Chester. The fact that the summons had been issued against Mr. Kilvert raised a great deal of interest, and as it was the first case of its kind, he and his friends determined to put a stop

to the police oppression, if possible. The case came before the court at the petty sessions at Knutsford last week, when Mr. Kilvert was defended by Mr. Stapleco Firth. The sergeant of the police in charge of the case gave evidence in a very confident manner, and stated that the defendant travelled 110 yards, which had been measured by him with tape and a mark put at each end, in 15 seconds. He produced a stop watch in order to give a show of materiality to his evidence. He was subjected to a long and searching cross-examination, and ultimately he began to show signs of wavering from the confident position he had taken up at first. After several points had been severely shaken in his evidence he was attacked upon the exact instant when the car passed the two points mentioned by him, and as to his ability at the time of seeing the car pass such points. Before the cross-examination was finished, the Bench, who had listened carefully to the case, stopped it, and stated that they were perfectly satisfied, from the admissions made in cross-examination, that the sergeant's evidence was unreliable and the case was dismissed.

A Motor-'Bus Adventure.

THERE are so few motor-omnibuses in London that when one overturns it is a matter for comment. The other evening one of the automobile-'buses plying between Fulham and Piccadilly was entering Moore Park Road, Fulham, when a horsed 'bus coming in the other direction caused it to turn sharply—too sharply, as a matter of fact, for it fell over on to its side and the equilibrium of the eight passengers was disturbed. Two or three ladies fainted, and the 'bus became inflamed, while messengers went in all directions for the fire-brigade. Three fire engines quickly arrived; the ladies revived, and the flames were subdued. Eventually it was found that only one passenger complained of serious injuries. The point that we want to emphasise is that the incident was in no way due to any inherent vice in the automobile. Evidently the horse-drawn 'bus should be considered as equally to blame so far as the cause of the accident was concerned. In avoiding meeting that vehicle the motor-'bus overturned itself—evidence of the possession of the spirit of self-sacrifice.

The Club to the Rescue.

BUT for the timely intervention of the A.C.G.B.I., an event would in all probability have occurred on the Brighton road last Saturday which could not have failed to shatter the hopes of automobilism for many a year to come. A statement to the effect that two well-known automobilists had arranged a speed-contest to Brighton and back on that day had gone the round of the Press. Mr. Johnson, the Club Secretary, communicated with the proposed participants, pointing out the strong position which the Club intended to take in such matters, with the result that the race was abandoned.

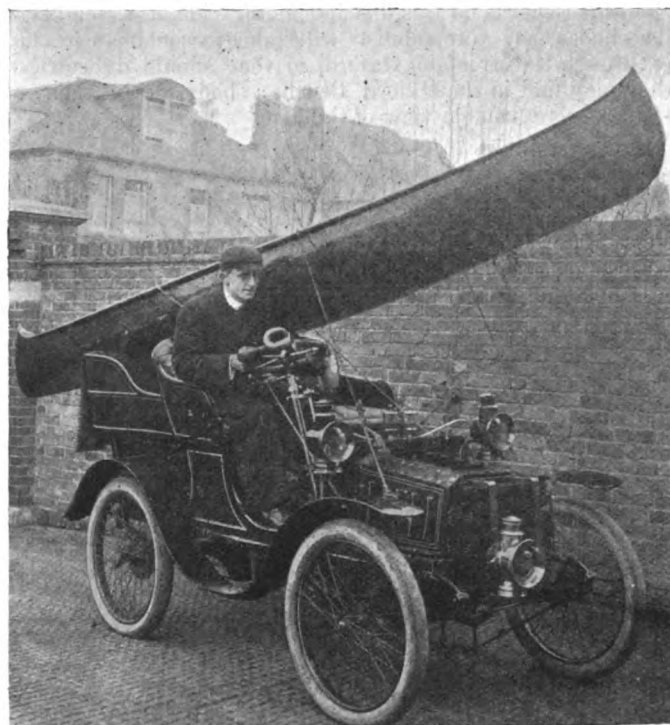
A "Big Event" in France.

REIGATE is easily eclipsed by an event which has recently taken place at that most charming of Parisian suburbs, Neuilly. In one day 217 motor-car owners and drivers appeared to answer summonses for exceeding the legal speed, refusing to stop when ordered, and other similar offences. Fines of varying amounts and, in some few cases, short terms of imprisonment, were inflicted. Our Parisian brother motorists did not take the matter so calmly as does the persecuted Britisher. A regular riot ensued, the voice of justice was drowned in shouts of derision and howls of protest, and only the timely arrival of a strong force of police saved the Court from destruction.

Counting the Cost.

ADVOCATES of a special track for motor-cars may be interested in knowing what such a road would cost. Mr. George Lowthian, a civil engineer, has recently published some figures on the subject. He calculates that a road 80 feet wide, paved with 4 inch granite cubes laid on pitching with a covering

of concrete sufficient to prevent settlement of the paving setts into holes or ruts, would cost £52,976 per mile. The estimate for a macadamised road, laid on stone pitching and well grouted and rolled with a steam roller, is £27,027 per mile. Somewhat startling figures even on a macadamised basis of calculation; but the motorist does not require a track 80 feet wide. One quarter of that width of a good roadway, reserved for him on any of the main thoroughfares to and from our great cities, would help considerably to solve the overcrowding problem.



MR. T. B. PERCY BRINGS HOME HIS CANOE.

Locomotion in London.

AT the National Liberal Club on Tuesday, Mr. J. Williams Benn, L.C.C., expressed, as he put it, some aspirations of an optimistic citizen, the subject of his lantern lecture being "Locomotion in London." The chairman was Sir Alexander Binnie (until lately engineer to the London County Council), who, speaking of the value of tramway subways, incidentally pointed out that they would be suitable receptacles for water mains, which now leaked so copiously out of sight. Contemplating the possibility of animal traction being totally superseded by mechanical traction, he indicated, as one consequent advantage to London, that the roads would remain far longer in good repair. What damaged them so speedily now, said Sir Alexander, was not the wheels of vehicles (which, indeed, tended to consolidate the surfaces), but the horses' hoofs. He looked forward to the time when the streets would be freed from the road-breaking horse and its insanitary concomitants.

Another Conversion.

AT the invitation of a friend, Mr. Wm. Glass, of Sydenham, took his Panhard over to the "ancient and loyal city" of Oxford a week ago, and had the good fortune to meet the Mayor (Alderman Gray) and the senior Alderman (Mr. Jason Saunders). Having heard that the Oxford Bench regarded automobilists with, shall we say a bedimmed eye, it occurred to Mr. Glass that the opportunity should not be missed, and after some inducement, he obtained Alderman Saunders, his daughter, and the Mayoress of Oxford as passengers on his car for a 20 mile spin. As luck would have it, the car was not running particularly well on this occasion, still the full legal limit was

averaged with, perhaps, a little makeweight. Alderman Saunders after thanking Mr. Glass for a most enjoyable ride, informed him that he saw no reason why a speed much above the legal limit should not be permitted on an open country road. He gave it as his opinion that some motorists drove too fast in traffic and round corners and seemed to have the idea that the road belonged to them. After the ride he jokingly allowed that most of his objections to motor-cars had been rubbed off. The Mayoress expressed her feelings thus:—"I've longed to have a ride on a car and can now say I've never enjoyed anything so much in my life." Alderman Saunders is of all men a friend of the horse, and his remarks on this, his first motor ride, are weighty. Mr. Glass hopes that automobilists will take reasonable care in driving through the streets of Oxford, so that should difficulties arise they may find in the Oxford Bench a body of gentlemen who will take a reasonable view of the case.



THE WAR OFFICE TRIALS—THE THORNYCROFT ROUGH-ROAD VEHICLE.

The Exhibition: A Suggestion.

THAT the general public takes considerable interest in the Automobile Club's annual show at the Agricultural Hall is apparent to all who have attended that display. Evidence of this fact reaches us every week in the correspondence which we receive on every variety of subject connected with the exhibition, ranging from inquiries as to the date of its opening, to invitations to discuss the mechanism of some particular car shown at the 1901 exhibition. This week we had an interesting letter—which we reproduce in another column—making a suggestion with reference to allowing the engines and machinery to be seen in motion. From some points of view the idea is a good one, but we fancy the noise and odour that would be associated with the experiment of running five or six hundred motors in an enclosed space would deter rather than induce the public to buy. The yard attached to the Hall is always open for this purpose, but to adopt the idea in the Hall itself is not practicable.

Motor-Car Service at Scarborough.

In connection with this point, the experiment now being made at Scarborough will be regarded with interest. A company, promoted in the spring by Messrs. Walker and Hutton, has inaugurated a motor-car service, and one car running in October and November earned £80. Within the past few days a second motor-omnibus has been put on the streets, and the third is practically ready. Then the town will have a service of motor-buses between the Grand Hotel and South Cliff, a car starting from each terminus every twenty minutes. The other vehicle will be used for trips to Scalby, etc., and special excursions into the country. The fare for the full journey in town will be 3d., with penny and two-penny stages. Evidently the motor-car will

be one of the attractions of the 1902 season at this popular northern resort. We shall be glad to hear of other seaside towns that are to be similarly favoured.

Ignition Troubles.

ON Wednesday evening, after the first of the Winter Session House Dinners, at the Automobile Club, an interesting and instructive paper on "Ignition in Petroleum Spirit Engines; Systems, Possible Failures: How to Discover and Remedy Them," was read by Mr. Ernest J. Hutton, J.P. The paper, which dealt exhaustively with the matter, was the first of a series destined to appear in a forthcoming Badminton Library book on Motoring. Quite as interesting, and perhaps more instructive to the novice, was the discussion and interchange of experiences which followed. More than one experienced *chauffeur* told a good story of early struggles with ignition, and enjoyed the laugh against himself as much as any of his hearers.

The Absurdity of the "Law."

THE *Liverpool Daily Post* is one of those great provincial dailies that has always opened its columns for "both sides of the question," and Mr. Archibald Ford has just had a long article therein dealing with the agitation now going on against automobilism in a way that should prove conclusive to Liverpoolians. Mr. Ford gives as an instance of the severity with which the law is administered as regards motorists, the case of a driver who in a short drive of twenty miles was summoned in three separate localities and mulcted to the extent of forty pounds in fines.

THERE once was a county called Surrey,
Which loved passing motors to worry.
But since business declined
Surrey's sorry to find
It was she was in too great a hurry.

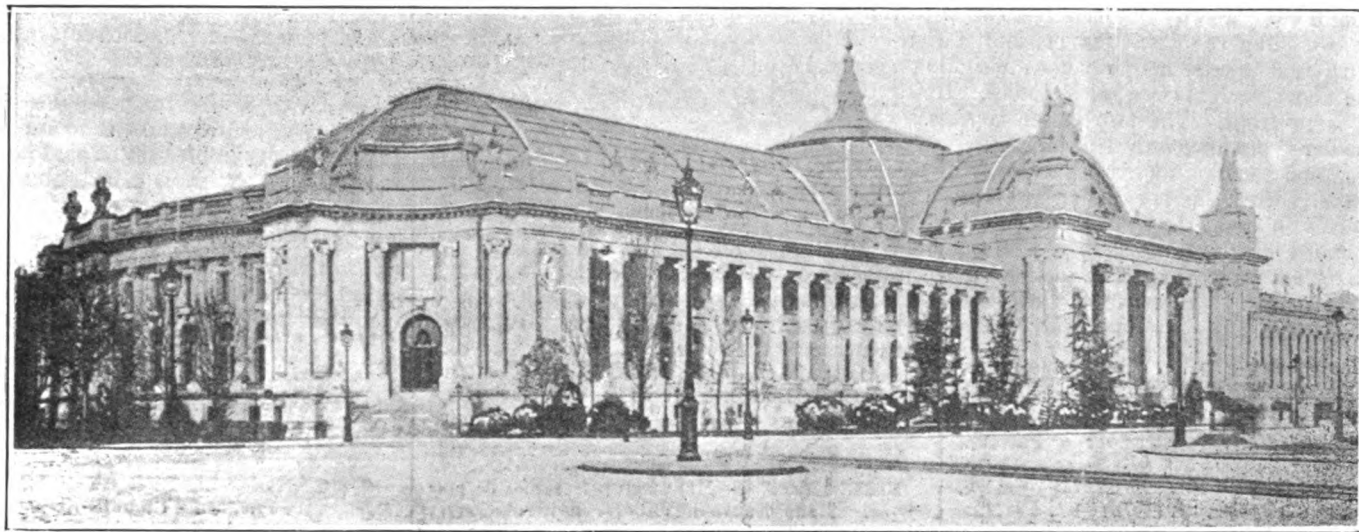
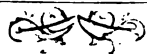
At a meeting of Dumfriesshire County Council, recently, Major Irving, of Burnfoot, made an appeal to the public in the county to assist the police in pulling up drivers of motor-cars who disregard the Council's regulations. He mentioned a case in the county where a driver disregarded the request of a gentleman driving a pony and trap to stop his car, with the result that the trap was ruined and the pony injured.

MR. VANDERBILT, the American millionaire, whilst driving his automobile at Deauville last summer, came into collision with a dogcart driven by M. Esbrau. The latter brought an action against Mr. Vanderbilt, and claimed 3,000 francs damages. The Seventh Chamber has given its judgment in the case, and only awarded M. Esbrau 1,000 francs damages, holding that both parties were to blame, the speed at which they were driving in each case being excessive.

A VEHICLE, the first of its kind, has lately been supplied to Hall's Safe Company, of New York, by the Vehicle Equipment Company, of Brooklyn. It is built on a very substantial steel bed, will carry ten tons, and is equipped with three 6 h.p. electric motors, two of which are used for traction and one for hoisting. To give some idea of the practical value of the vehicle, it may be stated that it recently hoisted a safe weighing four tons seven stories in six minutes, which operation would otherwise have taken several men half a day to perform.

MESSRS. ROBERT VAUZELLE AND CO., of 21, Rue de Picpus, Paris, have introduced a new liquid battery for ignition purposes, the strong point of which is that the positive elements are removable. The "positive element" is in cylindrical form and fits into the usual oblong case. The battery claims to obviate the risk of long halts even in the event of short-circuiting, which is immediately overcome by changing the positive element. Spilling of liquid is rendered impossible, no matter how violent a shock may be sustained. Other items of note which figure in Messrs. Vauzelle's catalogue are water cooled heads and ignition plugs at popular prices.

The Paris Motor-Car Exhibition.



LE GRAND PALAIS, PARIS—THE LOCALE OF THE EXHIBITION.

HE would indeed have been put down as an unreliable enthusiast, not to use any stronger term, who in 1898 had made bold to predict that in three years the annual exhibition would be held in the Grand Palais which would require to open up its vast crypt in order to be large enough to accommodate the exhibitors. Yet such is the case, and even then every available yard is occupied, and it becomes self-evident that next year a much larger building will have to be found. As I passed the Grand Palais on Monday night towards midnight, going up the Champs Elysées to my hotel, it was brilliantly illuminated within, and the echoes of constant and energetic hammering told of the stalls which were being hurried on for the opening, and on Tuesday morning I was pleasantly surprised to see nearly all the stands completed and the exhibits in place, and little remaining to be done save to rearrange the position of the cars on their platforms. It was hardly the time to go round bothering people for details and novelties, but I was able to get the salient features of the show.

Before, however, going into details of differentials and change-speed gears, I will describe briefly, for the benefit of those readers of the *Journal* who do not know the building, and who did not visit last year's show, the position and general appearance of the structure. The Grand Palais is an immense stone building highly ornamental in design, and with many beautiful sculptures and coloured tile friezes around it, and a roof of glass. It is situated at the corner of the Champs Elysées and the new bridge (Pont Nicolas II.), which was built at the time of the 1900 Exhibition, and this bridge and palace, together with the Petit Palais opposite, form the only trace which will remain to posterity to mark the place of the great 1900 Exhibition. Inside the Grand Palais, apart from the stands crowded with motors of every description, two things strike the eye, namely, the great airship made by M. Tatin for M. Henri Deutsch and the bronze statue of Vercingetorex by Bartholdi. M. Deutsch's airship is cleverly suspended from the roof, and consists of a huge cigar-shaped envelope with a triangular wooden keel suspended from it, and a propeller projecting at one end. The statue of Vercingetorex, who is mounted on a war horse and trampling his foes underfoot, is intended to be placed definitely at Clermont-Ferrand, which is the scene of his exploits. It is too large to be taken by train, and a De Dion-Bouton steam wagon has been requisitioned to carry it to its destination. It appears in the exhibition on

its automobile ready to make the journey as soon as the doors of the Salon close.

At ten o'clock on Tuesday the exhibition was opened, and by two o'clock, when M. Loubet, the President of the Republic, arrived, escorted by M. Millerand (the Minister of Commerce), General Florentin (the military governor of Paris) and M. Lepine (the chief of the police), the building was so crowded that it was almost impossible to move.

Amongst the seven hundred and odd exhibits I noticed Panhard and Levassor's stand, which includes the first and only car yet turned out by this firm with the new Centaure motor and carburettor. The Centaure motor has the *culasse* or valve box and the cylinder cast in one piece, so that there is no cylinder head joint to make. The exhaust valve is placed directly under the inlet valve, and the speed of the engine is regulated by means of a governor which actuates a tap in the carburettor, and allows more or less gas to pass into the cylinder. In addition to the foot accelerator there is a hand regulator enabling the speed of the engine to be diminished at will, so that in future the characteristic "vrum-vrum" of the Panhard will denote the old type, and the new will have a steady "ron-ron" like its English cousin. The new design is being made at present in 10-h.p. and 15 h.p. cars, each with four cylinders, and weighing almost the same, that is to say between 12 and 14 cwt. for the *chassis* without body. The speed changes and reverse are all on one lever, so that the differential has only one angle pinion instead of two. The reverse motion is obtained by two pinions being inserted between the spur-wheels of the change-gear. M. René de Knyff is the owner of this first car of the new type, and he kindly handed me over to his cousin, who gave me the technical details. Lightness and economy are the claims made for the new type, and it is with this that Panhard and Levassor mean to compete for next year's racing supremacy, their endeavours being directed to get as high a horse-power as possible into the weight limit of one ton. A little later I had the good fortune to meet one of the Mors brothers at the stand of this well-known firm, and he kindly gave me some details of their new four-cylinder 8 h.p. and 15 h.p. types, which have four speeds and reverse controlled by one lever, and a combined exhaust governor and inlet speed moderator. The 15 h.p. engine gives 18 h.p. on the brake, and is 87 millimètres in cylinder diameter, with a stroke of 128 millimètres. The 8 h.p. *chassis* will weigh only 10 cwt., and the 15 h.p. not quite 14 cwt. A feature of great interest on

this stand is the 60 h.p. motor for M. Deutsch's balloon; it weighs only 11 lb. per h.p., has four cylinders of 130 mm. by 190 mm., and runs at a speed of 800 revolutions.

Peugeot's exhibit shows a complete transformation, and is represented by four different models, viz., a single-cylinder of 5 h.p., with two forward speeds and reverse, weighing $6\frac{1}{2}$ cwt.; a single cylinder, with $6\frac{1}{2}$ h.p. motor, three speeds and reverse, weighing 8 cwt.; a two-cylinder 8 h.p. car, with three speeds and reverse, weighing 13 cwt. (Fig. 1); and a four-cylinder 10 h.p. car, with four speeds and reverse, weighing nearly 17 cwt. All the above weights are with bodies. In all these cars the engine is in front. The two larger types have chains and the two smaller types have universal joints.

De Dion and Bouton exhibit a *chassis* of their 1902 type of *voiturette*, with a single-cylinder motor, the cylinder being 90 millimètres in diameter by 100 millimètres stroke. There are two forward speeds and one reverse, all controlled from the one handle. The steering gear is inclined and the frame is made entirely of tubes. The curved hollow back axle is maintained as in the old type, but the motor is, of course, placed in front.

will, of course, fill with water, as it is in communication with the supply pipe. Thus a quart or more of water will be stored up under the piston, and if the pressure rises higher and opens the blow-off valve, the compressed air will expand and fill the boiler again. It is a kind of automatic accumulator and does away entirely with the hand pump. M. Serpollet has brought out a new type of 12 h.p. car which weighs no more than the 6 h.p., and he now makes his boiler tubes of nickel steel, which entirely prevents all oxidation.

AUTOMAN.

(To be continued.)

IN giving evidence against the driver of a motor-car at Chertsey, recently, the police officer who prosecuted said he took the time after a constable at the top of the slope had saluted the motorists, to throw them off their guard.

THE use of calcium chloride is suggested to prevent the circulation water in petrol cars from freezing in frosty weather. Five pounds of the chloride should be used to every gallon of water the tank will hold, and can be dissolved in the water before

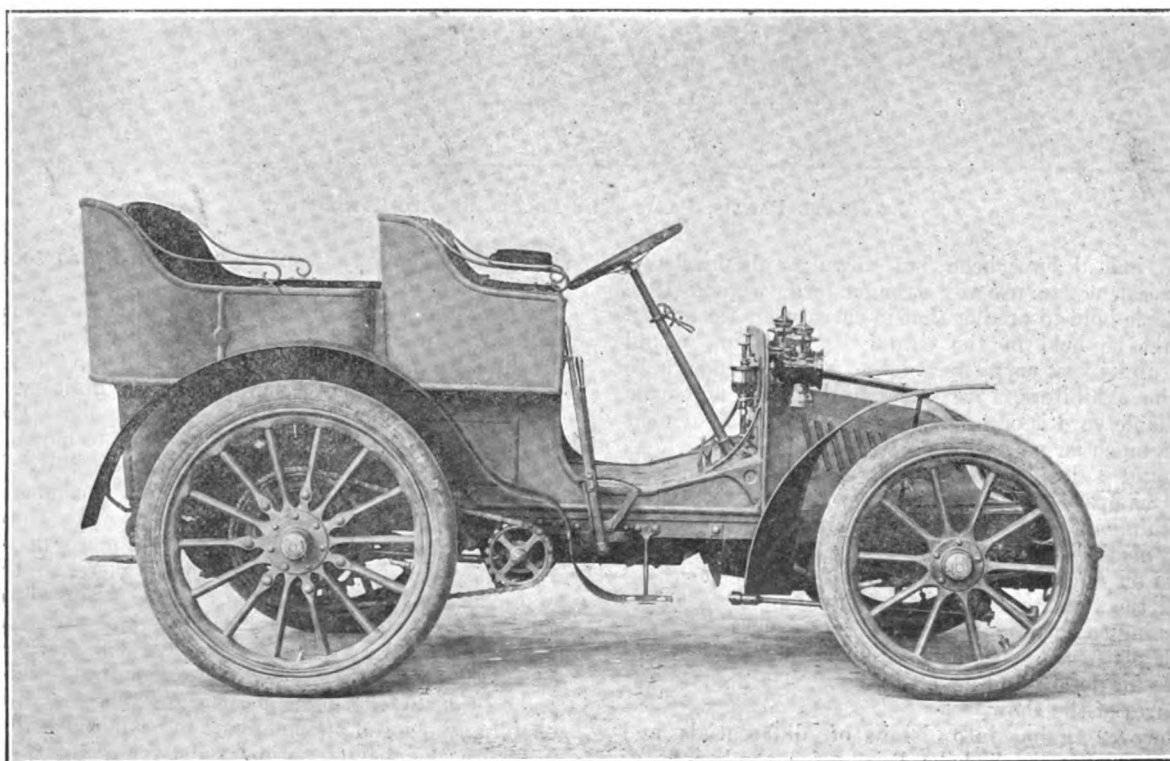


Fig. 1.—THE 8 H.P. 2-CYLINDER PEUGEOT TONNEAU CAR (1902 MODEL).

[La France Automobile.]

M. Serpollet gave me a long explanation of the improvements he has brought out. They deserve a special mention, and consist in an invention which entirely does away with the hand-pump. Those readers of the *Journal* who are conversant with the Gardner-Serpollet steam-car will remember that occasionally and not infrequently the driver has to work a hand-lever backwards and forwards in order to pump water into the boiler. The reason is that when the pressure in the boiler reaches a certain height a safety-valve opens, and out goes water and steam. M. Serpollet has found an ingenious manner of getting over this difficulty. He fixes on the water-supply pipe, and in direct connection with the boiler, a cylinder closed at one end, and with a free piston in it. Above the piston the cylinder is filled with air at a pressure of, say, 300 lbs. to the square inch. When the pressure in the boiler rises beyond this height the free piston, of course, rises in the cylinder and compresses the air above it. Suppose, then, that the steam pressure rises to, say, 600 lbs., then the free piston will travel half-way up the cylinder, and compress the air to an equal pressure of 600 lbs., and the lower part of the cylinder below the piston

is poured into the tank. The evaporation of water does not affect the calcium chloride, and when refilling the tank pure water is used.

THE motor-car is rapidly becoming a familiar sight in Glamorganshire. During the summer visitors to Southerndown were frequently aroused from their contemplation of the beauties of nature by the "toot-toot" of the automobile, and now Margam Park echoes with the familiar sound, proceeding this time from the motor-car owned by Mr. Andrew Fletcher, which is an object of much interest to the rural population.

THINGS have changed considerably for the motorist during the past six years, as Mr. J. H. Knight, of Farnham, remarked in a lecture delivered at Alton recently. Mr. Knight gave some very instructive and practical information concerning motor-cars and automobiles, and in conclusion suggested that the would-be motor-car owners should purchase British-built cars in preference to those of foreign manufacture, for there was often a difficulty in procuring spare parts from abroad to replace any that broke down.

CONTINENTAL NOTES.

BY "AUTOMAN."

A CHARACTERISTIC banquet took place at the Hotel Continental, Paris, last Saturday week, when M. Buchet, to celebrate the victory which his motor has achieved, invited his staff to meet him. It was not a dinner given to the upper ten, redounding with the names of titled people; but it was much more practical, and included such record holders as Truffaut and Rigal, and many other humble contributors to the success of automobilism. M. Santos-Dumont was to have been there, but he was unfortunately prevented, and sent a letter and telegram speaking in most eulogistic terms of M. Buchet and his motor; and the evening passed off in a most successful manner.

FRANCE sets a good example to the world of automobilism as far as exhibitions are concerned. There there is perfect unanimity, no squabbling, and, supported and encouraged by everyone, the show has an immense advantage and adds facilities to the trade which cannot be minimised in importance. Belgium, on the other hand, which is the "happy hunting ground" of the exhibition promoter, is in a sad plight. There are to be two exhibitions in Brussels, run by factions of the trade who are opposing each other, and the result is bound to be a loss to both exhibitions. In Antwerp the same thing is going to happen, and how manufacturers can be so short-sighted as not to come to an agreement and hold one single exhibition I am at a loss to comprehend.

TALKING of the Paris Show, it must be very important, for it is even bringing back Fournier from America, and it is rumoured he will be accompanied by Messrs. Vanderbilt and Foxhall Keene.

"LA LOCOMOTION," a new automobile journal, edited by M. Gaston Sencier, proposes to organise a race in which the idea would be to carry important documents concerning the national safety, to various parts of France, the demonstration to be an object lesson for times of peace or times of war. It is proposed to ask the Government and the Minister of War to give their assistance to it.

THE Nice races are not to be sanctioned by the Government. It is just possible that the mile race and the hill-climbing test from Nice to La Turbie will be allowed, but that is all. It is a great blow to the automobile world, as great preparations were being made by some of the famous makers.

THE first important step with regard to the necessary Governmental authority for the Paris-Vienna race has scored a success for automobilism, for at the Government House in Vienna, the Count Kielmannsegg, the Governor of Southern Austria, presiding, the Austrian Automobile Club made application, and after some discussion, in which the Government expressed themselves, in principle, against road racing, consent was given on account of the important International questions at stake, and in view of the fact that it would bring an enormous number of foreigners into Austria. At the same time news comes that there is already an Austrian motor-car which weighs less than the 1,000 kilos. limit, and which is said to be able to attain very great speeds.

WHILE on the question of this great International race, I would like to emphasise the opinion which I have so often expressed in these columns, with regard to the important advance and improvements in construction of motor-cars, which has been the direct result of road racing, and urge English manufacturers and enthusiasts to examine carefully the events of the past few years so that they may be led to see the importance of finding a way to get our English manufacturers to compete in next year's race.

THE Panhard type, both the 7 h.p. and the 12 h.p., are good examples of the progress made, due to experience gained in

races. The success of the little Darracq in the race field has caused shoals of similar cars to be put on the market. The Germans, in order to compete, have brought out the Mercedes, with its excellent radiator and with the many improvements in the engine, and now that the weight limit has become official, both Mors and Panhard are making immense efforts to reduce the loss between the engine and the road wheels, and all for the purpose of road racing, but with the ultimate result of improving the type. Unfortunately, England does nothing but copy what improvements have been made by others, and this simply because she does not compete in road racing. The day that it is made worth while for British manufacturers to compete abroad, then improvements will come from England, and we shall cease to be a copyist of our neighbours. I feel sure that if the inducement of a large money prize were put forward by some wealthy enthusiast there is still time for English makers to come into the racing field.

RIGAL, riding on Saturday at Achères, broke the world's mile and kilometre records, covering the mile in 53.35 sec. and the kilometre in 33 sec. Rigal, on his tricycle, with a two-cylinder, 12 h.p. Buchet motor, began by trying to better Fournier's record for the mile with a flying start—51.45 sec.—established in America. He failed in this attempt, though achieving by far the best time over the distance ever accomplished on a motor-tricycle—namely, 53.35 sec. A portion of the macadam was in a bad condition owing to rain. Afterwards, Rigal made another attempt, and established a new record for the kilometre, covering this distance in 33 sec., or at the rate of 67½ miles an hour. Over the same course, Collins, on a Boyer light car, made a record, covering the kilometre in 39.45 sec, or at the rate of 92 kilometres per hour. Truffaut, the same day, beat the mile record for light vehicles, doing the mile in 1 min. 7 sec.

WHEN did the coil tremble?—When the firing commenced.

TO the end of October last one hundred and sixty motor-cycles, valued at £3,316, had this year been exported from Belgium. During the same period 42 machines, valued at £1,150, were imported into Belgium.

FOR the last half century Welshpool and Llanfair have been brought in touch with each other by two well-known daily coaches. This week a motor-wagonette has appeared and does the journey twice daily, the single run taking about three quarters of an hour.

AMONG the members of the medical profession who have lately adopted motor vehicles are Dr. Carney, of Stratford, Essex, and Dr. Allison, of Liverpool. Their choice has fallen on Messrs. Shippey Bros.' "Milwaukee" steam cars, Dr. Allison's vehicle being fitted with Clarkson's arrangement for using ordinary petroleum as fuel.

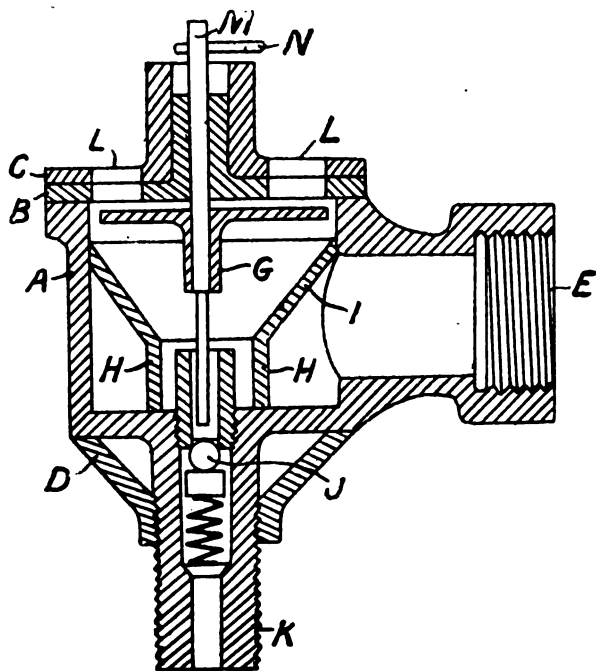
MR. HUGH OWEN, of the Automobile Transport Company, 72, Comeragh Road, London, W., informs us that they are now prepared to book orders for Twentieth Century cars, with engines of 9, 12, 16, or 24 h.p., for delivery early in the new year.

A PARTY of members of the Touring Club of France, while automobiling in the forest of Saint Germain, picked up an old man who had succumbed to cold and hunger. He was restored to consciousness and taken by automobile to a restaurant at Maisons-Laffitte, where he was dismissed with a good meal and a small sum of money.

ONE thing that no one seems to have noticed about the motor-car is that its pace can be reduced much more quickly and easily than that of a vehicle driven by horse-power. The motor can be pulled up in a couple of seconds by merely a turn of the chauffeur's wrist; and this is a mild form of "pulling the horse up on its haunches," together with the horrid jerk on the poor animal's mouth. The motor has come to stay, and the dear horses will in a very few years be released from the slavery of the crowded streets. We may as well accept it and make the best of it in the attitude of the philosophic mind with regard to the inevitable.—*Truth*.

THE CALVERT SPRAY CARBURETTOR.

MR. G. CALVERT, of Woodville Road, Mildmay Road, London, N., who is devoting much attention to the construction of small motors for motor-cycles, has just introduced a new spray-type carburettor, a section through which is shown in the accompanying illustration. The carburettor consists of the main casting A, cover plate B, regulator plate C, plunger plate G, mixing cone I, and exhaust jacket D. The action is as follows:—The ball valve J, controlling the supply of the spirit, is normally kept firmly in place by a small spring. Upon air being drawn in through the inlets L L, it strikes upon the plunger plate G, which is fixed to the rod M, and, through M, depresses J, allowing a small quantity of spirit to enter the mixing cone I, where it is mixed with the air, and drawn through the holes H H and the pipe E to the explosion chamber. The cover plate C is made to turn on the pin in the centre B, so that it can open or cover the holes L L at will. A pin N is driven in to a hole in M, so that it just touches the top of the outer tube on C. A spiral is cut on the top of this tube, so that as the air inlets are closed by moving C, the spiral allows M to drop more, thus varying the mixture of spirit and air in inverse proportions. M G is prevented from turning by fixing a



small pin on inside of B, and allowing it to work freely through a hole in G. The exhaust cone D is tapped through the centre, and screwed on to K to make a faced joint with A, and forms a small annular chamber, through which a portion of the exhaust gases is made to pass to warm the spirit and assist carburation in cold weather. The carburettor is made in sizes for engines up to 2½ h.p., the main feature, as above described, being that the amount of spirit allowed to pass is controlled automatically by the regulation of the air inlet.

MESSRS. EALES AND COMPANY, Queen Street, Coventry, have taken up the manufacture of belt driving rims for motor bicycles.

WE learn that Mr. A. E. Major, has taken larger premises at 60 and 62, Oxford Street, Reading, where he has extensive workshops with lift, charging station, wash-down department with hose, etc. Repairs to all types of cars can be undertaken.

THE "Wheel World," Paris Street, Exeter, are catering for motorists in the West of England; they lay themselves open for repairs of all descriptions by experienced men. A supply of petrol is kept on hand, while facilities are available for the charging of ignition batteries.

FLOTSAM AND JETSAM.

BY "FLANEUR."

AT one time it really seemed as though the vigorous efforts of the Automobile Club to convert the County Councils by the best of all means, namely, practical demonstrations, were destined to go unrewarded, so much aggression and persecution being manifest not long after the Sheen House gatherings themselves had taken place. The reward has come, however, in the drastic resolutions of the Executive Council of the County Councils Association. It only now remains for the Association to endorse the decision of its Council, to the effect that it is desirable that the statutory speed limit should be abolished, and little more will then be heard in the way of opposition from municipal bodies of appreciable importance, though no doubt individual malcontents will still exist.

WHAT one would like to know, however, is the identity of the actual parties who covertly wage warfare against automobilism through the agency of the police. Take Surrey as an example. Some people believe that the County Council eggs on the police in this matter of wholesale persecution. Others think that it is the magistrates—undoubtedly a very archaic body of individuals for the most part—who inspire the police to aggression. There are others who regard Chief Constable Sant as the archetype of persecution, while yet others believe that individual policemen, the village jacks-in-office, are the principal offenders. Lastly, it is conjectured that persons interested in the breeding of horses incite the police to misdirected action, either directly or by utilising county councillors or magistrates as a convenient channel.

Now, whatever be the causes of the rampant police persecution in Surrey generally, it certainly does seem specially desirable to know the why and the wherefore of the disgraceful aggressiveness displayed on the occasion of the Southsea Tour. The affair is done with, and it is now feasible to look at all the facts dispassionately. They are indeed extraordinary. The chief constables of the respective counties through which the cars were to pass were duly apprised of the approaching event. So far as Surrey was concerned, Captain Sant replied that he would do everything in his power to facilitate the progress of the cars while within his jurisdiction. And what happened? As the driver of one of the participating cars, I can only say that I saw more "policemanism" during the brief period that we were in Surrey than throughout the whole of the remainder of the route.

WHY that display of force at Bagshot? Why the deliberate traps, the "dirty trick" of signalling by means of an apparently courteous salute, and on a tour, moreover, which was in the nature of a public demonstration, with drivers slowing down their cars within the strict limits prescribed by the organisers of the run? And, above all, why were two mounted patrols, recognised as members of the Surrey force, placed at opposite ends of the straight stretch over Hartford Bridge Flats, which are in Hampshire? The whole business is discreditable, and one is bound to enquire how Captain Sant can reconcile this depletion of the villages of their police protection, for the sake of harassing harmless tourists elsewhere, with his promise to facilitate the passing of the cars. Either a breach of faith was perpetrated, or the policemen who were aggressive were acting on their own initiative, and in that case it would be desirable to know whether they have been reprimanded by their superior officer, or whether the Chief Constable is at the mercy of his own men.

Is there no friend of automobilism on the Surrey County Council who will raise the whole question of police administration in the county? Why should Surrey be so unsafe for the driver of even a slow car when the adjoining counties of Middlesex and Hampshire are not intolerant? Policemanism in Surrey is a by-word over the whole country. Cyclists have been persecuted for two decades in that county to a degree quite unknown in other parts of the kingdom. There is something radically wrong somewhere, and some system, or some individuals,

must be at fault. The question is, how is the responsibility to be located?

THERE is another matter which clearly shows how the detestable spirit of persecution prevails in Surrey to an extent unknown elsewhere. It is the only county in which motor-cyclists are fined for drawing trailers at a greater speed than six miles an hour. There has been one other prosecution of the kind, in the West of England if I recollect aright, but the magistrates took the common sense view that light passenger trailers were never contemplated by the Act. How could they be, when they were not even invented? Yet the Surrey police, in the Chertsey district, at all events, go on summoning luckless motor-cyclists for this terrible offence, and the Chertsey bench impose heavy fines on persons who are doing no manner of harm whatever. As a matter of fact it would be much more sensible to fine a man for *not* exceeding a pace of six miles an hour. Anything which never travels above that speed is a public nuisance, and causes congestion at every yard of its journey if passing through a town.

It is pleasant reading, by the way, to find that the Automobile Club is now definitely pledged to the attempt to have the existing law and regulations revised where motor-vehicles are concerned. The Club has done well to bide its time and let sensible people see for themselves that motor-cars are inoffensive vehicles, and that automobilists as a body are not to be classed with criminals. But patience has pretty well attained its limit by now, and automobilists all the country over should back up the club and strain every nerve to secure the sweeping away of that senseless blot on the statute book, the twelve miles an hour limit. Even in 1896 it was ridiculous, and Parliament itself allowed fourteen, but weakly signed away its rights to the unprogressive Local Government Board, who reduced the limit to twelve before ever the cars had been tried. And if ridiculous at that period, when the permissible maximum almost equalled the capacity of the cars if unfettered, what is it now, when every car that is fit to use is capable of much higher speed?

CAN nothing be done to stimulate those automobilists who leave others to carry on the work of propagandism, and make no efforts themselves even on their own behalf, much less for the sake of their brother *chauffeurs*? One can understand why there should be many owners of motor-vehicles who do not join the Automobile Club, because the subscription includes the use of a club-house as well as membership of a protective association, or *société d'encouragement*. But those who do not need, or have no opportunity of using the club house, might, and ought to, ally themselves to the Motor Union for the sake of the common good. Yet there was quite a large percentage of cars entered for the Southsea run opposite the names of which, on the published list, there was no prefix indicating membership of either the Union or the Club. And what of the non-participants in the tour? The total membership of the Automobile Club and the Motor Union combined cannot represent anything like the number of automobilists in this country, and, considering the things we have yet to fight for, the fact is much to be regretted.

THE *Sketch* Christmas number has a very foolish page of illustrations, in which a motor-car is seen to be blown to atoms as an amorous swain is on the point of proposing to his Araminta. Could not the artist, instead of seeking to perpetuate this very stale idea as to the exploding tendencies of motor-cars, have seized on something humorous which a motor-car, with a little exaggeration thrown in, might be expected to do at certain times? It is pleasant to turn from this to a full-page drawing in the Christmas number of the *Sphere*, where an up-to-date phantasy is presented of Father Christmas in an automobile, very passably drawn, and containing the usual merry crew of clown, pantaloon, harlequin and columbine, with a policeman in full chase.

MR. JOHN MARSTON, of Wolverhampton, records, in the *Road*, an incident where a motor-car raced the telegraph.

CORRESPONDENCE.

THE AUTOMOBILE CLUB'S NEW PREMISES.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—In common with not a few of my fellow members of the Automobile Club, I feel that the committee would have an easier task in finding a scheme for a new club house, which would be feasible and acceptable to the general body of members, if they did not endeavour to embody in their proposals three functions which would be in conflict with each other, and two of which would undoubtedly be in violation of the very constitution of the club. They seek first, and very properly, to continue the invaluable policy of protecting the rights of automobilists and fostering what is destined to become a great national industry while carrying on the vigorous propaganda which has hitherto distinguished the club's career.

Secondly, they aim at establishing an ambitious and costly high class social club, and lastly they propose to attach to the club, as in the Regent Street scheme, an extensive *garage* or storehouse, the rental of which alone is understood to be £1,000 a year, and which, if it is to escape financial failure, must be not merely a temporary storehouse for cars belonging to members using the club house, but must embrace all the ramifications of the sale and exchange of members' cars, dealing in petrol, lubricants, accessories, repairs, and what not, thus constituting a commercial venture utterly foreign to the aims and scope of a club.

It is undoubtedly true that the club, owing mainly if not entirely to its usefulness, and not to its social advantages, has attracted and is more and more attracting members of the highest social status, but it also numbers, especially amongst its earlier members, gentlemen who were pioneers or commercially interested in automobilism, but who are not of the same social standard as the more recent members. It is notorious that the great bulk of the socially superior members never make use of the club as a social club, having already their own clubs, thus showing that they have joined not for any social advantages, but in recognition and support of the club's useful propaganda.

It is manifest that the increased subscription which a first-class social club would necessitate would tend to eliminate the less prominent membership, but it is very doubtful whether such a club, apart from propaganda, would appeal to gentlemen of high standing, whilst the process of elimination would engender the same bad blood as has recently been seen in the case of the French club. Finally, for the club to conduct a large *garage* on commercial lines would be to initiate an unfair and injurious competition with those legitimate traders for whom the club has hitherto fought a good fight without any suspicion of monetary gain to itself.

The wisest course will be to continue the club on its present lines, without increasing the subscriptions of existing members; to move the club house to more commodious but not pretentious or very costly premises, with free storage accommodation for members using the club, thus enabling the surplus funds of the club, which will quickly double and treble, to be devoted to safeguarding the rights and privileges of automobilists generally, and helping to build up a national industry of the greatest importance. And as for a large commercial *garage*, we may be sure that London will require in the near future not one, but a dozen such storehouses, and let it not be forgotten that members having their business or residence in the City, Kensington, Westminster, Hampstead, or Bayswater would find little use for a *garage* attached to a club in Regent Street.

No, let the club leave such a commercial venture to capitalists, who may be trusted at the right moment to see the great financial possibilities of *garages* conducted on sound commercial lines, and who will not be slow to recognise the advantage of securing for their *garages*, wherever situated, the patronage and co-operation of the club in return for privileges given exclusively to its members, who will thus secure not only the advantage of the storehouse attached to the club, but also of whichever of the district *garages* is likely to be of greatest convenience to them.—Yours truly,

A MEMBER.

MOTOR-BICYCLES FOR 1902.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Kindly allow me to complete that amusing but somewhat misleading story of the Locomobile, the milk-can, and the Werner, as told by Mr. Teschemaker in your issue of November 30 last, I happened to be within six yards of the spot whence emanated an explosion which rang through the Agricultural Hall. I am glad to say that the lightly spoken of aeronautical trip of Mr. Tessier did not hurt him much. As he rounded the sharp curve at the end of the arena at a high speed, the Clincher tire on his machine blew off, hence his fall and the explosion of the inner tube. The damage to silencer and combustion-chamber, etc., was due to Mr. Tessier's knee coming in violent contact with them as he came off his machine. I must further beg Mr. Teschemaker's pardon if I flatly contradict some of his other statements. One is of last December, and I must remind him that it is the second time he has misquoted me. It is late to correct him, but I did not consider it sufficiently important at the time. He says in a letter in the *Journal*: "Mr. Bennett now tells us he does not know in respect of what it (the Werner) beat the tricycles." I will merely quote my own words to which he referred (*vide Motor-Car Journal*, December 15th, 1900): "If the Werner machine beat tricycles at the exhibition official trials at Vincennes this year, it was for many reasons, for speed was but one of the many points under consideration."

I must next demolish the story of Werner 1901's death. I will quote M. Eugène Werner's own words to me last July. "I am going to design another model with the motor in the frame. This will be the popular design, for I make it for those people who persistently clamour for a low centre of gravity, regardless of the fact that it can be mathematically demonstrated that this is less stable, but I shall still continue to make the present type." As a matter of fact, he has now just laid down one hundred such machines, so Mr. Teschemaker jumps at too hasty a conclusion when he says the makers are not satisfied with their machine, even if Mr. Bennett is. I will not repeat that I am very satisfied, for I have never expected miracles, and I have always been astonished at the results I have obtained. My training as an engineer teaches me to appreciate both the very serious difficulties which have presented themselves and the manner in which they have been overcome by M. Werner. And so it is that Werner 1901, with slight modifications, will reign conjointly with Werner 1902. I, personally, admitting the truer principles of fore-wheel driving and high gravity centre, am inclined to favour 1902, because I can get in a larger silencer and a flat belt.

The old carburettor has nothing wonderful about it; Mr. Teschemaker is the only person I ever heard bestow that adjective on it. It has its advantages and disadvantages, but it certainly is the simplest for a novice to manage, and was designed to that end. I will cry "peccavi" *re* the lubrication of the Werner engine. I did not consider it requisite to distinguish between the presence or absence of the recess in the top of the crank-chamber in comparing it with the De Dion, because the recess is not necessary, as the working of the Werner piston shows, but I challenge Mr. Teschemaker to prove that the Werner lubrication is inefficient, or inferior to De Dion's, when the maker's instructions are correctly followed. No one has ever complained of this, that I ever heard of. Mr. Teschemaker's graphic picture of "much oil, much splash" and "little oil, little splash," etc., is surely so obviously applicable to any splash system of lubrication that it is scarcely necessary, it seems to me. I must also deny that the Werner piston dips into the crank-chamber, because it certainly does not, the fly-wheels fill that and thus render it impossible. I can assure Mr. Teschemaker that the steady trickle of oil on the trembler may exist in some engines, but it certainly doesn't in either of the machines I have had. My present one used to let a little escape by the valve-lifter, but that ceased so soon as I discovered I was keeping the oil-level too high in the crank chamber. I should like him to see how clean it is after a 50 mile run. The average tricycle engine, I have remarked, is smothered in oil, possibly because it is so rarely wiped.

The down-hill coast on a safety at 25 and 50 miles an hour is no parallel case. The tires are a very important item. I will

mention the exclamation of the last novice I put on my bicycle when he had had a mile or so at about 18 per hour: "How much less bumpy this is than my safety; what a difference the tires make." They were 2 in. Dunlops, whilst his were 1½ in. I am not aware that collisions with carts, etc., are a necessary part of the programme, whatever Mr. Teschemaker may think on the subject. In 10,000 miles I have covered I have never met with one. I will frankly admit that 215 mile rides are too long for me personally, but I am not of the tireless ones, and am quite content with an average of 18-20 miles, but everyone to his taste. By far the most disagreeable feature of a ride in this country is the inane, stupid, and futile hostility shown to the automobile by the mass of the people, high and low, uneducated and educated; the latter are the most to blame considering their lights. Inane, stupid, and futile because they are seeking to oppose an irresistible force. I do not care to say all I think on the subject, but it augurs very ill for our future as a nation, this lack of adaptability to changed times.

Please excuse a few more words. Hints to correspondents *re* wear of tires: Don't blow up your front tire more than necessary; let it "*avoir l'obstacle*," as Michelin puts it; less vibration and less bouncing, hence less racing and wear in consequence. Use no more of your engine power than necessary, and get the speed by your advance lever; less noise and less wear again. I find a band at 3s. 6d. will last about 1,000 miles, and the original tire remains intact.—Yours faithfully,

A. L. BENETT.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Mr. Teschemaker's letter really is very unfair, and calculated to do a lot of harm to a growing industry. It seems to me that this gentleman is quoting from an experience of one particular cycle, so why he should condemn them as a whole passes my comprehension. As he remarks, nearly everybody contemplating motoring (on cycles) buys a "Werner." Sometimes their experiences are satisfactory, but more often not; the reason is not far to seek. First, the design is altogether wrong. Secondly, the workmanship or finish leaves much to be desired, but if the finish were on a par with a Maxim gun it would not be satisfactory, owing, as I said before, to defective design. I am of course alluding to the old "Werner," not the 1902 model. I cannot agree with your correspondent either upon the course he recommends to intending motor-cyclists, as the vibration upon an ordinary safety and a motor-cycle are not the same. I confess I have ridden some machines which nearly shake the arms out of the sockets, but this was in all cases due to imperfect design, and if the public would refuse such machines they would soon be taken off the market. Then again you "add 25 per cent. for shocks due to collisions with carts, &c." This on the face of it is ridiculous, as who but the greatest muff would ride at all if he could not ride without such accidents. I am at present completing a design for a motor-cycle, not a motor and cycle, for which I claim perfect comfort, steering, control, and freedom from side slip, no vibration at all on the wrists and arms, and no more than on a safety bicycle from the saddle, if as much. I should be very glad indeed to build one for Mr. Teschemaker if I succeed in introducing it upon the market, for which purpose I am at present seeking capital.

Yours truly,

C. H. LAMB.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Having read several interesting letters *re* motor-bicycles, it has occurred to me that my experiences might be helpful to the novice. I have ridden my trusty Werner since September 1900, and have covered about 4,000 miles on it, and I must confess that it appears to be in as good condition now as when I bought it. I notice several of your correspondents are going through the same troubles that I had, and no doubt it is only experience that will enable one to get the best results out of a motor-bike. For instance, wearing out of front tire, and vibration to handles, can both be cured by running with a loose strap, prepared with Colan or castor oil; it must be remembered that in any machinery a new strap is a great trouble. I find the

lubrication perfect; I oil up about every 20 miles, and find that the engine keeps in good working order. I have not found oil flying out and streaming down trembler; in fact I generally oil the cam, or else it squeaks. I have an E.I.C. plug, and have had no ignition trouble since fitting it. I certainly find room for improvement in the band brake, but I must give Werner *frères* their due, and admit that the workmanship of cycle and motor leaves very little to be desired as far as mine is concerned. No doubt the front position of the motor accounts for it keeping so cool when making long journeys, and I cannot help thinking that Werners are putting the engine down low this year, for fashion's sake only, and against their better judgment. I think if some of your correspondents had spent their time in studying the motor and its requirements, instead of flying into print with evidently only a day or two's experience, it would have been better for them. As regards side slips, I was riding with a Minerva recently, and found the rider contemplated giving it up for a Werner, as he found from practice that the Werner did not slip so much.—Yours faithfully, SIDNEY SILVERTHORNE.

MOTOR-CARS FOR THE TROPICS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—If it be as stated in your issue of the 16th ult., viz., that a petrol-fired car cannot be used in a temperature of 90deg. in the shade, it would seem that motoring is a pleasure to be denied the unfortunate whose lot it is to live in the tropics. Perhaps the paragraph refers only to steam cars fired by petrol, or does the same objection apply to the more commonly used petroleum-spirit cars? I have seen no contradiction of it from any makers of the latter style of car, which would lead one to suppose that the facts are as stated in your paragraph. Thus it would appear that all cars are "barred" for tropical use except steam cars fitted with the Clarkson burner, and possibly the new Carlton motor, which, according to the advertisements, runs as well on kerosene oil as on petroleum spirit.

The point raised is, I think, one that would be of interest to men who, like myself, live in temperatures of 80 to 90 in the shade, and who may be meditating the purchase of a car other than an electric one. I have inquired of one or two firms what the flash point of petrol really is, but have had no reply. Perhaps you could enlighten me on the point. I apologise for troubling you on what may be a very elementary point in motoring. But other novices than myself may be at sea in the matter, and it would be as well for the "trade" to clear it up satisfactorily.—Yours truly, P. FOWLIE.

A QUERY RE STEAM CARS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—In answer to "Naval Engineer," I may inform him that a steam-car condenser cannot get hot in the sense that a marine condenser does, for the simple reason that the circulating water can never fail, its place being taken by the current of cold air made by the car itself.

A steam-car condenser is simply an ordinary marine condenser with the casing removed and the steam passing through the tubes. Of course, the cooling surface is much in excess of that which would be used in a marine engine of equal power, but as the condenser is not called upon to produce a vacuum, the tubes are made very light and thin. Naturally the condenser is not so effective in hot weather, but then the slight escape of steam is invisible, and so does not matter.—Yours truly, CONDENSER.

MOTORS AT THE EXHIBITION.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—May I be allowed to ask through the medium of your valuable journal whether at your next Show at the Agricultural Hall it is or may be arranged for the engines and machinery to be seen in motion, working on stationary platforms or stands without the car bodies? It would, I think, give a better opportunity for the public to form an opinion upon the different systems adopted, and upon the simplicity or complexity of the

mechanism, its apparent strength, durability, and ease or other wise of manipulation, much better than drives round the arena.

I should also like to ask as to when it is likely that some of the zeal and energy now given to the attainment of high speeds, to use which is prohibited by law—will be devoted to the production of a slower but comfortable and shapely common-sense covered carriage—not a weird-looking horseless brougham—suitable for taking a family home from the opera on rough nights; for, surely, this should be a special mission and strong recommendation to mechanical carriages in saving both men and horses late at night.—Yours truly, AGOG.

THE SMART SURREY POLICE.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Mr. L. W. Fuller is not the only victim to the "Smart Surrey Police." I know several, and have been stopped myself for steam escaping from the tank, through defective pump. It taxed the combined intelligence of the six constables in ambush over the hedge, and required an appeal to the inspector (who did not appear to have been recruited from the gamekeeper class), and his decision that it was not a steam driven car, and that the escape was from a temporary cause, before we were allowed to go on. It is not, however, the fault of the police: they are a fairly decent body of men, but their instructions, issued by a bigoted clique, who hold the reins of power, and the special attendance fees in motor cases make them very keen on motorists. My opinion, formed at Reigate Court, was that the sooner the old feudal system of allowing a man, whose qualification for the post was his banking account, to dispense justice was altered, the better for this sleepy old country. I had to listen recently to two cases at Reigate, both supported by witnesses called by the *R.S.P.C.A.* The first was a disgusting case of cruelty by a youth of fifteen on a donkey, he was awarded six strokes with the birch; the second, a hulking labourer was charged with cruelty to a puppy of four months old; the worthy magistrate's question as to whether it was killed was not answered, but the man was fined 5s. for his cruelty. Lunch next, then motor cases, those who pleaded guilty to exceeding twelve miles per hour down the half-mile hill of clear, deserted road view, £1 and costs; all those who dared to dispute the evidence of the constables, and (like Mr. Peall) swore they did not believe their speed was over twelve miles, £2 or £3 and costs. Motorists are not safe from persecution in the county of Surrey, between the Star at Horley and Crawley Station.—Yours truly, F. W. G.

MR. W. O. DEWEY writes:—"With regard to your correspondent's query *re* ignition troubles, I would recommend him to try the Narbonne ignition, which I am sure would entirely get rid of his sparking troubles."

MR. F. W. BISHOP writes:—"It may be interesting to the readers of your valuable *Journal* to learn my experience of the Wellington sparking plug. I have used one of these continually for over two years. I have travelled about 3,500 miles, and in September last I rode 700 miles in eight days, and have only used this one plug."

THE Mayor of Nice has been expressly informed that the Government has decided to refuse permission for the motor-car racing tournament which was to have taken place in April.

A CAPTAIN, two junior officers, thirty-four non-commissioned officers, and several men left Berlin lately for Cannstatt to take over nine motor-cars purchased by the German Government for army purposes. The cars will be driven from Cannstatt via Heilbronn to the barracks in Berlin, to test their speed and capacity for the transport of ammunition and provisions.

AN automobile school is about to be started in Paris. A course of simple and practical instruction in the constitution and the "tricks and manners" of the automobile is to be placed within the reach of all young men wishing to choose the business of *mécanicien* as a career. The *Presse* announces that entries for a free course of instruction in automobilism may be registered at the Ecole Communale of the Rue Saint-Ferdinand, and that the classes are held every evening.

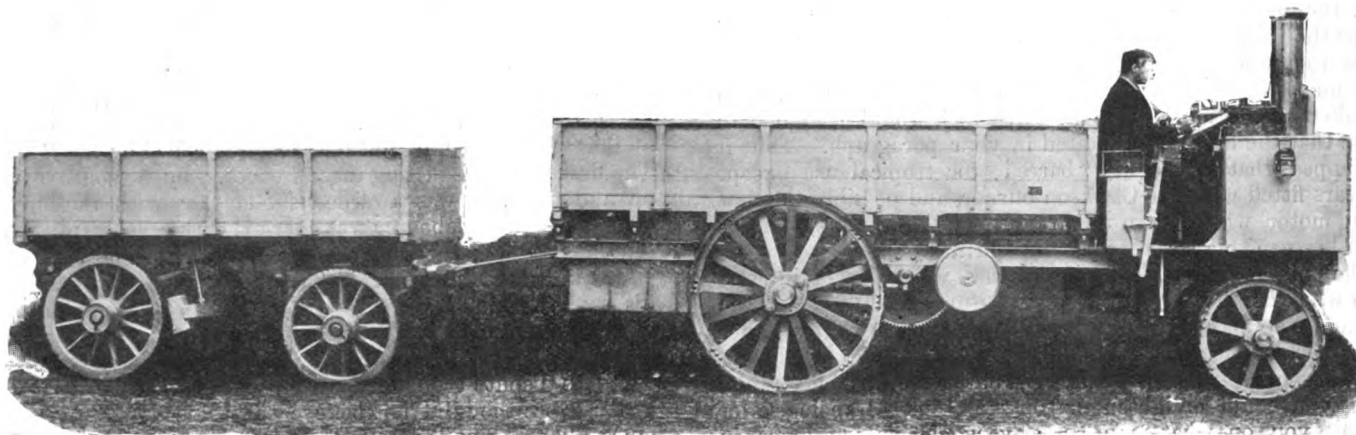
THE WAR OFFICE MOTOR LORRY TRIALS.

IN our last issue we described the Foden and Straker steam vehicles taking part in the War Office trials at Aldershot. We now give a few particulars of the three other competing vehicles—the Milnes and the two Thornycrofts.

The 5-ton war lorry entered by Messrs. George F. Milnes and Co., Limited, is 21ft. long by 6ft. 6in. wide; the wheel-base is 12ft. 9in.; floor space 13ft. 6in. by 6ft. The frame is constructed of U channel steel and will bear a total dead load up to 6 tons. The motor is a four-cylinder hydro-carbon engine, the diameter of piston being 90 millimetres and the stroke 120 millimetres. It is built on the Daimler principle throughout, with Daimler float-feed governor, and patent water-cooler of the marine condenser type. The number of revolutions per minute is 750, and the brake h.p. is 25. The water circulation is maintained by a gear-driven rotary pump. The oil is fed by pressure from a portion of the exhaust, ignition being by the Simms-Bosch magneto-electric system. The transmission is by a single friction cone on the Daimler principle. The power is transmitted from the main longitudinal shaft through the differential gear on the Cannstatt system by means of two pinions engaging two internal gear wheels fixed to the back road wheels. The speed-changing gear is on the Cannstatt system,

the standard military draw hook. The boiler is arranged so that the fire bars can be easily replaced by the liquid fuel burners, which are either of the spraying or vapourising type, according to the nature of the oil which may be available. A condenser is provided, but is arranged so that it can be short-circuited or removed without interfering with other parts of the machinery. The boiler is fed by a pump driven directly from the engine, or by an auxiliary pump or injector. An exhaust feed heater is also provided; the differential gear can be locked in the usual manner.

As early as eight o'clock on Thursday morning last week the lorries engaging in the trials had drawn up at the Royal Engineer depot, Aldershot. The members of the Mechanical Transport Committee were with one or two exceptions present, and appeared well satisfied with the prospects of the initial trial. In nearly each case the vehicles conveyed only the driver, brakesman on trailer, and the observing officer and his assistant, but an exception or two had been made of officers and others who had obtained a special permit from Captain Lloyd. The trial was started by the order being given to get up steam. The Thornycroft oil fuel wagon occupied twenty-five minutes, the Thornycroft coke fuel wagon thirty-five minutes, the Straker coke fuel wagon forty-five minutes, and the Foden lorry with coal fuel about an hour. The Milnes wagon having a combustion engine, of course did not require to raise steam. The vehicles were then started on their course at intervals of five



THE STRAKER STEAM LORRY AND TRAILER.

four speeds being provided. With this gear, the first and second, and third and fourth speeds are each controlled by one lever, by which means, as the two couples of speeds are independent of each other when changing, neither couple affects the other set of gear wheels. The Cannstatt principle for changing speeds also automatically disengages the friction cone when either speed lever is actuated. The reverse speed is obtained by dropping into gear a special cog wheel, giving a speed of four miles per hour. Two circumferential brakes, worked by worm gear from the driver's seat by hand, act on the hind wheels. There is also a double-acting brake-clutch on the first speed shaft, and a sprag on the back axle.

Vehicle No. 6, entered by the Thornycroft Steam Wagon Company, Ltd., is of the company's standard type, capable of carrying three tons and drawing a further two tons on a trailing vehicle. Vehicle No. 7, by the same company, is illustrated in another part of the present issue; it is specially adapted for use on rough roads and uneven ground, the steering axle being capable of an unusually large angle of tilt; and the driving and steering wheels, being of large diameter, the boiler and engine are situated directly over the driving axle, the carrying platform being provided at the fore part of the vehicle. This arrangement gives the wagon great power to get out of holes in soft ground, etc., and enables it to exert its full power as a tractor when it is not itself laden. The boiler and engine are of the same pattern as the standard wagon; it is fitted with three speeds, a winding drum, and one hundred yards of steel wire rope. A spring draw gear is provided, fitted with

minutes in the following order:—Foden, Milnes, Straker, Thornycroft No. 6, and Thornycroft No. 7; the first named being despatched at 8.30. The direction lay through Aldershot on to Hale and Odiham, through Blackwater, Camberley, Bagshot, Frimley, and back to Aldershot *via* Farnborough, a total distance of thirty miles. The first to arrive home was the Foden lorry, which was followed by the two Thornycroft wagons. The Straker wagon, which had been delayed on the road, arrived an hour and twenty-five minutes after the Foden lorry. The Milnes lorry came in about twenty-five minutes later. Between the first three cars there was but a few minutes difference in the time in which the run was accomplished, but the officials have, at the end, to report upon stoppages on the road, to which each individual machine was subjected. The exact times of the completion of the run are, therefore, not to be relied upon as vital. Of the remaining two machines, each of which covered the distance, allowance has to be made for accidents not inherent to their construction, but casualties such as might be expected at any time. Heated bearings owing to the failure of a lubricator caused a slight delay to the Straker vehicle; and the breaking of the coupling-rods between the Milnes lorry and its trailer, created still further delay on the part of this entry, as the load of two tons on the trailer had to be transferred to the main vehicle. Even this machine brought its full load into the depot within seven hours. About half a dozen motor-cars accompanied the lorries, conveying members of the Mechanical Transport Committee, members of the competing firms, and a number of interested motorists.

On Friday, the 6th inst., the five vehicles were despatched over the same thirty-mile course as on the previous day, but in the opposite direction. The Milnes wagon made a bad start, again breaking the connecting rod of the trailer when only one hundred yards had been traversed, and having, in consequence, to carry the whole of the five tons dead load on the wagon. Bad luck pursued the car throughout the day, and it reached home a long time behind the others. The Foden lorry was again most successful, completing the distance first, in 4½ hours, improving on Thursday's time by about an hour, due to the use of Welsh coal instead of coke. The Thornycroft coke-fired wagon also did well, but broke a small water-feed pipe and suffered a slight delay, its time being 5 hr. 21 min. The Straker steam wagon did better than on the previous day, but the high-pressure connecting-rod again got over-heated, so that 5 hr. 53 min. were taken up by the trip. A defect in the oil burners of the Thornycroft petroleum-fired steam wagon was the cause of a serious delay, the car arriving about an hour after the Straker.

Saturday last was taken up by an inspection of the vehicles by the Committee. On Monday the trials were continued in stormy weather. The five different types competing were subjected to a severe test over the thirty-two miles of road mapped out, the distance having to be covered in a little over six hours. The wagons were despatched between 8 and 9 a.m., the route being *via* Hale, Crondall, Ho, Warnborough, Alton, Farnham, and Aldershot. The Foden wagon was again first in, for the third time in succession, covering the distance quite easily. The Thornycroft coke fired wagon, No. 6, was second, and the Straker wagon a long way behind. The Milnes wagon was about forty minutes behind the Straker, and last came the Thornycroft experimental rear-driven wagon. This was constructed to burn petroleum, but on Monday fire bars were used and coal fuel tried, but the draught was not sufficient to take it along at any good average speed.

(To be continued.)

THE PANHARD AND LEVASSOR NEW "CENTAURE" MOTOR.

MESSRS. PANHARD AND LEVASSOR have lately adopted an improved form of petrol motor, which they have named the "Centaure." The improvements are mainly connected with the governor controlling the admission of explosive mixture, with the arrangement of mounting the valve

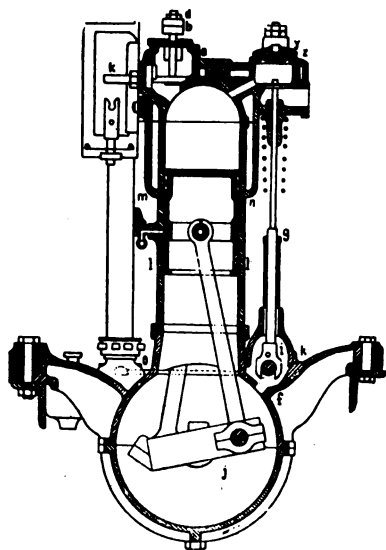
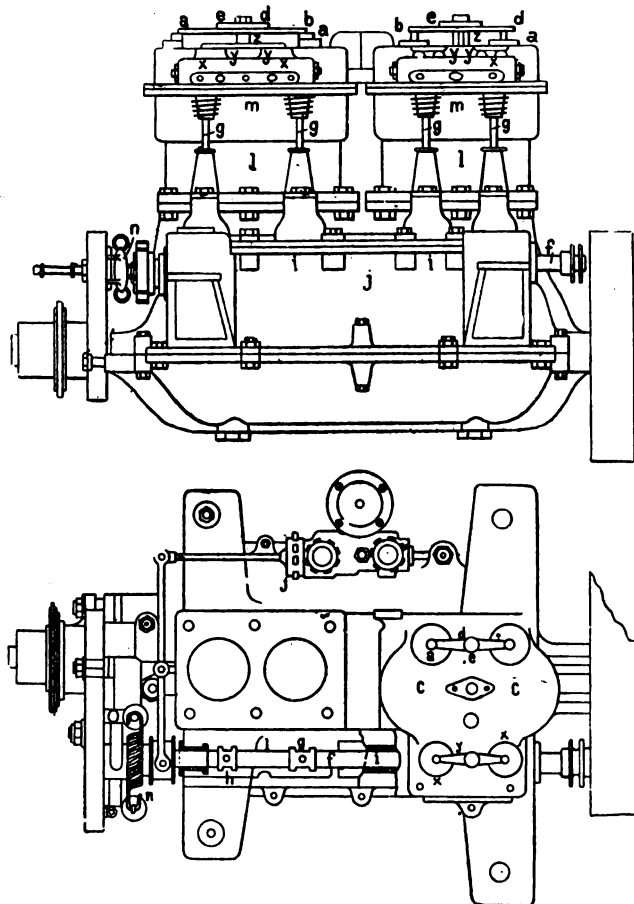


FIG. 1.—SECTION OF CENTAURE MOTOR.

chambers and the method of controlling the exhaust valves. Fig. 2 gives a front view of the four-cylinder 16 h.p. motor, Fig. 1 a transverse section through the axis of one of the cylinders, and Fig. 3 a partial plan. The regulating of the motor is effected

through the admission of the gaseous mixture, either by means of a cock with a single valve or through the control of the admission valves. The two admission valves of one group of two cylinders are arranged in boxes, *a*, upon which presses a crosspiece, *b*, through its extremities. This piece is secured to the explosion chamber, *c*, by a nut, *d*, and a bolt, *e*, so that the dismounting may be effected solely through the unscrewing of the nut. The arrangement of each suction valve is such that the part can be replaced by another, including an electro-magnet, into which a current is sent by the regulator. The magnetic suction valve dispenses with any other regulation of the admission of the gaseous mixture. The substitution of this new valve for the ordinary one can be effected without any modification of the explosion chamber. The plugs, *x*, of the exhaust valve boxes are held in a similar manner by crosspieces and nuts, *z*. The control of the exhaust



FIGS. 2 AND 3.—ELEVATION AND PLAN OF CENTAURE MOTOR.

valves is obtained through a cam-shaft, *f*, entirely enclosed in the casing, and acting upon simple rods, *g*, which lift the valves at every revolution of the shaft. Each of these rods is guided by a double fork, *h*, embracing the cam-shaft *f*. The cam-shaft is completely enclosed in a casing, *i*, open only to the crank-chamber of the motor. It is lubricated by the oil continually thrown by the connecting rod-heads, *b*. Provision is made so that the cam-shaft can be readily adjusted or dismantled. Fig. 1 represents a motor in which the ignition is effected through an incandescent tube; but it is pointed out that this motor has been especially studied from the point of view of electrical ignition. The cylinders are connected in pairs and provided with a water-jacket, *m*, at the upper part. The pistons are of cast-iron with cast-iron segments. The centrifugal governor, *n*, mounted upon the cam-shaft, acts directly upon the admission valve. It is capable also of electrically controlling the admission valves. In this case it displaces a simple key, which comes into contact with one, two, three, or four flexible strips of metal.

AN American contemporary states that the Prescott Automobile Manufacturing Company, of New York, has secured an order for 100 steam vehicles for shipment to London.

THROUGH SCOTLAND ON A DELAHAYE CAR.

ON Friday morning, September 13th, I left Nottingham with my mechanic on my new 6 h.p. Delahaye *tonneau* car for a tour in Scotland. The first stop we made was at Doncaster for lunch. A few miles out of Doncaster we had the misfortune to break an induction valve spring, which, at the same time, damaged the ignition plug. This put right, we made splendid time through Selby to York, where we stayed an hour for tea, and then went *via* Thirsk to Stockton-on-Tees (134 miles), where we stayed the night. Next morning we discovered a puncture, which, unfortunately, delayed us till eleven o'clock, when we started *via* Durham to Newcastle, where we stopped an hour for lunch, and then went on through Morpeth and Alnwick to Berwick (100 miles), where we passed the night. Sunday morning we had a splendid run through very pretty country, with the sea on our right, to Edinburgh (60 miles), having called for lunch at Dunbar. We stayed in Edinburgh till Tuesday afternoon, where, in the meantime, a friend—the Rev. W. A. Boyd—joined us, and we went *via* Linlithgow and Falkirk to Stirling. Next



AT THE FOOT OF BEN LEDI, OUTSIDE CALLANDER.

morning, much to our annoyance, we found another puncture; after repairing same, we ran on *via* Donne and Callander to the Trossachs Hotel. Here we stayed a couple of days, and then came back to Callander. Starting next morning for Oban *via* Lochearnhead, we had a long climb—about three miles—up Glenogle and on to Crianlarich and Tyndrum, thence over that well-known stretch of fearful road to Dalmally, then alongside Loch Awe, through the Pass of Brander, Taynilt and Connel Ferry, where our exhaust valve spring gave way, reaching Oban in time for dinner. We stayed in Oban a couple of days, and in the meantime, I went over to Connel to tell the man in charge of the ferry that I wished to take a motor-car across. He, however, refused to take it, so there was no alternative but to take the car on the Fort William boat as far as Onich, opposite Balachulish. We reached Onich about three in the afternoon, and started *via* Fort William, Spean Bridge (where we stopped an hour for tea), and alongside Loch Laggan to Newtonmore, reached at 8.30 (56 miles). There we struck the old Highland coaching road from Inverness to Perth, and next morning commenced a twenty mile climb through bleak

Highland country, *via* Dalwhinnie to Dalnaspival. A glorious run down followed, through Blair Athol, Pitlochry, the Pass of Killierankie, and Dunkeld, to Perth (70 miles), where we put up for the night.

Starting next morning, *via* Auchterader, Dunblane (where we broke another exhaust spring), and Bridge of Allan, we reached Stirling, and after lunch continued through uninteresting country to Lanark (60 miles). Next morning was hopelessly wet, and we did not take the road till 4 p.m. The weather continued wet, and we were glad to bring the short day's run to an end at Abington. It was still raining when we left for Carlisle next morning; reached late on account of trouble with valves and electric ignition. After a late lunch at Carlisle we pushed on to Penrith, where we brought our seventy-mile day's run to an end. With the thought of Shap Fell before us, we made an early start next morning. The Fell, however, presented no insurmountable difficulties, and the summit once attained, we ran down hill all the way to Kendal and lunch. On again through Kirby Lonsdale, Skipton, and Settle (where another exhaust spring broke), to Bradford (92 miles). Next morning opened with a four-mile climb out of Bradford, followed by a good run through Wakefield to Doncaster, where we had lunch, and then went home, *via* Worksop and Mansfield, arriving in good time for dinner (74 miles).

The total distance we covered was 875 miles in seventeen days, out of which we were resting six and a half. Considering that my car is fitted with only a 6 h.p. single-cylinder motor and the rough, hilly country we had to contend with in some parts, I think that it did the work marvellously well. Of course, I did not start with the idea of getting over the ground as quickly as possible, but to enjoy myself; and I did enjoy the tour immensely. I would just like to add that when leaving home I did not anticipate getting much further north than Edinburgh; but I was fortunate in picking up a copy of the Con-tour Road Book, which I found most useful with regard to gradients, and shall never go touring again without it, as by studying it one knows exactly what one has to expect in the way of hills, as well as distance. We were troubled a good deal up in Scotland with the horses, but in the majority of cases, in my opinion, it was those in charge of them, not the car, which frightened the horses. Long before our car approached we could see the drivers pulling at their horses, and hear their excited shouts as they belaboured them with the whip. What nervous animal would stand such treatment? One more point of interest I may mention: our total consumption of petrol on the tour was thirty-seven gallons.

C. HARDY.

THE petition for the winding-up of the Automobile Manufacturing Company, Limited, is down for hearing at the Royal Courts of Justice, on Wednesday, December 18th.

MR. ALBERT E. OAKLEY, of Kimberley Gardens, Green Lanes, London, N., has ample accommodation for storing and repairing motor-cars and cycles, conveniently situated on a main road.

THE members of the English Motor Club will hold a run to Dunstable to-day (Saturday). On the following day there will be an extension of the run, according to the state of the weather and roads.

GAMAGE'S, of Holborn, E.C., are nothing if not up-to-date; they are at present showing in their Christmas windows "Santa Claus" on an up-to-date motor-bicycle, covered with snow, frost, and presents, riding down a snowy lane which runs through the centre of their window.

WHILE a motor-car was proceeding through Ealing one day last week the machine was observed by pedestrians to be behaving in a very strange manner. When abreast of Culmington Road an explosion took place. The vehicle quickly caught fire and was completely destroyed, and the Ealing Fire Brigade had to be summoned to subdue the flames. The occupant of the car was uninjured. The vehicle was insured against fire and explosion with the State Fire Office, of 13, Abchurch Lane, E.C., who inform us that the explosion was the effect and not the cause of the fire.

HERE AND THERE.



A SERVICE of motor-cars is now running seven days a week between Folkestone, Hythe, and Shorncliffe, over fifty journeys being made daily. So successful has been the venture that other cars have been ordered.

THE King left Marlborough House on Saturday last for Sandringham, accompanied by a select party of week-end guests. Wolferton was reached at 6.25, and the King proceeded to Sandringham in his motor-car, his guests following in closed carriages.

AT the last meeting of the Erdington District Council, an application was received from the Birmingham Motor Passenger Company for a licence to ply for hire in the district with motor-cars. After some discussion the matter was referred to the Finance Committee.

A MOTOR-CAR in which were three gentlemen met with a mishap last week by an encounter with a flock of ponies near Bury St. Edmunds. In attempting to clear the animals the car collided with one of them and capsized, fortunately without injury to the occupants, or serious damage to the vehicle, though the pony was injured to such an extent that it was found necessary to shoot it.

THE public examination of William Grant, coachbuilder, of Aberdeen, disclosed liabilities amounting to £833, and assets £803. A claim of £800 was included in the assets against the Northern Carriage and Motor Company, Limited, and J. D. Mitchell, the price of the stock said to have been sold by bankrupt to the company.

THE illustration on this page depicts the 1902 Dosa-Dos model of the Locomobile steam car. The horse power of the car is 6½. There are a good number of new features on the carriage, including larger piping. It is a heavier carriage right through than the standard type now so well known, and has fuel carrying capacity for a run of 100 miles. The first example of the new type only arrived last week and was immediately purchased by a gentleman who is taking it out with him to India.

FOR some time past difficulty has been experienced by motor-bicycle builders in obtaining a suitable chain stay bridge sufficiently wide to allow of the direct driving of the belt. To overcome this difficulty the Empire Motor Company, of Janes Street, Oxford Street, W., have brought out a new bridge, which is so constructed as to allow free direct play of the belt, without the use of an additional jockey pulley. It is made to suit the standard B.S.A. tubes and stays, and is also strengthened by a special shoulder on the driving side.

HEAVY motor-cars bid fair to take a strong hold on the carrying trade of the country, and keen men of business are

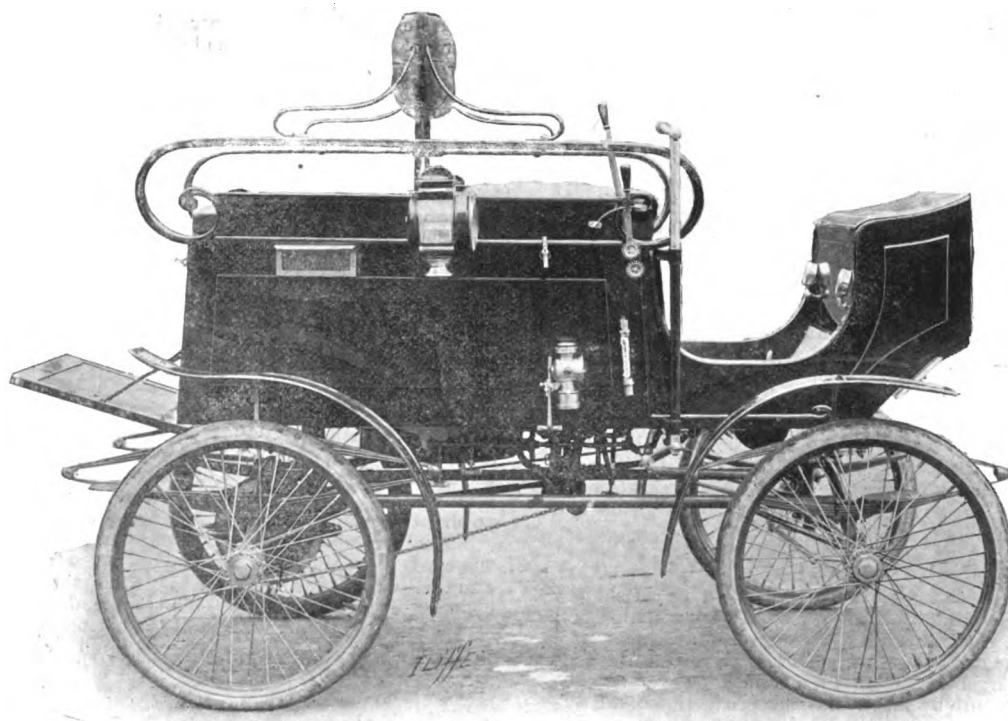
keeping a careful watch on the possibilities of cheapening and improving their methods of transport by means of the automobile. An example of enterprise in this direction by Alderman H. M. Baker, of Dover, Government contractor, was made very prominent last week. Usually to take a load of one and a-half tons to Dover Castle means employing a pair of big strong horses. On Monday last week, however, instead of two horses struggling with a light load, an automobile carrying over two tons ascended Castle Hill with ease. The lorry employed by Mr. Baker was an 8 h.p. Milnes. The vehicle used was brought from Whitstable to Mr. H. M. Baker's stores at Canterbury, and from Canterbury to Dover, with only the consumption of two gallons of petrol.

MESSRS. R. M. WRIGHT and Co., of Mint Street, Lincoln, the well-known motor-car agents and dealers, have taken the large hall known as Gadsby's Auction Mart and are having it fitted as a well appointed motor depot and works. The premises extend back from Newland, the main road to York, Gainsborough, Retford, etc., to the present workshop in Water Lane; the intervening premises have also been secured so that they will all be

connected up, and there will be a straight run through from the new premises to the works and garage at the back, with outlet into Water Lane. There will be a showroom space of 3,000 sq. feet, each of the two floors being of the same size. The workshops and garage with inspection pits will be 25 feet wide by 58 feet in length. A special feature of the business has been cars for business or pleasure, and the hiring-out business, which already is on a large scale, is to be materially developed. A full stock of petrol,

grease, lubricants, and spare and renewal parts will be kept, while all classes of repair work can be undertaken.

AT a meeting of the Hammersmith Borough Council last week it was stated that owners of motor-cars had frequently called at the Council's electricity works to obtain a supply of electricity for their accumulators. The electrical engineer suggested that, considering the large number of motor-cars now in use, and the very small number of charging stations available, it would be a great convenience to the users of the cars, and a source of profit to the Council, if electricity were supplied at the electricity works for charging such accumulators. The cost of the necessary machinery would not exceed £200, including the motor generator for changing the alternating into continuous current. The latter would not only give a low pressure supply to accumulators for petrol cars, but also the higher pressure for the larger batteries carried by electric motor-cars. The subject was discussed at some length, and ultimately the Council decided to establish an accumulator station at the electricity works at an estimated outlay of £200; that petrol car batteries should be charged at the rate of 8d. per unit, and electric cars at the rate of 3d. per unit.



THE LOCOMOBILE 6½ H.P. DOSA-DOS.

MOTOR-CYCLES FOR 1902.

(Concluded from page 733.)

A MOTOR-BICYCLE which has been in use for some time in France, where it is made, but which is new to the English market, is the Petrocyclette (Fig. 1). It is being introduced by Mr. T. R. Marriott, of St. Albans. The motor is arranged vertically in the angle of the frame above the bottom bracket, the flywheel being outside the crank case. The engine shaft carries a sprocket wheel and a large leather-lined friction clutch, so that the motor can be thrown in and out of gear as required. The driving is by chain gearing to the rear wheel hub, the ordinary pedal chain drive being fitted on the other side of the machine. The clutch is thrown in and out of engagement by means of a small lever set upon the top tube, and connected to the clutch by a steel wire, which is wound round a small drum on the lever spindle. The novelty in the motor, which is $1\frac{1}{2}$ h.p., is the method of air cooling. The cylinder has an air jacket composed of an outer cylinder of copper, with ribs, and, in addition to this, a tube is wound spirally around the cylinder proper, between the latter and the outer one. A funnel is fixed near the top, projecting in the direction in which the bicycle is travelling, so that a draught created by the forward drive is forced into the jacket, and issues from

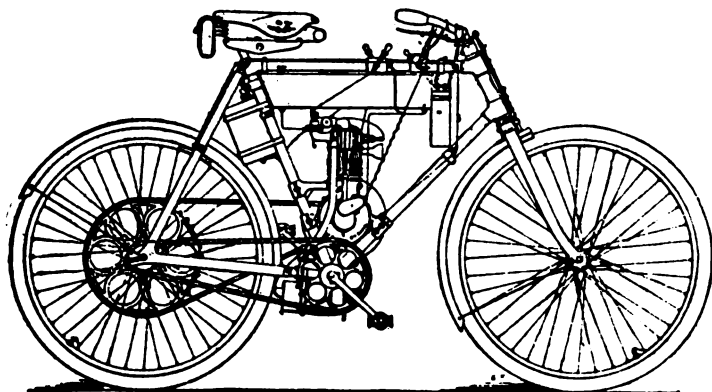


FIG. 1.—THE "PETROCYCLETTE."

another aperture at the bottom. It is claimed that this system of air-cooling cylinders is much more efficient than when flanges are cast upon the cylinder. The carburettor is of the pulverizer type, in which the petrol is drawn up by suction and mixed with the air as it enters the cylinder. The petrol reservoir and lubricating oil tank are carried beneath the top tube of the frame. The former has a capacity of one gallon and the latter of about three-quarters of a pint.

The Phoenix motor-bicycle of Mr. J. van Hooydonk, 736, Holloway Road, N., has already been illustrated and described in our columns. A feature of the machine is that the motor is provided with a device whereby lubrication may be effected without dismounting. An additional petrol tank is fitted, enabling the rider to cover very long distances, the petrol being forced from the spare tank by air pressure when required. A single lever serves to break the current, and by a further movement to lift the exhaust valve. A new departure by this firm is the production of a lady's motor-bicycle with Minerva motor, and a motor tandem bicycle. The latter is of the lady back description, all the motor work being arranged in front under the control of the forward rider. On this machine, as on the lady's machine, a guard is fitted over the belt to protect the skirts of the rider, and the tandem is fitted with a two-speed hub, making altogether a very complete machine. La Société des Cycles Clement and Gladiator, of 14, Regent Street, S.W., are introducing the new Clement motor-bicycle into this country; it is fitted with a 1 h.p. motor, carried on the lower cross tube of the frame, and driving the rear wheel by a strap. A machine of this type has just completed a record run from Paris to Rome in 4 days 23 hours, crossing the Alps en route. The route. The weight, complete, of the machine is only 60 lbs.

One of the most novel motor-bicycles that has come under our notice recently is the "Martini," made by Mr. William Hardy, of 55, Greenwich Road, S.E. The small petrol motor, to which a neat form of exhaust-valve lifter and spray carburettor are fitted, is supported on the lower cross tube of the frame, but, instead of a belt, chains are used to transmit the power to the rear wheel. The motor drives direct by a chain from the pinion to large chain sprocket on the back wheel, but there is a free-wheel clutch fitted to the latter, so that the bicycle never drives the motor. For pedalling, there is the ordinary chain and free-wheel, and to connect the pedals with the motor is another chain on the opposite side of the bracket to the pedal chain; it drives a small pinion on the outside of the motor pinion also with a clutch. By the arrangement adopted it is said to be possible to "coast" down hills, with the engine and all driving chains at rest, saving petrol and wear and tear to all working parts. In the event of a back-fire or mis-fire the machine is not brought to a standstill, the bicycle simply overrunning the engine. We shall be interested to learn how the "Martini" arrangement works out in practice. The Riley motor-bicycle, of the Riley Cycle

Company, Ltd., Coventry, has a specially designed frame, so arranged as to provide a rigid bed for the motor ($1\frac{1}{2}$ h.p.), which is carried in a vertical position in front of the bottom bracket. The drive is conveyed to the rear wheel by a belt, while to reduce vibration, the Sadler anti-vibrating saddle support is used.

One of the first, if not the first, lady's bicycle to be put on the market was made by Mr. Dan Albone, of Biggleswade, and now he is one of the first to place a lady's motor-bicycle upon the market. The machine, like the "Ivel" motor-bicycle for gentlemen, has a Minerva motor fitted between the bottom bracket and the front wheel, while the frame is dropped to accommodate the skirts of the rider. The carburettor is fitted behind the upper part of the main down tube, and the battery and coil are supported by the saddle stays above the mud-guard. The regulating levers are arranged upon the tube rising to the top of the head. The belt is carefully guarded, so as not to catch in the lady's dress. The East London Rubber Company, Limited, of Great Eastern Street, E.C., who have lately established a motor department, are introducing a new motor-bicycle made by the Fabrique Nationale d'Armes, of Herstal, Belgium, in which a number of novel features are introduced. The motor which is of $1\frac{1}{2}$ h.p., and has an external fly-wheel, is fitted vertically inside the frame, and drives the rear wheel by a belt. Instead of the usual metal rim for the belt, a wooden pulley is fixed to the rear wheel. A small float feed carburettor supplies the mixture for the engine.

The Werner type of motor-bicycle, in which the front wheel is belt-driven by a motor attached to the steering post in front of the head, finds favour with the Raleigh Cycle Company, Limited, of Nottingham, who are employing the Werner $1\frac{1}{2}$ h.p. engine on their machines. A feature of the machine is the lubricating arrangement, a lubricating cup being fitted which will hold sufficient oil for 100 miles. Below this there is a hollow cock which in itself holds one charge. As this is turned over the contents are discharged into the cylinder, and when the cock is returned to its former position the lubricator fills it in readiness for the next charge. The front wheel is carried in an eccentric fork end, so that the driving belt can be easily adjusted to any reasonable extent without resorting to cutting a piece out, and running the risk of removing too much. The control of the motor is entirely effected from the handle-bar, the throttle, valve lifter, and air adjustment, all being done without removing the hands. A back-wheel rim brake is applied by Bowden wire from inverted handle grip, and the ignition is controlled from the left handle grip as usual. Sufficient lubricating oil for 100 miles and enough petrol for 150 miles are carried. The arrangement of the tank, which fills up nearly the whole of the forward panel of the diamond frame, has been carefully designed. In the forepart is the carburettor, in which is an indicating float, so that the height of the petrol can be easily maintained, and even running can result. The petrol is contained in the upper part of the tank, and the lower part is neatly arranged to contain the coil and accumulator. Three spare compartments are provided to contain lubricating oil, a reserve supply of petrol sufficient for fifteen miles, and a small funnel. The arrangement reduces the length of the ignition wires so that the chances of short circuiting are greatly minimised.

Another American motor-bicycle which appears to be meeting with success is the "Mitchell," handled in this country by Messrs. Davis, Allen, and Co., of 5, Singer Street, E.C. The motor, which has an air-cooled cylinder 3 in. diameter by 3 in. stroke, develops $1\frac{1}{2}$ actual h.p.; it is arranged above the upper part of the bottom tube, with the head of the motor forward. Driving is by a belt to an aluminium pulley secured to

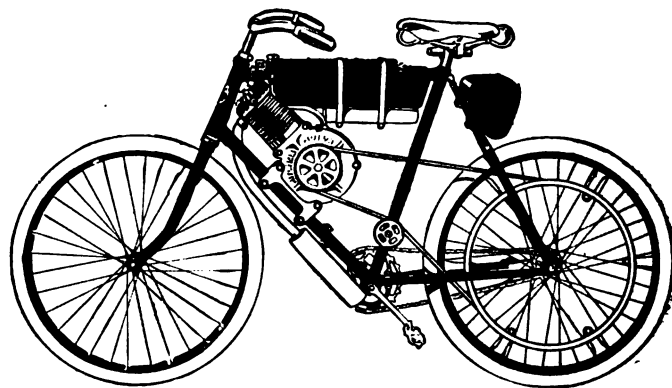


FIG. 2.—THE "MITCHELL" MOTOR-BICYCLE.

the back of the rim by six radial brackets, a jockey pulley mounted on the down tube taking up any slack of the belt. The oil and petrol tanks are suspended from the top tube of the frame, and the lubricating oil is led to the junction of the cylinder and crank case. No carburettor in the ordinary sense of the word is employed, the petrol being run into a mixing tap, which is provided with an air valve. The machine is fitted with "Goodyear" detachable pneumatic tires, which have thickened edges lying in the rim with hollow sides and straight inner flanges.

Still another motor-bicycle of American manufacture—the Merkel—is being introduced into this country. From the importers—the Universal Trading Company, Limited, 55, Dale End, Birmingham—we

learn that a 1½ h.p. motor is supported on the lower cross tube of the frame, and drives the rear wheel by a belt working on a jockey pulley. A new machine, somewhat on the lines of the 1901 Werner, has been put on the market by the Imperial Cycle and Motor Company, Upper Trinity Street, Birmingham, the 1½ h.p. motor being supported in front of the head. The mixture, however, is led from the carburettor through a flexible rubber tube to the combustion chamber instead of through the head of the machine. A float feed carburettor is employed in conjunction with a tank holding 1½ gallon of petrol. A spring connection is provided for uniting the wires of the ignition to the terminals. The timing lever for the ignition is arranged on the handle-bar. The gas, mixing, ignition, and compression tap levers are all placed so as to avoid confusion. The carburettor is a self-feed float, and is automatic in action. The cycle frame itself has been specially made, and fitted with strong front forks, ball head, and wheels; it is also provided with a free wheel, front wheel brake, back-peddalling rim brake, and two inch tires. We also understand that the Imperial Company are constructing motor-tandem bicycles on similar lines.

Motor-bicycles are also being made on the lines of the Minerva and Brown machines by Messrs. H. F. Copland and Co., Stanstead Road, Forest Hill, S.E., Mr. J. F. Bentley, 45, New Bridge Street, E.C., the Lancaster Engineering Company, Loveday Street, Birmingham, the Referee Cycle Company, 66, Turnmill Street, E.C., the New Coventry Eagle Cycle Company, Limited, Lincoln Street, Coventry, Messrs. F. H. Parkyn, Limited, Olympic Cycle Works, Wolverhampton, the Wearwell Cycle Company, Limited, Wolverhampton, Messrs. J. C. Wilson and Co., Battersea Rise, S.W., Messrs. Bradbury and Company, Limited, Oldham, Messrs. W. R. Heighton, Limited, Peterborough, the Canada Cycle and Motor Company, Limited, 57, Holborn Viaduct, E.C., the Eclipse Manufacturing Company, Limited, Oldham, Messrs. Harrington Lucas, Limited, 88, Cheapside, Birmingham, Messrs. Bransom, Kent and Co., Limited, 332, Goswell Road, E.C., Messrs. A. W. Gamage and Co., Holborn, E.C., Mr. J. F. Janes, Sydenham Cycle Works, Sydenham, S.E., the Triumph Cycle Company, Limited, Coventry, Messrs. Mills and Fulford, Coventry, and Messrs. John Barratt, Limited, Wolverhampton. Mr. A. Breeze, of 75, Albermarbury, E.C., and Mr. J. L. Thomas, of Barnet, are both building Minerva type machines, in which an attempt has been made to reduce vibration by the use of spring forks. Among the several firms making special sets of cycle fittings suitable for use in connection with the building up of motor-bicycles, are the Birmingham Small Arms Company, Limited, the Chater Lea Manufacturing Company, Limited, Messrs. Perry and Co., Limited, the Cycle Components Company, Limited, and the Eadie Manufacturing Company, Limited.

The London Autocar Company are introducing a new small air-cooled motor of 1.5-8 h.p. complete with a spray carburettor specially adapted for driving bicycles. It is of French construction and is known as the "Brutus." A new motor for use on bicycles has also been introduced by Messrs. H. W. Van Raden and Co., of Coventry.

A CHESHIRE MOTORISTS' STORY.

We that live here in Cheshire,
Have been severely tried
By magistrates' high pressure,
And by police belied.
It matters not if riding
On bicycle or car,
You would see bobby hiding
Before you had gone far.
Last week they had a stopper
Besides that new stop watch;
That clever sergeant copper
Had got about his match.
The terrible te-ragedy
Was quickly turned to mirth
When Sergeant B——, the bobby,
Was quizzed by Staplee Firth.

C. G. C.

SPACE AT THE MOTOR-CAR EXHIBITION.

In the High Court of Justice, on Monday, before Mr. Justice Kekewich, the case of Farman (trading as Farman's Automobile Agency) v. Cordingley and Company, was heard. This was an action for an injunction to restrain the defendants from letting a certain space at the Motor-car Exhibition to be held at the Agricultural Hall in April, 1902, in alleged violation of an agreement entered into between the defendants and the plaintiff in May last, and for damages for breach of agreement. In January, 1901, the plaintiff applied to Mr. Cordingley for a space in the Agricultural Hall for the Motor-car Exhibition of 1901, and signed a printed form of application, whereby he agreed to enter his name as an exhibitor, "subject to the approval of the Allotments Committee of the Automobile Club of Great Britain." The plaintiff exhibited at that exhibition, which was held early in May last, and either on the last day of the exhibition or at some later date in May—the exact date was in dispute—he applied to Mr. Cordingley for a space in the hall for the exhibition to be held in 1902. According to the

plaintiff's case, a certain space was allotted to him at the ordinary rate—there was no dispute as to the price—and nothing was said about any conditions as to the approval of the Automobile Club or otherwise. Mr. Cordingley, on the contrary, stated that the prospectus of the exhibition of 1902 was shown to the plaintiff at the date of his application, which prospectus contained a printed form of application similar to that used in the previous years; and, further, that he expressly told the plaintiff that the space was let to him subject to the approval of the Club. It appeared that the plaintiff was intending to exhibit at some other exhibition of motor-cars, and that the Committee of the Automobile Club were unwilling to give their approval to any exhibitors unless they undertook not to exhibit elsewhere. This policy was in accordance with certain resolutions recently passed at a representative meeting of the motor-car trade held on the premises of the Automobile Club to the effect that it was detrimental to the interests of the trade that several exhibitions of motor-cars should be held in this country at the same time. Some correspondence took place between the plaintiff and the defendant Cordingley, and upon the plaintiff declining to give an understanding not to exhibit at any other exhibition Mr. Cordingley recommended him to withdraw his application, inasmuch as it required the approval of the Automobile Club, and that approval would not be obtained. The plaintiff, in reply, denied that his application was subject to any such condition, and he commenced this action. At the trial there was a direct conflict of evidence as to the date of the interview at which the space was allotted to the plaintiff, and as to what took place at that interview. Mr. Renshaw, K.C., and Mr. Eustace Smith were for the plaintiff; and Mr. T. Terrell, K.C., and Mr. Leigh Clare for the defendants.

Mr. Justice Kekewich said that the question as to the terms of the agreement between the parties was a question of fact. The evidence as to that was of a most unsatisfactory character, but having regard to the fact that the plaintiff had been a constant exhibitor at these exhibitions and to the terms of the agreement which the plaintiff had entered into with reference to the exhibition of 1901, his Lordship came to the conclusion that the plaintiff agreed to take the stand allotted to him for the exhibition of 1902, subject to the approval of the Allotments Committee of the Automobile Club. It was for the plaintiff to show that that approval had been given, and he had not attempted to show it. But then it was said that the plaintiff was entitled to succeed because the defendant Cordingley, having let this space to the plaintiff, was bound to do his best to obtain the approval of the Committee, and he had not done so, and "Day v. Singleton" (1899, 2 Ch., 320) was cited in support of that proposition. But in his Lordship's opinion that case was distinguishable from the present, because in this case Cordingley was simply the agent of the Committee for allotting the ground; he had nothing whatever to do with obtaining the approval of the Committee. These exhibitions were admittedly held under the direction of the Automobile Club, and it was for the Club to say who was to be admitted as an exhibitor. The plaintiff's case therefore failed on both points, and there would be judgment for the defendants, with costs.—*The Times*.

A NON-STOP CASE DISMISSED.

At Kingston, Mr. Arthur Morris, of 31, Piccadilly, London, was summoned by Mr. George Bird, for being in charge of a light locomotive in Hook Road, and not stopping it when requested to do so. Mr. Bird said he was riding a horse, attended by a groom, when he met the defendant and another gentleman in a motor-car. As the animal shied at motor-cars, he held up his hand for the defendant to stop. He did not do so, however, with the result that the horse shied to the side and nearly threw him into a ditch. A policeman having stopped the defendant, witness told him he had nearly broken his neck, whereupon he simply laughed in his face. Defendant alleged that he did not see the horses until within a few yards of them, there being a large wagon in front, and that he had no time to pull the motor-car up. He lessened speed, however, at once. Mr. William Morris, defendant's brother, having given evidence to the same effect, the chairman said, as there was a conflict of evidence, defendant would be given the benefit of it, and the summons would be dismissed.

THE MERCERS' COMPANY v. THE BRITISH AUTOMOBILE COMPANY.

In the Chancery Division of the High Court of Justice, before Mr. Justice Kekewich, Mr. Warrington, K.C., said that in the matter of the Mercers' Company v. The British Automobile Commercial Syndicate there were two actions brought for the purpose of restraining the defendants from causing a nuisance by noise and in other ways by the manner in which they conducted their works. One of the actions had been settled, and he asked that the other action should stand over until next sitting, as the parties were still negotiating in the hope of arriving at a settlement. Mr. Justice Kekewich assented.

ACTION FOR DAMAGES ABANDONED.

In the Dublin Nisi Prius Court No. 2, before Mr. Justice Kenny and a city special jury, the case of Harvey and another v. Fortescue was heard. This was an action in which Mathew Harvey and Mary Harvey

his wife, of Ballinlaughan, county Louth, sought damages from Mathew C. E. Fortescue for personal injuries to the plaintiffs, and for damage to their car and harness, caused by the alleged negligent driving by the defendant of a motor-car. The defendant denied he did the acts complained of, and pleaded the accident was inevitable, and contributory negligence on behalf of the plaintiffs.

Serjeant Dodd, in opening the case for the plaintiffs, said the accident arose from reckless driving of a motor-car by the defendant, who was a Major in the Louth Militia. The event occurred on Sunday, July 28th, when plaintiffs were driving home on a side car and met Major Fortescue, who was driving a motor-car, accompanied by his wife. The motor was coming at a great rate of speed in the direction of the Major's house. The plaintiff pulled the horse as close as possible to the ditch on the left. The road at the point was eighteen feet wide, and the mare becoming frightened wheeled round, and had turned almost completely when the motor came up behind and struck the back of the car, smashing it. A doctor was called in, and was in constant attendance on Mrs. Harvey until October, and she had since been suffering from extreme pain, apprehension, and fright, her condition being all the more serious as her child was near being born. Plaintiffs admitted having attended a race meeting two days after the accident. After some witnesses had been called on both sides, Serjeant Dodd said he had conferred with his client and the Solicitor-General, and he did not propose to go further with the case. The parties were willing to turn back to back, the defendant paying the jury, and they would, therefore, be spared from examining the lady in Court.

PETROL STORAGE LICENCES.

At the South-West London Police Court, George E. Pearce, a cycle dealer, of 4, Belle Vue Road, Wandsworth Common, was summoned, at the instance of the London County Council, for keeping petroleum spirit for sale on his premises contrary to the statute. Mr. J. Godfrey supported the summons. One of the Council's inspectors was passing the defendant's shop on September 21st, when he noticed a large iron plate bearing the words, "Pratt's Motor-car Spirit," fixed outside the premises. He walked inside and found five tins, each containing two gallons of the spirit. The defendant said he simply used the spirit for his own motor-cars; he had never sold any. Mr. Godfrey argued that the presence of the advertisement showed that the spirit was for sale. The defendant observed that he only displayed the advertisement as a favour to the firm from whom he purchased the spirit. So far from selling the oil he had refused on one occasion to sell a small quantity to a customer. Mr. Garrett thought there was no justification to warrant a conviction, and he dismissed the summons.

SEQUEL TO A FURIOUS DRIVING CONVICTION.

At the Spittlegate Police Court, Mr. C. E. W. Lucas, solicitor, of Nottingham, said the Bench would remember that on the 19th October last, Mr. Samuel Harvey, of Nottingham, was fined £5 and costs in that court for driving a motor-car, on the Great North Road, at a greater speed than he was entitled to do, in the parish of Long Bennington, on October 3rd. He was instructed by Mr. Harvey to make an application to remove that conviction into the Court of King's Bench for the purpose of being quashed. In order to do that he had to serve Major Longstaffe and Colonel Parker, two of the convicting magistrates, with due notice. He had a further application to make in the case. At the hearing Police-constable W. Bean swore that he was standing at the ninth milestone on October 3rd, and saw Mr. Harvey coming in a motor-car from the direction of Newark towards Grantham. He timed him for half a mile, and this he found he covered in fifty seconds. In cross-examination Bean said he knew it was half a mile, because he saw Mr. Harvey coming past the bridge, and he measured the distance with a cyclometer that week. Knowing the road he (Mr. Lucas) found that anyone standing at the ninth milestone could not see the bridge which the constable alleged he saw Mr. Harvey pass. Under those circumstances Police-constable Bean must have told an untruth when he said that, for there was a bend in the road which prevented anyone seeing more than 723 yards. He asked for a summons against Bean, so that the matter could be threshed out in that court. Consideration of the application was adjourned.

FURIOUS DRIVING CASES.

At West Bromwich Police Court, Henry Neath, residing at Fox Yard, Tipton, was charged with being drunk when in charge of a motor-car on the 2nd. Defendant's motor-car came into violent collision with a tram engine. The motor-car was badly damaged, as also was Neath. Mr. J. S. Sharpe, who defended, said defendant was perfectly sober at the time, and was crossing the road, when the steering gear became locked, and the car came to a standstill right in front of the tram-engine, which collided with the car. The Bench considered the case proved, and fined defendant £1 17s., including costs.

At Knutsford, Mr. Nicholas Kilvert, of Brooklands and Manchester, was summoned for driving his motor-car at a greater speed than twelve miles an hour. The information was supported by Sergeant Bladen and a constable. The evidence of the prosecution was that Mr. Kilvert had driven over a measured distance of 110 yards on the Chester road, Plumley, in 15 sec., or at the rate of fifteen miles per hour. The sergeant stated that he took the time with a stop watch, which he produced in court. The cross-examination by Mr. Staplee Firth brought about an utter collapse of the case for the prosecution, and the Bench dismissed it.

At Worthing, Herbert Austin, of Birmingham, was summoned for furiously driving a motor-car at Broadwater on November 17th. Mr. A. B. Dixon appeared for the defendant, Police-constable Payne stated that defendant covered a quarter of a mile along the east side of Broadwater Green in thirty-eight seconds, or at the rate of twenty-three miles an hour. Addressing the Bench for the defence Mr. Dixon pointed out that this particular road was unusually wide and straight, and that consequently the offence was not so serious as it would have been in a narrow and crowded thoroughfare. The magistrates imposed a fine of £5 and £1 10s. costs.

At the Northampton Borough Sessions, Cecil Edge, 14, Regent Street, London, was summoned for driving a motor-car along Bridge Street at a greater speed than was reasonable, on October 1st. Defendant did not appear. The Chief Constable said he had great difficulty in serving the summons, and as defendant had promised to appear that morning, and the Chief Constable had several witnesses in Court, he asked for a warrant to be issued for his apprehension. The warrant was issued.

PARISIAN thieves are now abstracting the platinum tubes from the interior of motor-cars. Hundreds of thefts of this kind have been committed during the past few weeks. One night recently £60 worth of platinum tubes were stolen from a large dépôt close to the Arc de Triomphe.

ONE of the special features of the bazaar to be held at the Queen's Hall, London, on the 18th, 19th, and 20th inst., in aid of the funds of the Sisters of the People, will be the opportunity given to visitors of enjoying a motor-car drive, as the Motor Manufacturing Company, Limited, have promised to place a carriage at the disposal of the committee for this purpose.

WHILE the Duke and Duchess of Beaufort, who had been spending the week-end at Bowood with the Marquis and Marchioness of Lansdowne, were returning to Badminton in their motor-car, the driver endeavoured to turn a curve too sharply near the village of Dorry Hill and brought the vehicle to grief. Fortunately the car did not capsize and none of its occupants was injured. The vehicle was, however, damaged, and the journey was continued in another conveyance.

THE Newbury County Council has passed a resolution that in consequence of the accidents and dangers caused by motor-cars, a Committee be appointed with a view of reporting their decision to the Local Government Board and Members of Parliament. An amendment to memorialise the Local Government Board and County Council to provide for registration and better regulation was also carried, one of the Councillors remarking that registration would be inadequate, as a police officer would not be able to read the number of a car going at an excessive speed.

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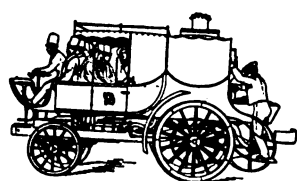
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COMMENTS.



THE December meeting of the Nottingham and District Automobile Club was held last week, at the headquarters, the guest of the evening being Mr. C. Johnson, Secretary of the A.C.G.B.I. The chair was taken by Mr. E. W. Wells (vice-president), in the unavoidable absence of the president, Mr. R. Millington Knowles, J.P. After an informal club dinner, Mr.

Claude Johnson delivered an address on matters of general interest to automobilists. He sketched out the work done by the Automobile Club with a view to altering the present unsatisfactory state of the law in respect to the limit of speed, and stated the measures which were being taken with a view to introducing a Bill into Parliament which might meet the views of automobilists, and at the same time be acceptable to other users of the road. In conclusion Mr. Johnson expressed the great honour he felt at receiving the invitation from the Nottingham Club, which he regarded as one of the most successful of the affiliated organisations. A cordial vote of thanks accorded to the visitor terminated the proceedings.

Prosperity in France.

IN estimating the wealth of France at the present time, the new motor-car industry looms large, and must be regarded as one of the great factors in the national prosperity. The advent of the cycle was useful in stimulating a desire for the exploration of the country, and this has found full vent in the development of the motor-car. Not only has the new machine proved lucrative to the actual manufacturers, but it has fostered and developed many other industries ranging in variety from the wheelwright and tire-maker to the cafés and inns throughout the country. This is a fact familiar enough to motorists; we recur to it now to enforce the idea that the progress of the motor-car in this country will restore the prosperity of many a wayside village.

"Reminiscences."

THE Right Hon. Sir J. H. A. Macdonald, K.C.B., Lord Justice Clerk of Scotland, has kindly consented to read a paper at the Automobile Club, on Wednesday, the 13th February, after the House Dinner of that date. The subject of the paper will be "Reminiscences." The paper is to be written for subsequent publication in the Badminton Library book on "Motor Driving." It is desired that this chapter should contain a selection of the most interesting experiences in connection with the early days of the revival of automobilism, such as delays on the road which occurred on account of the inexperience of drivers or the imperfections of the early machines. The Secretary of the A.C.G.B.I. would be glad if gentlemen who have experienced or have in mind amusing incidents of the character above-mentioned would kindly send to him at the

Club, 4, Whitehall Court, London, S.W., a short account of such incidents for submission to the Lord Justice Clerk.

A Mystery.

AT any time of the day during the past week English motorists could be seen at the stand of Messrs. De Dion Bouton at the Paris *Salon* endeavouring to fathom a mystery. The latest idea of the De Dion firm is to build a 12 h.p. single-cylinder engine. To compensate for the lack of balance in a motor of such power, it is connected to a second dummy cylinder—that is to say, one without valves or sparking plug, and only a rising and falling piston synchronised with the piston in the cylinder proper. The motion of the piston in the second or dummy cylinder is utilised to operate a forced lubrication system also. Only one engine of this type is shown, and its future looks by no means hopeful, for much reticence is shown about it by the representatives of the firm itself.

"A Hunting We Will Go."

So thinks many an ardent automobilist, who sees in his car a means of attending a distant meet unattainable by ordinary means. "Not on your motor-cars," says the Warwickshire Hunt, a fine old crusted non-progressive institution. Why not it is difficult to understand, unless the prohibition is based upon the same principle as that which strove to diverge the railway line from the limits of the Hunt. The motorist does not hunt on his car, but uses it as a means of going to and from the meet, having sent his horse or horses in advance; therefore damage to agricultural interests cannot be urged. The flimsy excuse that the motor eats neither hay nor corn from the land which it crosses will not hold water, for the same applies equally to the railway train which conveys many a keen sportsman from crowded city to distant meet. Each in its way tends to increase the members of the Hunt and adds to its too frequently much impoverished exchequer. The covert-side should prove an excellent venue for the establishment of a proper understanding between car and horse, and not the scene of bickering between conservative huntsman and more go-ahead but equally sportsmanlike motorist.

Brer Fox and the Motor-car.

QUITE a novel feature has been added to the "sport of Kings" by an up-to-date German fox who saved his brush by an ingenious ruse. Hard pressed by the hounds he tore down the main street of Wilmersdorf, a suburb of Berlin, leaped on the platform of an electric motor-bus as it passed at full speed, and in an instant was under one of the seats—to the terror of the women passengers. In a few minutes the car was stopped, and the conductor soon fished Reynard out with a pair of iron tongs. The ruse, however, had served its purpose. The hounds, puzzled at the loss of scent, had taken another direction, and the fox, being let loose, got clear away. We commend the idea to the Warwickshire Hunt, who might add considerably to the length and excitement of a run by giving weary Reynard a lift on one of the motor-cars so much in evidence at their meets.

More Aerial Experiments.

THIS week's aerial rendezvous shifted from the Crystal Palace to the more classic Welsh Harp. On Tuesday Mr. Frank W. Cooper, an undergraduate of Clare College, Cambridge, made an ascent in a small balloon of 8,000 feet capacity, with the object of ascertaining the supporting capacity of the air at different altitudes. The balloon was not provided with a car, and Mr. Cooper seated himself on a ring at the extremity of a parachute, which was suspended by means of a contrivance, under his control. When liberated the balloon shot quickly up to 1,000 feet in less than half a minute. The aeronaut, who swung violently to and fro, seemed to the spectators below to be in difficulties, and after detaching himself he had a dead fall of 300 feet before the canvas inflated and the parachute began to descend more gradually. On reaching the ground, the daring young aeronaut was none the worse for his adventure, but described the sensation of the first part of his fall as decidedly uncomfortable. The scientific results of the descent we are at present unable to state, but we understand that Mr. Cooper intends to continue his experiments.

Motor-Cars at Elections.

AT the Renfrewshire County Council election the other week good service was done for the successful candidate by a friend's motor-car, the ladies specially favouring the new mode of driving to the poll. A correspondent informs us that even farmers left their wheat-sowing to get a drive on a motor-



car. The accompanying illustration shows the successful candidate, Mr. Denholm, and Major Campbell, his agent, on the car.

Wanted a Definition.

WHEN will common sense be embodied in the law? For a long time, as motor-cars were not specifically mentioned in any statute, they were described as traction engines—and the industry suffered the slow torture involved by the presence of the man with the red flag. Now toll-keepers and other survivors of the Dark Ages are allowed by strictly regarding the letter of the law to do some strange things. Bicycles and motor bicycles are liable to the foolish definitions of bridge-keepers, and even Mr. Justice Wright, who has had a case before him, has not added much to the solution of the problem. A bridge company with power to levy tolls decided that a bicycle was a "carriage on springs." Such folly was appealed against and Justice Wright has given the definition that a bicycle is not

"a vehicle drawn by horses or other beasts of draught"—a very luminous judgment indeed. It does not say what a bicycle is, but it does at least imply that the riders of such "vehicles"—and there will be a large number of motor-bicycles in use next season—are not liable for toll on the same scale as circus vans, harvest carts, and coal lorries. For which all such riders should be thankful.

Another Admonition.

A VERY sensible article on the speed of motor-cars appeared in the *Bristol Echo* the other day, in which it was recognised that the speed limit is absurd; but it was also maintained that motorists would, by proper observance of the existing law, do much to help their cause and secure the ultimate abolition of the vexatious restriction. That is what has been urged by representative motorists for many months, and we are glad to see that great provincial daily papers are ceasing their abuse of the automobilist, and urging him to carry out the advice of the Automobile Club. This is certainly the wiser course to take—and one that motorists should always follow.

A Plea for Exeter.

SOME of the residents of the old city of Exeter have modern ideas, and against the proposal to disturb the roadways of the main thoroughfares for the provision of tramcars comes the suggestion that a public motor-car service should be formed. In a very sensible series of notes the *Devon Gazette* points out the position of the ratepayers if they now spend £100,000 on tramways, and if, in a few years, motor-car services were developed by private enterprise. By setting their passengers down at their doors and taking them to their destination by the shortest possible route, the motor-car would quickly establish its popularity and its profitableness. Then where would be the ratepayers' expenditure? But if the municipality would secure a few motor-cars for public service a useful experiment could be made, cross routes could be maintained, which would be impossible with the tramway system, and the convenience of the citizens would be more efficiently served.

Motor-Vehicles for Heavy Traffic.

MR. E. SHRAPNELL SMITH has a good letter in the *Liverpool Daily Post* on motor-wagons for the cheap and effective transit of heavy goods. He believes that animal power will survive where delays are frequent, and for short distances in towns where the roads are level or moderately graded, while motors will be adopted for particular districts, where they will be capable of rendering efficient and economical service in competition both with horse haulage and the railway. In the cartage work between Manchester and the outlying towns thousands of tons per week are being carried by motor-wagons at a considerable saving, when compared with railway charges. Mr. Smith makes a reassuring point for the railway companies, when he shows that while the latter will lose some of their short distance traffic, they will gain by the feeding powers of motor-vehicles in country districts, for facilities to get produce to market must foster internal trade.

Motor-Cars in the American Postal Service.

IN the annual report for the year ended June 30th last just issued by the Postmaster-General of the United States, it is remarked: "The first contract for the carriage of mails by automobiles was entered into during the last fiscal year for service between the post office at Buffalo and the station in the Pan-American Exposition grounds, a distance of 4½ miles. This distance was covered in thirty-five minutes, and there were seven trips daily. The service rendered proved satisfactory, and a similar service will be started in Minneapolis on January 1st next.

At Scarborough.

WE hope that the Town Council of Scarborough will give the new motor-car service which is being established there the fullest opportunity of demonstrating its usefulness. At the last meeting of the Council, when the matter was discussed, there seemed a tendency on the part of many members to try and force the cars to avoid one of the best routes, viz., that over the Valley Bridge. Now, if the service is to have fair play, it should be allowed along the routes best suited to the public convenience. It is folly to require public motor-cars to avoid certain roads if private motor-cars are allowed to travel on such thoroughfares. There should be absolute impartiality between horse and motor drawn vehicles, and now that Scarborough has a chance of further popularity by the encouragement of a motor-car service we hope that no personal prejudice will be allowed to thwart the success of the scheme.

Weston-super-Mare.

A Weston-super-Mare correspondent draws our attention to the delights of his town, and wonders why motorists do not go that way in large numbers. Certainly the road from London is very good, and the mileage, *via* Bath and Bristol, is 140. The only note of warning to be offered is that at "Long Ashton" (four miles from Bristol) motorists should go steadily. The Grand Atlantic Hotel has every accommodation for motors and motorists, and Mr. Burnell will be found able to look after any necessary repairs. Petrol can easily be obtained, and accumulators charged in the town. The number of resident motorists is growing, the latest addition to their ranks being Mr. J. J. Bastow, who is not only a Somerset County Councillor, but also a J.P. He has ordered a 8 h.p. Daimler car.

Motor-Cars in the Eastern Counties.

In some of the papers published in the Eastern Counties—now that they have got over their original prejudice against rapidity of movement on the public highways—we see pleas raised for the inauguration of motor-car services for the use of the farmers and market gardeners. The great railway companies use their strength to exact the utmost for the transit of home-grown agricultural produce; while favourable terms are allowed that from the Continent. At present, the lumbering market wagons with the heavy horses and sleepy drivers are the only competitors to the railway companies. But the adoption of a reasonable scheme of motor conveyance from some of the market gardens in South-east Essex to Covent Garden, Spitalfields, and other London markets would bring the railways to a reasonable frame of mind and materially assist the English producer.

A Long Run in the Fog.

MESSRS. W. W. MORRIS and F. M. Evans, of Pontypridd, made a memorable motor-car journey from that place to London in the recent fog. Leaving home at noon on a Monday all went well till Chepstow was reached at 4.30. Continuing *via* Aylburton they were enveloped in a dense fog, but felt and inquired their way to Newnham, where they put up for the night (fifty-six miles out). Starting early next morning they reached Gloucester, still befogged, and there found a net-work of tram-lines added to their difficulties. Birdlip Hill was reached under the same unfavourable conditions, and taken with due caution. On to Cirencester glorious sunshine prevailed. After an incident with a hay-motor in the fog, Wantage was reached, where the night was passed. On Wednesday morning a cold run was made to Wallingford, but at Slough the fog fiend was more in evidence than ever, and Hounslow was reached with great difficulty. Here the friendly arc lamp of an electric tram acted as did the pillar of fire to wandering Israel, and under its beneficial beams the motorists reached Hammersmith, and finally groped their way to Kensington, completing their journey to the City next morning.

More Records.

THE struggle after records in France still continues. On Tuesday, on the road between Paris and Rouen, near Gaillon, Gabriel, on a Darracq car, made several successful attempts, covering the kilometre with flying start in 39 1-5sec., or at the rate of over ninety-one kilometres an hour. The flying mile was covered in 1min. 3sec., while the mile from standing start was done in 1min. 13 1-5sec., as against his own old record of 1min. 19 1-5sec. On Wednesday M. Jenatzy was to make an attempt at creating a new record with his combination petrol-electric car at Achères.

Lassoing Motorists.

VARIOUS and even humorous are some of the serious suggestions made by American authorities for the suppression of the "motor-scorcher." Previously we have referred to proposals for placing obstacles on the roads and administering electric shocks; now, Mayor Patten, of Evanston—a suburb of Chicago—comes into prominence with the declaration that he will "send the policemen out in detachments of two, equipped



MR. S. T. DAVIS, JUN., ON HIS 8 H.P. RACING LOCOMOBILE.

with ropes, with orders to bring obstinate riders to their senses with a jerk." This means that to the ordinary accomplishments of the keepers of law and order must be added an expert knowledge and practice of the principles of lassoing. Perhaps some of our own rural authorities would like to introduce a similar innovation, importing a few cowboys from Texas for the purpose of catching motorists. It would certainly indicate greater manliness than is involved in the English expedient of hiding behind hedges.

MOTOR tractors for heavy work are about to be introduced on a large scale into Russia, under Government auspices. For some time past experiments have been conducted by the Minister of Ways and Communications in the use of motor-cars for purposes of haulage over unpaved tracks loosely laid with timber-work instead of rails, and having satisfied himself that a 3½ h.p. machine could move a couple of tons on such a track at a speed of twelve versts an hour, he is making preparations to introduce the system on a large scale in those immense regions still only thinly or not at all provided with railways. Machines of about 7 h.p. will be used, and they are expected to haul loads of four tons at about ten versts an hour.

FLOTSAM AND JETSAM.

By "FLANEUR."

AUTOMOBILISM must be a very good thing for the southern railways and the cross-Channel steamers! Though I have often been in Paris in December, I have never before seen so many Englishmen in the gay city at this time of year as during the last few days. The Automobile Club party of Friday last was formidable enough, with its sixty entrants but there were those who had gone before and there were many who came after; and one was liable to meet an Englishman at every turn when perambulating the Grand Palais. With but little effort one could imagine one's self at the Agricultural Hall. And while one could not but regret that it should still be necessary to evince so much interest in the products of another nation, as an automobilist one could reasonably rejoice that the movement was so vigorously "booming."

To my thinking there is nothing so admirable about the Paris show as the enthusiasm of the Belgian King. He was there on Friday, he was there on Saturday, and, *mirabile dictu*, he was there again on Sunday, in all that seething throng of the proletariat, which was so dense, indeed, that the police abandoned all attempts to force a passage for the royal *chauffeur*. The King is even stated to have matured a project for the building of a special road, from end to end of Belgium, to be reserved exclusively for automobilists and cyclists. There is little doubt but that he will carry out his plan, for it is to King Leopold that the numerous side paths for cyclists which abound in Belgium owe their existence.

A GOOD story may be told, by the way, of the King's second visit to the Salon, on which occasion a member of the Automobile Club party had an amusing *rencontre* with His Majesty. The Englishman in question was inspecting a certain stand when he found himself being pushed about somewhat roughly, and realised that he was face to face with the advance guard of King Leopold's party. So great was the press, however, that the Englishman could neither move forwards nor backwards, and to escape from the predicament he jumped upon the stand. Immediately afterwards the King came by, and stopped at the very spot where the Englishman was standing, and, to the latter's horror, began to question him in French, of which the impromptu attendant did not know a solitary word.

LOOKING a second time at his man, however, the King either remembered his face—for, curiously enough, they had once met on the road in Belgium—or at any rate recognised the fact that he was not of Gallic origin, and ejaculated in good English, "Why, you are not a Frenchman?" "No, your Royal Highness," was the reply. "Then how came you to be on this stand?" the King further queried. "*To get out of Your Majesty's way*," was the naive rejoinder. At this the King and his two companions laughed most heartily, holding their sides and almost bending double, so great was their amusement. Though not an actual eye-witness of this diverting incident, I was told the circumstances shortly afterwards by the person most intimately concerned, namely, the Englishman himself.

NOT long ago I ventured to animadvert on the ridiculous way in which the Serpollet legend was still being retailed in the Press in connection with King Edward VII. From a chance remark which greeted my ears in the Grand Palais, it is evident that the legend dies hard. As I was walking along I heard English being somewhat loudly spoken, and found that it proceeded from one of two gentlemen approaching in my direction, who was laying down the law to his companion with considerable gusto. "Ah, here," he said, "is the Serpollet stand. The Serpollet cars are driven by steam, and the King of England has got one; but real *chauffeurs*, you know, simply pooh-pooh the whole thing," etc., etc. By this time I had passed; but the incident showed unmistakably enough that the fiction of the King

owning a steam-car is still believed, even in quarters professing to be well informed. It was only the other day, moreover, that one of the Paris journals, in discussing the probabilities of there being a meeting of royal *chauffeurs* on the Riviera this winter, said that probably the King of England would come on his Serpollet!

ANOTHER curious matter is recalled by the mention of the Serpollet car. In a telegraphic account of the opening day at the Salon, in the *Daily Express*, it was stated that the Serpollet had been much improved this year owing to the fact that the boiler was now manufactured of "nickel or steel tubes." Nickel steel one knows, and steel one knows, but nickel as an alternative is something distinctly new. Inasmuch, however, as the Paris edition of the *New York Herald*, which was published on the morning of the first day of the Salon, contained exactly the same error in an advance description of the exhibits, the great discovery of boiler tubing made of nickel would appear to have been telegraphed to the *Express* the same day on the slender authority of the *Herald's réclame*.

It seems an extraordinary anachronism on the part of the Master of the Warwickshire Hunt, the Hon. Greville Verney, and of Lord North, to issue, on behalf of the committee, an intimation to the members that automobiles are not desired at the meets in future. As the hunt includes several automobilists, it has become the practice of the latter to send on their horses in advance and to follow later *en automobile*, a natural and harmless proceeding of which, it appears, certain of the more conservative members have complained; hence the committee's notice. But, now that is issued, it may be asked, *Cui bono?* The objectors have merely interfered with other people's ideas of pleasure without increasing their own. The automobilist who hunts has a perfect right to travel to the meet by any means he chooses, and it savours of a dog-in-the-manger policy to object to his driving up in a car. The opportunity, moreover, for accustoming horses to motor-vehicles would, one would have thought, have been welcomed rather than otherwise.

EFFORTS are being made to promote a syndicate in West Hartlepool for the purpose of providing a service of motor-cars between that town and outlying villages, including Greatham and Wolviston.

THE Works Committee of the Willesden and District Council, having considered the engineer's report as to cost, recommended the Council not to entertain the proposal to purchase a motor-quadracycle for the sanitary inspector. The recommendation was adopted.

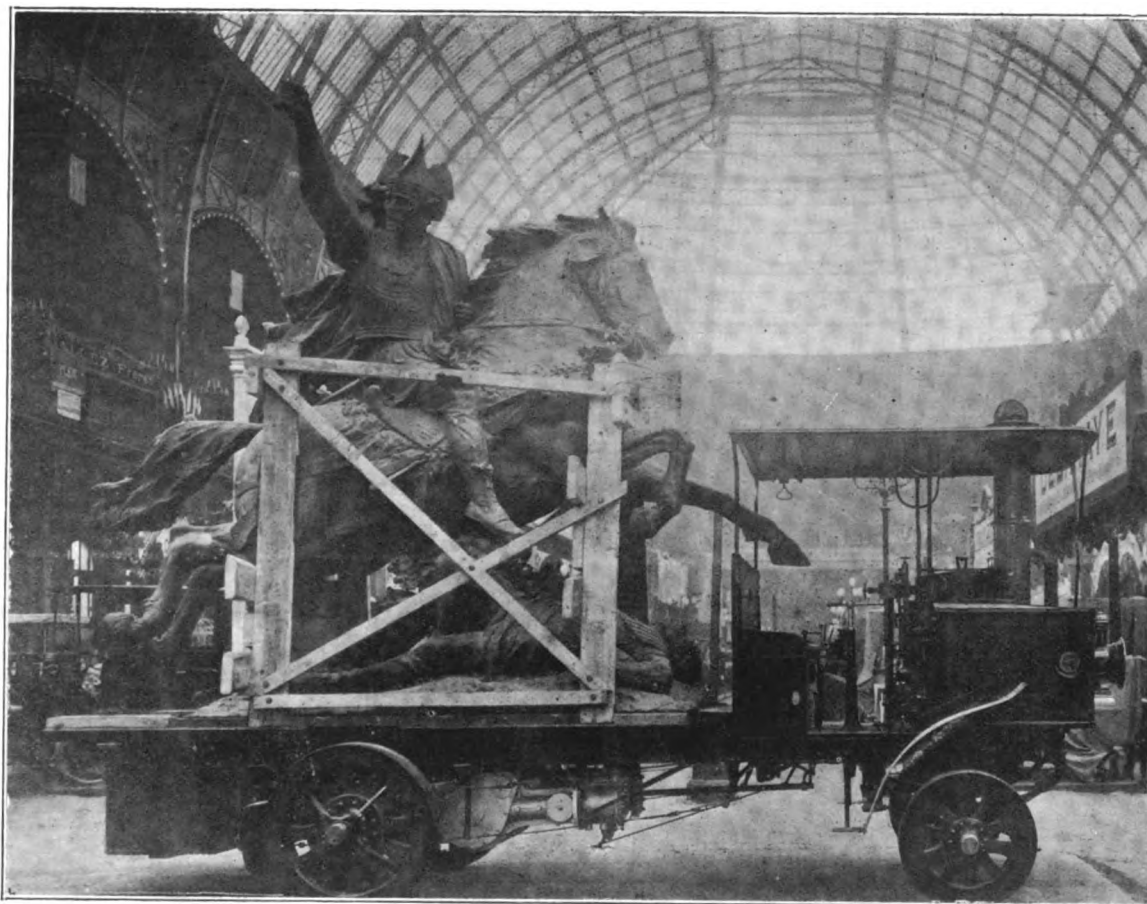
WE hear that still another new motor-car dépôt is about to be opened in Long Acre, W.C., so long the home of the coach-builders. This time it is the Wolseley Tool and Motor-Car Company of Birmingham which will be represented, the agency having been taken by Mr. C. Browne.

A BLACKBURN correspondent informs us that a company is being formed privately, with a capital of £20,000, to take up the carriage of merchandise by motor-wagon between Liverpool and Blackburn. The directors include influential commercial men of Liverpool, Wigan, and Blackburn. The proposal is to compete with the railway in the carriage of goods for which 10s. per ton and upwards is now charged. Cotton, of which some thousands of tons annually are taken to Blackburn from Liverpool, falls under this tariff.

IT is reported that the Swiss Government has decided to replace all the horse-drawn post chaises and mail coaches by motor cars. The speed at which horses could ascend the steep hills was not satisfactory, and the animals often underwent great suffering and cruel treatment. A 12 h.p. motor-omnibus, travelling from Neufchatel to Chaumont, a distance of five miles, with an ascent of over 2,200 feet, or 18 per cent., covers the distance in one hour with ease, where a coach with four horses required two-and-a-half hours at the best.

The Paris Motor-Car Exhibition.

(Continued from page 742.)



THE STATUE OF VERCINGETORIX ON A 30 H.P. DE DION STEAM WAGON AT THE SALON.

LAST week I was just able to give the readers of the *Journal* a general description of the great Paris show and a few of the most salient features in time for publication. There is, however, so much to describe which is of genuine interest that I have not yet myself been able to note it all, and so great has been the attendance that it has been difficult to get near the interesting exhibits except in the mornings. By 3 p.m. on Sunday last the large hall was closely packed, and outside the turnstiles thousands of people, marshalled by the *sergeants de ville*, were waiting their turn for admittance. The attendance must have reached nearly 40,000. Among the spectators I came across a great many Englishmen, and the exhibitors say that they are the largest buyers.

Turgan Foy is the only firm in the show to exhibit a combination of steam wagons and omnibuses, petrol cars and steam launches. The heavy steam vehicles are of course the most interesting and are deserving of special mention. There is a wagon weighing four tons and capable of carrying a load of five tons, an omnibus (Fig. 2) to carry eighteen passengers, and a tractor capable of carrying a load of four tons, and at the same time drag trailing wagons containing six tons. During the French army manoeuvres this year this tractor was the means of successfully transporting nine tons, consisting of a train of five artillery wagons, which made a total length of thirty yards. All the vehicles above described have two compound engines, one on each side. In order to do away with the need of a differential gear, the power is transmitted by two chains, one to each engine. The steam is generated in the Turgan

boiler, coal or coke being used as fuel. The omnibus will travel $12\frac{1}{2}$ miles an hour and the wagon $7\frac{1}{2}$, and the firm gives a guarantee that they will climb any incline up to 12 per cent.

Whilst on the subject of heavy traction, I may mention the wagon (Fig. 1) of the Société Nancienne, at the head of which firm is M. De Pontou d'Amécourt, whose car ran through the Paris-Berlin race with four passengers. The wagon in question obtained the gold medal in the alcohol competition, which took place under the auspices of the Ministry of Agriculture a month ago. It has been designed by M. Brillié, who also received a gold medal on the same occasion. The motor is vertical, with two cylinders and four pistons working in opposite directions. The diameter of the cylinders is 92 millimetres, and the total stroke of the two opposing pistons 170 millimetres. The engine is placed in front under the driver's feet. In the public competition above referred to this wagon carried the heaviest load (3 1.3 tons), and used the smallest amount of alcohol. Its weight is $2\frac{1}{2}$ tons, and the horse-power of its motor 10. M. De Pontou d'Amécourt informed me that he has a project on the *tapis* to run one of these wagons, fitted up for twenty passengers, in the tourist section of the Paris-Vienna race. It will certainly be a unique experience to travel from Paris to Vienna, across the Alps, in a motor-wagon.

A most original and interesting invention is the automatic change speed gear brought out by M. Mégy, already noted in the mechanical world for inventions in relation to elevators and friction clutches. M. Mégy's object is evidently to reduce the driving of a motor-car to its simplest expression, and certainly,

if his car will run satisfactorily and give the results he claims for it, he will very quickly command a large sale. To begin with—and this is but a detail—the inclined steering pillar is cleverly hinged in the centre, and has a spring catch so arranged that it can instantly be moved into a vertical position to allow the driver to easily mount up to or descend from the car. Supposing, now,

automobile if the pull is carried on far enough it also puts on two brakes; and, further, a touch on a spring and another pull reverses the car. It is not very easy without drawings to describe how this is achieved by M. Mégy. In the first place, the motor, which has a separate governor independent of the movements necessary for the starting and stopping of the car, is always in gear with a

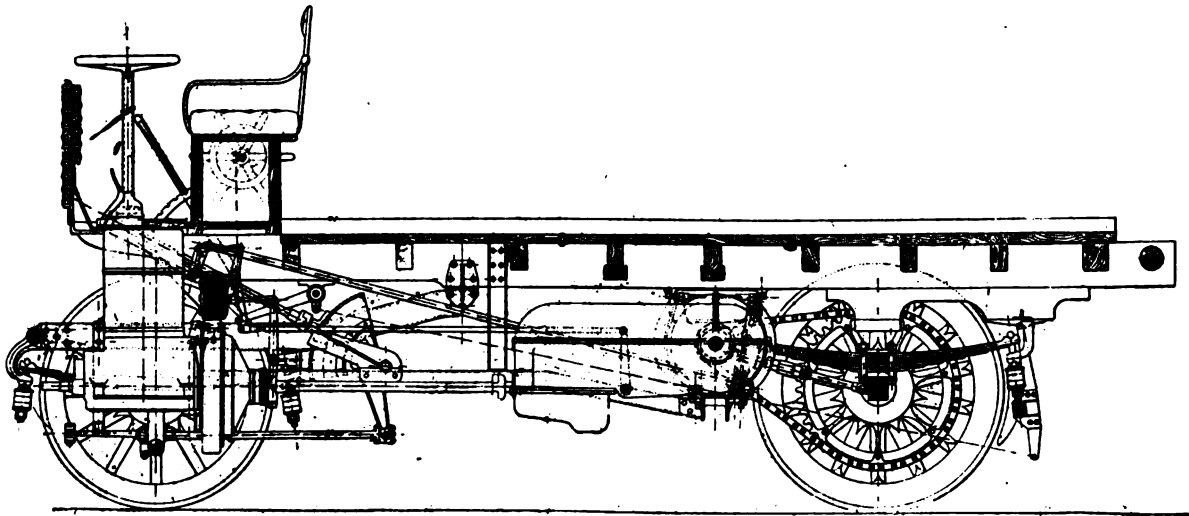


FIG. 1.—LA SOCIÉTÉ NANCIENNE'S ALCOHOL LORRY—SECTIONAL ELEVATION.

the driver to be in his seat and the motor turning, and everything ready for a start, a spring on the steering wheel is pressed and the steering pillar depressed or pushed forward, and the car starts off automatically, always on the first speed. As soon, however, as the engine, slowed up by the car starting, regains its normal speed, the second speed slips in automatically, and the third and fourth similarly as the speed of the engine

pinion on the first-speed shaft, but this pinion is free to revolve and drives the first-speed shaft only when an expanding friction band places it in contact with a dished disc keyed to this shaft. On the first-speed shaft are four other pinions always in mesh with corresponding pinions on the second-speed shaft and giving the four different ratios corresponding with the four speeds. Each of these four pinions is free on the first-speed shaft and

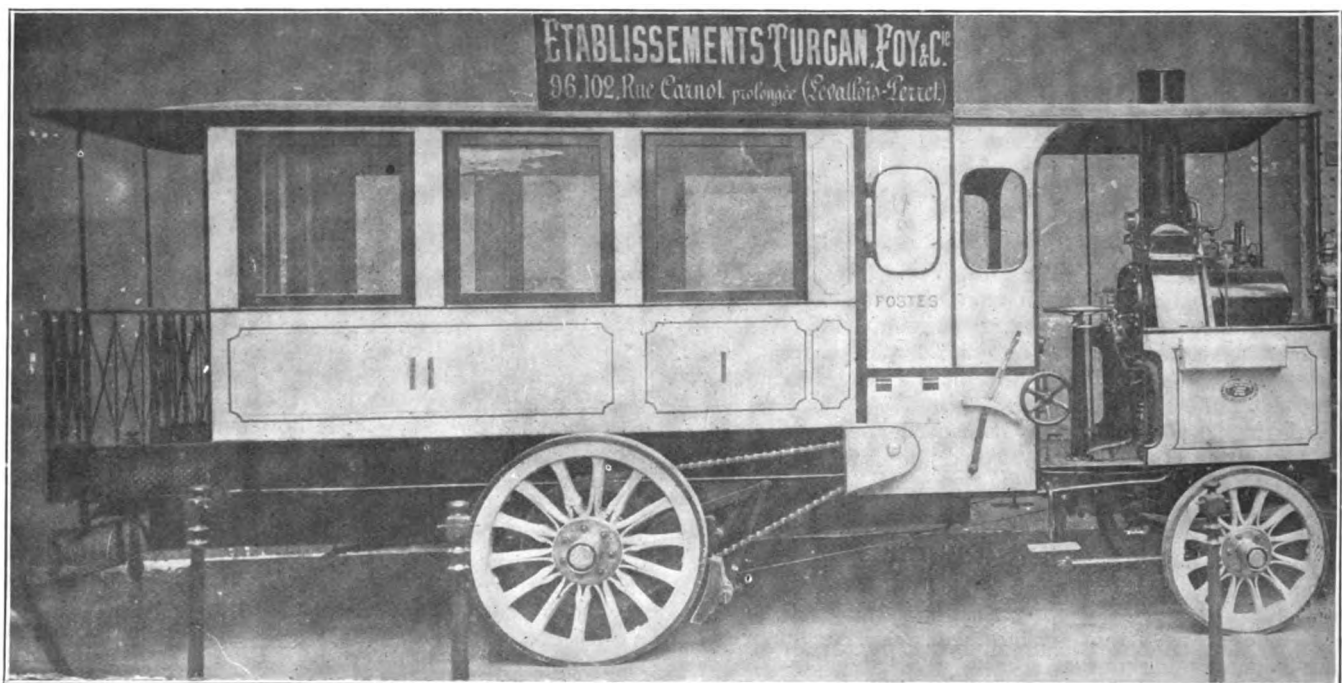


FIG. 2.—THE TURGAN-FOY STEAM OMNIBUS.

increases, without any movement on the part of the driver. Should the latter, however, desire to slacken his speed for any reason, the pulling of the steering wheel towards him is all that is necessary, and just as a driver of a hippomobile pulls the reins more and more to slow down and stop, so the pulling of the steering wheel slows down and stops the Mégy motor-car, with this difference, that in the case of the

has its dished disc to connect it by friction to this shaft. On a prolongation of the first-speed shaft a sixth pinion, working a loose pinion, which again turns a fixed pinion on the second-speed shaft, with a friction disc this time on the second-speed shaft, constitutes the reverse motion, which, for simplicity's sake, I will not deal with in this article. The first-speed shaft is hollow, and contains a sliding bar, which, as it advances, actuates

the friction gear in each of the four discs successively. On the motor is a second governor, which presses forward the sliding bar in the interior of the first-speed shaft as the engine increases in speed or draws it back as the engine slows down. It will be seen, therefore, by following carefully the above description, that the first movement of the steering wheel sets the first-speed shaft in motion, and then, as the speed of the motor increases, the sliding bar is pressed forward until, if the conditions are favourable—as, for example, on a level road—the fourth speed is reached. Should, however, a hill be encountered, directly the motor begins to slow down back slides the bar automatically till the third speed comes in, and so on. Whatever may be the success awaiting this invention in the future, it is certainly one of the most remarkable and ingenious in the whole show.

On Georges Richard's stand there is an elegant state coupé (Fig. 3) made for Mouley Abd El Aziz, the Sultan of Morocco. It is beautifully finished in dark green with moirée silk lining. Inside the coupé are seats for the driver and one passenger side by side, and all the levers, etc., are inside. At the back is a footboard for a flunkey. As regards the mechanism of the vehicle, it is the same as the Richard belt and gear-driven voiturette.



FIG. 3.—THE SULTAN OF MOROCCO'S RICHARD CAR.

Messrs. De Dion Bouton et Cie are not only makers of petrol motor-vehicles, but they are also one of the largest, if not actually the largest, makers of steam vehicles for heavy traffic in France. They have now added to their departments one for the manufacture of electric vehicles. The cars are equipped with a special form of accumulator which has been the subject of experiment for some time, and are claimed to be an advance on previous traction batteries. At the Salon they are exhibiting a double phaeton, and a *vis-a-vis*, of which more anon.

In my reference last week to Panhard and Levassor's stand I omitted to speak of the new manner in which the gear box is attached. Instead of fixing it to the frame by four rigid bolts, it is pivoted on the differential shaft and fixed to the frame in front only, in order to save it from the jerks and shocks to which the frame is liable. Rochet-Schneiders have two new types—a 6 h.p. two cylinder and a 12 h.p. four cylinder, the cylinders being 100 millimetres and the diameter and the stroke 120 millimetres. On both cars a radiator like the Mercedes has been adopted.

AUTOMAN.

To the current number of the *Engineering Magazine* Herr Paul Daimler contributes an interesting illustrated article on "The Development of the Petroleum Automobile."

THE Auto Machinery Company, of Read Street, Coventry, are issuing a revised price list and catalogue of their particular speciality, roller bearings. The bearings consist of rollers, outer bush, and sleeve (on shaft) of best steel, hardened, tempered, and accurately ground; cage ends of gun steel or gun metal and distance rods of steel, made by modern machinery, ensuring accuracy and highest possible results.

CORRESPONDENCE.

Owing to the Christmas Holidays, the next issue of "The Motor-Car Journal" will be published on Tuesday morning, the 24th inst.

MOTOR-BICYCLES FOR 1902.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I have followed with great interest the experiences related by your various correspondents on the above subject. In adding my contribution to the list, I think I may lay claim to a wider field of experience than any of your other friends, inasmuch as before I rode my motor-bike I built it. When I started on it there were no data available as to what power would be necessary, and in the endeavour to cut the weight down as low as possible I naturally made the motor too small, and had to discard it for a larger one. My present engine has a greater cylinder capacity than any bicycle now on the market, and weighs 31 lbs. Extreme attention has been paid to the balancing of the moving parts, and the result is a practically vibrationless machine.

The motor is mounted in the present Werner position, and drives the front wheel by means of a flat leather belt $\frac{3}{4}$ in. wide. This position, I hold, is absolutely the best for the motor to be placed in, as not only is the maximum cooling effect obtained, but any width of belting can be employed without fouling the rider's legs, and also all levers can be arranged on the motor itself, leaving the handle-bar absolutely free, which adds much to the appearance of a machine. By the way, I should advise anyone investing in a motor-bicycle to specify a flat belt drive, as the round band joined up with a bit of wire must be more or less a toy. If a flat belt and Harris's patent fasteners are used, the belt can be shortened by any desired amount in a few minutes.

With regard to tires, I am riding a pair of $1\frac{1}{2}$ in. light roadster Palmers, and after some 3,000 miles travelling, including a tour round the south of England, they show practically no signs of wear. I had considerable trouble at first, however, with the front wheel rim which used to get badly hammered, but after I had fitted a "Jointless triplet," rim, found considerable improvement. Two-inch tires, I expect, would give still better results, but I hesitate about getting them, for I might possibly introduce with them the side-slip evil, which I have, up to the present, been free from. Perhaps some of your other correspondents will give their opinions on this point.

In answer to "Locknut," permit me to say that on my recent holiday tour I had no difficulty in obtaining petrol in either gallon or half-gallon quantities, except at Ludlow, where they would not sell less than two gallons. It is rather more expensive in these small quantities, and on my next tour I intend to carry about two gallons with me.—Your faithfully, W. MC. W.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—"Late Electrical Engineer" complains of a difficulty in getting his mixture strong enough in cold weather. I have been troubled in the same way, but discovered last week that the stem of my handle-bar which enters the steering head was not closed at the bottom. On stopping it with a cork, the machine started off at once on first trial, and I enjoyed an hour's run. The thermometer stood at 45 deg. Fahr., and the air ring was only quarter closed. Obviously I shall have to make another opening in the uptake pipe in warm weather.—Yours truly,

T. FREDERICK HUNT.

P.S.—I should have said my machine is the Werner (1900).

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—It was so obvious that the method I suggested of testing the belt grip of motor-bicycles was only intended to be a rough and ready one, and not scientific, that I do not think Mr. Craig need have wasted paper and ink about the matter. As a matter of fact, in suggesting the application of the tensile force (necessary to make the belt slip) from the circumference of the large pulley, I did an injustice to my own argument—not to the system of belt-transmission. I think my point still stands, despite Mr. Craig's efforts to upset it, namely, that a bicycle motor will not usefully develop more power than its belt can transmit.

Mr. Craig has misconceived my attitude towards motor-cycling. Those who are fortunate enough to get hold of a reliable machine, and who will use it in moderation and on good roads, will get much enjoyment out of it. I fear, however, that many of the present machines do not quite come up to my own standard of reliability. Perhaps I am not so easily satisfied as some of your correspondents, who have to call in the assistance of a kettle of boiling water to start their carburettors and yet seem to think they have got hold of a good thing. Personally, I have gone in for a Holder, which has yet to prove itself.—
Yours truly, W. E. TESCHEMAKER.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Would not a flat crossed leather belt, one inch in diameter, be a practical method of transmission in the standard Werner bicycle? This could be more securely fastened than the V-shaped and round belts, and give the maximum amount of grip. It would take up rather more room than the usual pattern, but this would not matter much in the case of the standard Werner, as there is plenty of room in the front position of engine, and there are no riders' legs to consider. The circumference of pulleys would, of course, be flat or slightly convex and flanged, and the engine would have to be reversed. I don't know whether this reversing of engine would increase the vibration much.

It would be interesting to know if any readers of the *Journal* have ever tried this method. It succeeds very well with the small Benz car.—Yours faithfully, ROBT. H. ARMSTRONG.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—We see with great satisfaction and pride that our humble names and our little machine do so much to fill the columns of the *Journal*, which you publish with such talent and taste. Permit us also to contribute to your columns and for the first and last time break our silence. Five years ago we produced our first machine, which we baptised "Motocyclette." We received rather a cold reception from the world of automobilism, and everyone predicted its very short existence. We had the rashness to think the contrary, and without any help, without "seeking capital," we risked all the fortune we possessed to improve our motor-bicycle. We worked hard, we went through all sorts of difficulties, and suffered the injustice and scepticism of the whole world alone. The years passed and finally success came. We have sold more than four thousand machines, and won prizes in all big races; amongst others, Paris-Berlin, Paris-Bordeaux, Paris-Roubaix and the Tour of Holland. We received a gold medal at Exhibition of 1900, for having accomplished, without the slightest repairing, 600 miles round the lake of Daumesnil, under the constant control of a special technical commission. Finally Mr. Egerton crossed England and Scotland on one of our machines. But, apart from all these prizes and results, we are conscientiously proud of having been the means of considerably advancing automobilism. Hundreds of big firms, both in Europe and America, actually follow us. If the little Werner had not existed, it is more than probable there would not have been any motor-bicycles. We write this in no boasting spirit, but we wish to point out the fact that we were the first inventors of a light motor-bicycle, and that all others are our followers. Now we want to know who of these followers has got in front of us, and which motor-bicycle has proved itself superior to ours? Very often in the columns of the *Journal* the name of a Belgian motor is mentioned. We would like to know the name of a single official race (not of a thousand miles, such as we have run in, but simply of a hundred miles) in which this machine succeeded in winning a prize. What we do know is that in all big official races—as Paris-Bordeaux, Paris-Berlin, Tour of Holland—at the start there have been a dozen different types of machines, and at the end only Werners. May be there are some official races of which accounts are not published; if so, we should be glad to hear of them.

We have read with great pleasure courteous criticisms of Messrs. Benett, Warren, Konett, Fawcett, and others, and we have noted with attention their remarks. We like the criticism,

we like the argument, and we know better than anybody the proverb:—

"C'est celui qui ne fait jamais
Rien qui ne le trompe pas."

But we feel quite unable to answer anything to such a letter as M. Teschemaker's. There is no argument, no rational criticism, nothing but the evident wish to speak unjustly of something and do somebody harm. We can only answer such a letter by another French quotation, which is our motto:

"Bien faire—et laisser dire."

We may add, in spite of M. Teschemaker's advice not to buy motor-bicycles, we obtained an immense success at the recent English Show and also at the Salon in Paris. Practically all our output for 1902 is sold in advance. Being possessors of all records of speed and reliability, it seems we possess now a record of popularity.—Yours faithfully,

MICHEL AND EUGENE WERNER.

Paris.

THE SMART SURREY POLICE.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Your correspondent "Flaneur" voices the desirability of our knowing who are the actual persons who covertly wage war on automobilism through the action of the police. All of us must agree with him. I believe I can indicate one person who is responsible for the vindictive treatment of motor men in one certain district, and no doubt a black list of our enemies can easily be formed by co-operation. I, for one, would be delighted for such a list to be formed, and for these persons to be made to sweat when the time—our time—comes. If I am myself called vindictive for this, I reply that gratuitous harm is done to us, most of us innocent, progressive-minded, well-wishing people, by our persecutors; and I desire to point out that for the most part our persecutors are narrow, unprogressive, and unjust-minded people who are in reality enemies of society, and that it is to our interest as a nation that such people should be pushed under and deprived of influence. We motorists are getting all the persecution we will take; and the knowledge by all of us as to who in each district are our enemies would give us collectively a tremendous weapon.—Yours truly, ODI.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—If your correspondent, Mr. S. W. Fuller, will drill a hole in the side of his exhaust box and turn his steam pipe through this, so that the steam discharges into the silencer, he will get over his difficulty. I tried this first in 1897 and have always found it to answer. The steam becomes super-heated, and issues from the silencer in the form of an invisible gas.—
Yours truly, A. J. ALDRED.

MOTOR-CARS FOR THE TROPICS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Referring to the letter of "P. Fowle" in your issue of 14th inst., and the statements I have recently seen as to flash point of petrol and its unsuitability for use in the tropics, possibly my experiences may be of interest to your readers. I have been conversant with gas engines from 1876; naphtha, gasoline (or petrol) from 1889, English, American, and German, and have driven motor-cars abroad in the tropics since 1896, and in England, France, etc., from 1900. I speak from every day practical experience in tropical weather as high as 116 degrees Fahr. in the shade. There is no trouble or difficulty whatever in carburation, or in overheating of cylinders. My Benz car or De Dion tricycle were in daily use, and I never experienced trouble from use of petrol in any form. I also used, from 1882 up to 1900, gasoline largely in stationary and launch engines, and this mixed with petrol works well. Also gasoline and benzoline mixed in equal proportions works well. In fact, since I have been in Europe it seems to me that carburation is here far more fickle. My 9½ h.p. Decauville never refuses to start, hot or cold, but my "Progress" car, driven by De Dion engine, like all De Dion engines, was very tricky. I am a mechanical

and electrical engineer, and consequently very dissatisfied (as any electrician must be) with the De Dion ignition. Mechanically and electrically it is wrong, and novices will always have trouble until it is altered. What is wanted is, instead of trembler, a good rubbing contact (as Bassé and Michel), a trembling coil, E.I.C. plug, and good flexible, highly-insulated wire. Result, no more trouble.—Yours faithfully, F. H. H.

PILOT BURNERS FOR LOCOMOBILES.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I seem to remember having seen a letter some time ago in your paper, but cannot now find it, as to a way of fitting a pilot burner, independent of the main burner and automatic cut-off arrangement, so that on arriving at a place where one intends stopping two or three hours, this pilot burner could be left alight, and which, though it would not blow out, would not increase the steam pressure or let it run down very low. At present I find myself hurrying back to the car, and probably finding the steam pressure gone and the awful torch necessary. If any of your readers have tried such a device, would they say how it is arranged.—Yours truly, Loco.

A QUERY RE STEAM CARS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—In answer to "Naval Engineer's" query of November 30th, re exhaust steam showing from Serpollet cars, I may say that these vehicles will run as far as the supply of oil and water will take them on a fairly level road without showing steam, but on ascending a steep hill they use a lot of steam, and sometimes there is more than the condensers can cope with. On attaining the level again, however, it will be all right. If travelling in a gale, sometimes the wind will cause the lamp to burn badly, and fail to heat the tubes of the boiler sufficient to lash the water into steam, then it will occasionally throw off wet steam, but very little. Taking the Serpollet all round, it is an excellent car as it is practically noiseless and has scarcely any vibration. Its speed is as good as any one could wish for, and there is no danger of explosion.—Yours truly, CHAUFFEUR.

TURNING CORNERS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I notice in your issue of December 7th that "Flaneur," referring to the article in the *Strand*, states that the illustration of the motor-car rounding a corner on the outer wheels with the inner wheels off the ground is wrong, and that a car would turn on its inner wheels. Surely your statement is incorrect, for why does one, when rounding a corner on a bicycle, lean inwards? Surely it is to counteract the tendency to continue in a straight line? Again, on a track of any sort, or even a railway, the corners are banked so as to tilt the machines towards the corner, which acts like the leaning inward on a bicycle if the tendency is to fall inwards (towards the corner), which is only a continuation of going round on the inner wheels; surely, banking as made now would tend still more to overturn the machines. I saw my theory borne out last holidays by witnessing a runaway dogcart overturn outwards whilst turning a corner. I hope I have made myself clear to you, and I should like to know whether I am right.—Yours truly, H. TALLENTS.

QUERIES RE IGNITION.

TO THE EDITOR OF *The Motor-Car Journal*.

I notice in the *Motor-Car Journal* of November 30th, a letter from "Ten Miles from Anywhere" under the above heading. I do not, of course, know whether your correspondent's troubles are chronic or only recently developed, as he gives no particulars, but there is one cause of electrical troubles which I have found is more prevalent in De Dion voiturettes than in any other make of car. It is a simple matter, seldom noticed and very easily remedied, but makes a wonderful difference in the running of a car. In the course of my business as a motor repairer, but more often when having been sent for on consultations, I have found many cases where this has been the sole trouble.

If any owner of a De Dion voiturette who has an apparently mysterious series of troubles, generally missing fire or sometimes stopping altogether, arising from what seems to be plug sooting, and who has tried smaller quantities of lubricating oil, better quality of ditto, new plugs, etc., all with apparently temporary good results, only to find the trouble again arising within perhaps a mile or less, will take off the induction coil (I am referring to the long, round De Dion pattern), he will find that the brass band on the end of the coil furthest away from the plug wire terminal is fastened by means of a screw, about half an inch long, to the internal economy of the coil, and that this said screw has worked loose. It will be found that the tightening of this screw will entirely do away with his troubles. After tightening, to prevent the trouble occurring again, it is well to solder the head of the screw to the brass band; this will prevent it unscrewing from the vibration of the vehicle. There are also some smaller screws in both bands, but these are of little consequence.

It will be well also for those whose cars are not of this type, but in which the De Dion motor is used, to make the same examination, as I have also found many of these to be affected in the same way. In some cases also of two-cylinder motors where the De Dion coils are used, I have found one of the cylinders not doing its work in a proper manner from the same cause. This defect, though so easily found and remedied, has caused, within my own personal experience, several owners of cars to be so disgusted with the sport of motoring as to be inclined to throw both the car and the sport over entirely, and no doubt there are many more outside my experience who have felt the same and have been inclined to give up what is otherwise a very reliable and handy little car in favour of some other vehicle or form of locomotion.—Yours faithfully,

C. H. GUEST, M.I.M.E.

"A WOULD-BE PURCHASER" writes:—"I should be much obliged if any of your numerous readers could give me their experiences with petroleum oil cars. What is the cost of running per mile compared with petrol cars? Which is the most popular make? etc."

MR. A. L. BENETT writes:—"Would you allow me to correct the letter you printed in the last issue of the *Journal*. By a printer's error I am made to say, "I will *not* repeat that I am very satisfied" (with the Werner machine). It should be "I will *now* repeat," etc. This alters the sentence considerably. Another and less important printer's error is "*voire l'obstacle*," in place of "*boire l'obstacle*," as it should be."

WHY did the carburettor (carber-hit-her)?—Because the engine mis-fired.

DURING the month of October, automobiles and parts thereof to the value of £11,250, were exported from the United States, bringing the total value of such exports for the first ten months of 1901 up to £52,507.

THE German Emperor has founded a prize, consisting of a handsome vase, for the best spirit-driven motor-car suitable for agricultural purposes. The conditions for the competition will be decided next February.

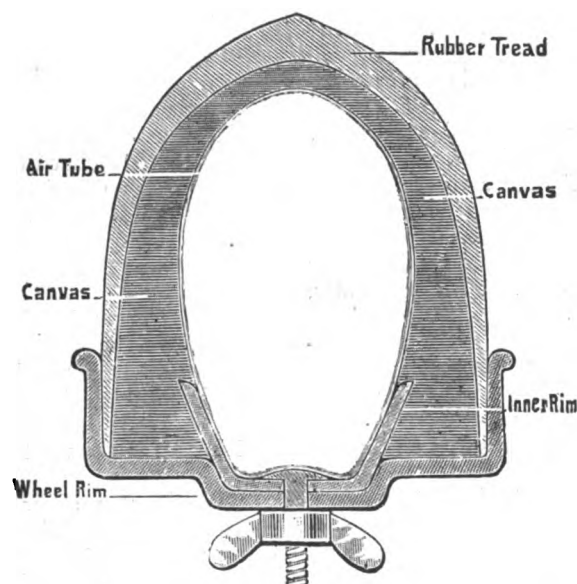
MESSRS. JOHN ROTHWELL AND SONS, Knowsley Road, St. Helens, Lancashire, have been appointed district agents for Messrs. Carless, Capel and Leonard, and motorists can now there obtain petrol of the well-known brand.

BEACONSFIELD, Bucks, which is on the main road between London and Oxford, has hitherto been without a motor-car repairing establishment. The long felt want has at last been supplied by Mr. Jose Jackson, who has opened extensive premises where repairs are undertaken, and petrol, oils, and accessories can be obtained.

A MOTOR bicycle, in which a $1\frac{1}{2}$ h.p. De Dion motor is carried below the main cross tube, has just been put on the market by Mr. J. N. Birch, of the Motor Works, Nuneaton. The power is conveyed to a pulley on the rear wheel by means of a belt. The frame of the machine is of strong construction, the front forks being duplicated.

THE "HOLBORN" MOTOR TIRE.

THE accompanying illustration shows a section of the new motor tire which has lately been put on the market by the Holborn Tyre Company, of 35, Bream's Buildings, Fetter Lane, London, E.C. As will be seen from the section, the form of the tire is quite different to all preconceived ideas of motor pneumatic tires, and is based upon the fact that the conditions under which automobile tires run are different from those which exist in the case of cycles. In the latter case the total load is light, and, therefore, the tire has to be thin at the sides in proportion to the tread, which latter must be thickened to resist punctures. With the motor-car it is otherwise. The tread of the tire may, according to the Holborn Company, be comparatively thin, because punctures are rare. It is the bending of the fabric at the sides which causes the trouble, owing to the disintegration of the strands. The Holborn tire is secured to the rim by fly nuts and bolts, the latter pulling down into position an inner rim made in four sections,



and at the base the sides are thick, tapering towards the tread so far as the fabric is concerned. On the other hand, the rubber is thicker on the tread and thinner at the sides. The result of this is that the movement of the fabric is spread over a larger area, and does not take place exactly at the rim, as in the case of thin-sided tires subjected to the weight of a car. A number of claims are made for the new tire, notably the narrow tread, the reduced liability to puncture, and the ease of detachability. The tire is made in a variety of sizes ranging from 26in. by 2½in. for light voiturettes to 28in. by 4in. for heavy cars.

WE are informed that Mr. J. W. Simpson, of 9, Broad Street, Margate, is now in a position to undertake repairs to motor-cars. Mr. Simpson also stocks petrol, oils, greases, etc.

MESSRS. WILLIAM LEA, of the Motor Car Depot of Liverpool, inform us that they supplied the Milwaukee steam-car fitted with Clarkson's appliances, referred to in a recent issue as purchased by Dr. Allison.

WE learn that the agency for Great Britain for the Auto-Incandescent system of ignition for petrol motors has been acquired by the Brush Engineering Company, Ltd. (automobile department), Donington House, Norfolk Street, Strand, W.C.

WESTMORLAND COUNTY COUNCIL has been considering the advisability of placing caution boards at dangerous junctions, corners, or other places on the main roads of the county, requiring drivers of all vehicles to drive slowly. Sub-committees have been appointed to inspect and report upon various places where, in their opinion, such boards should be fixed.

CONTINENTAL NOTES.

BY "AUTOMAN."

THE sea was really very unkind to the large party of automobilists who took advantage of the Club's cheap ticket, on Friday last week, to cross the Channel and attend the Paris Automobile Show. It was bad enough to have read the announcement in the *Daily Mail* that the crossing would be "dangerous," and I believe the fair partner of at least one prominent member of the Club let her lord and master face the danger alone. When, however, the party reached Folkestone the appearance of the jetty was sufficient to make the boldest sailor shudder. I quite believe that all we wanted was somebody to start back for us all to have cut and run when we saw the angry billows dashing through the iron-barred openings in the pier. But no one had the pluck to turn back, so we all trooped on board, and pretended to look pleased. But, oh! what dreadful plight we were soon in, and what a disgrace to automobilism to see the drawn yellow faces when we reached Boulogne! The groans of one of my friends and colleagues would have moved a heart of stone, and more than one prominent dealer in motor-cars looked like a ghost in an astrachan collar. On deck, too, the sight was one never to be forgotten, many well-known faces in the automobile world being discovered between sou'-westers and waterproofs borrowed from the sailors. However, if the crossing was bitter, it was also short, and soon the Paris train held us nearly all. I say advisedly nearly all, for several of the party lingered too long over the delights of the "buffet" at Boulogne quay station, and had to charter carriages to catch up the train at Boulogne town station, where it always makes a short stop.

THE train from Boulogne to Paris is a "corridor," and one can therefore move about and see one's friends en route. The circulation was incessant, and this brings me to the point I had in view when I began to tell the readers of the *Journal* about the trip to Paris. In a compartment, not a hundred miles from the one in which I found myself, a discussion was going on over my poor unworthy body. It seems—not to be indiscreet—that a certain prominent manufacturer, Mr. Austen of the Wolseley Company (not to name him), takes umbrage at some of my remarks in these columns last week with regard to my charges against the English manufacturers of copying French cars instead of striking out for themselves and creating improvements. Said Mr. Austen, "We were the first to advocate equal wheels and many other improvements, and we claim that our transmission loses less in friction between the engine and the road wheels than any French car. We do not try to take our power round corners, we take it right to where it is wanted in a straight line, and I am going to write to 'Automan' and tell him what I think of his remarks."

I WOULD welcome any correspondence or criticism from Mr. Austen on this subject, because I think it would lead to a good result, and wake up the trade. But Mr. Austen must remember, however, that an exception proves the rule, and I was inveighing against the trade as a whole and not against individual manufacturers. I am quite prepared to admit that his car is an exception of which he may be justly proud, but I would go a step further and humbly suggest to the consideration of Mr. Austen that if he is correct in his opinion—and I am not going to doubt it—that the loss in transmission in the Wolseley car is less than in the Panhard and Mors types, then his firm can just as easily win the Gordon-Bennett and Paris-Berlin races as I can write my Continental Notes. The very wise limit of weight makes successful racing a question of loss in transmission pure and simple, and if the Wolseley can pull off these events, their makers would have not only the English trade—I hear they have got a good slice of that already—but the world's trade in their hands, and bring the orders to our shores that flow at present into the hands of Panhard, Mors, Renault, and other Continental firms.

WHILST on the subject of racing, I want to endeavour to kill what is really becoming a popular error, and a theory that has no foundation in fact. It is said that racing produces only cars that are made just strong enough to stand a race, to hold together, so to speak, and then to be liable to fall to pieces very shortly after. Nothing could be farther from the truth or more ridiculous. A car that is to go from Paris to Berlin at an average speed of forty odd miles an hour must essentially be strong, and if it will stand that it will stand anything. Charron's winning car of last year, Fournier's of this year, the Renaults, and a host of others I could name, are a living testimony of this fact, and yet the same old story is dished up year after year and the wiseacres shake their heads and trot it out whenever road-racing is mentioned.

THE German Ministry of Finance has decided that touring motor-cars crossing the German frontier shall be free from customs duty, as also the petrol which they are carrying for their own use. In future a trip into Germany will consequently become much simpler, and this wise removal of all annoying and useless restrictions will take a large influx of tourists into that country. It is to be hoped that other foreign nations will follow this liberal policy.

LAST week I finished my Continental Notes with the short account of Rigal's world's record of the flying kilometer in 33 secs. He is now figuring in Barnum and Bailey's show, which is at present on a visit to Paris, and is located in the Galleries de Machines of the Exhibition of 1900. A straight track right across the arena has been laid for him, and, all the lights being lowered, he dashes through the arena at between sixty and seventy miles per hour with the limelight following him. Rigal has a three months' engagement at £200 per month.

AN account of a new and wonderful invention is going the round of the French press—a motor without any exhaust. It purports to be (I give the story for what it is worth) the outcome of a new chemical process by means of which the oxygen required for the explosion in a petrol or spirit motor is provided without the assistance of the atmosphere, and by which the carbonic acid gas produced by the explosion is also absorbed. It is said that exhaustive and successful trials have been made by naval engineers. The importance of such a discovery would be very great, and such a motor would be suitable for many applications where at present its exhaust is a difficulty. On submarine boats, notably, it is impossible to use petrol on account of the waste gases which would vitiate the air.

THE day before the opening of the Paris Automobile Show the general meeting of the A.C.F. was held, and it was finally decided to incorporate the Yacht Club with the A.C.F. and take in its 300 members. Two reasons have led to this step being taken. The first was to put a little life into the Club, for, notwithstanding the fine situation and the magnificent accommodation provided by the building in the Place de la Concorde, it was really the most dead-and-alive place in Paris. With the entrance of the Yacht Club will come gambling, and without gambling no Paris club gets any attendance; so it is believed that animation will follow the gambling, and, in addition, a substantial profit to the Club from the commission always charged for the benefit of the house—this is the second reason; for the Committee foresee the time when the influx of new members will cease, and then it will be difficult to make both ends meet and continue the campaign of encouragement to the trade which was the object of the initiation of the A.C.F.

THE King of the Belgians attended the concert at the French Automobile Club, and has paid several visits to the exhibition at the Grand Palais.

MESSRS. G. F. HEATH AND CO., 83, Great Colmore Street, and 123, Holloway Head, Birmingham, have been appointed sole agents for new type Werner motor-bicycles in Birmingham. Messrs. Heath will keep a full stock of all Werner parts and accessories.

THE WAR OFFICE MOTOR-LORRY TRIALS.

THE trial of the military self-propelled lorries at Aldershot was continued on the 10th inst. The route to be covered extended to 31 miles 7 furlongs, and this was completed by the Foden wagon in 5 hr. 21 min., the Thornycroft standard wagon being 18 min. behind it. The Straker was a long way to the rear, and came in a few minutes ahead of the Milnes. All the lorries experienced great difficulties on account of the soft and muddy roads. The Thornycroft new-type vehicle did not go out. The principal feature of the trial on the 11th inst. was the bursting of the steam pipe on the Straker vehicle, and the competition is practically now between the Foden and the standard Thornycroft. On Thursday, the 12th inst., tests were made as to which lorry could cover the required distance (thirty-two miles) with the least fuel. The Foden was an easy winner by over 200 lbs. of coal.

The run, on Friday, the 13th inst., which was of special interest owing to the heavy gradients included in the route, was more favoured in the matter of weather, the roads, however,



THE FODEN WAGON BREASTING A STEEP HILL.
(Photo by Mr. H. G. Burford.)

being somewhat greasy after the heavy rains of the previous day. The first and worst hill to be climbed was that over the Hog's Back from Wanborough to Puttenham, a grade of 1 in 8 up, and 1 in 7½ down, with a fairly good surface. Arriving there somewhat too late, we met the Foden lorry going at a good pace to Compton, having been third in the climb, a minute behind the ordinary Thornycroft, and one and a-half behind the Straker. The Milnes, however, though slower on the climb, was ahead at Compton, and gained several minutes there, through not needing to stop for water. Taking a short cut, we met the Milnes again, without a trailer, at Godalming, which it reached at 10.49, followed twelve minutes later by the Foden. Several cars, with Messrs. Claude Crompton, J. H. Knight, H. G. Burford, and others interested, arrived about the same time, and following in pursuit we overtook the Milnes beyond Milford, packing a cylinder joint that had blown owing to a passenger taking the helm and permitting a back fire. This was soon done, and two miles further on the three-mile ascent of Hindhead had to be negotiated. The Milnes arrived first at the bottom, but after taking up our station at the steepest grade near the top, 1 in 11½, we waited some time for the first arrival, which proved to be the Foden, taking the hill in good style. The Milnes, which seemed to be "missing" somewhat, was rather delayed, but soon

arrived and tackled the steep pitch at a fair speed. A quarter of an hour or so elapsed before the Thornycroft turned up, and she had to pause for steam on the grade, but started comfortably on 1 in 11 after less than half a minute. Rumours of the Straker being delayed at Godalming arrived, but returning that way we met her four miles behind, going strong, being, apparently faster on some of the hills than her competitors, and we were unable to get particulars of the cause of her delay. Later inquiry showed that the Foden arrived home first with over half-an-hour to spare. Much local interest has been shown in the big tractors, the more so since horse haulage is expensive in the neighbourhood, and it may be hoped that they will give a stimulus to the adoption of heavy motor-vehicles generally by brewers, contractors, etc., in these parts, as we have had several requests for information on the subject from such. The following shows the relative merits of the two first types in Friday's work:—

	Time.	Fuel.	Water.
	H. M.	lbs.	Gallons.
Foden	5 27	402	284
Thornycroft ...	6 4	588	401

The most remarkable incident of the last of the series of trials undertaken on Saturday last, was the narrow escape one of the vehicles had from plunging over a bridge into a river. The route mapped out for the trial was thirty-four miles long, and led over the River Till by an old bridge. The approach was by a sharp rising road with two quick curves in it, the bridge running almost at right angles to the last curve. The first three successfully negotiated the spot, but the fourth, Thornycroft's rear-driven wagon was not so fortunate, the upward curve being taken too wide, with the result that one of the fore wheels collided with the bridge side, threw it down and dropped over, the engine being stopped in time to prevent it from plunging down below. With the aid of strong planks and jacks the fallen part was raised and got back into the roadway, and as an examination showed that no serious injury had been sustained, the journey was continued. The day's work resulted in another victory for the Foden wagon, which started second but finished half-an hour ahead of the next best competitor, the Thornycroft standard wagon, the following being the comparison:—

	Time.	Water.	Fuel.
	H. M.	Gallons.	lbs.
Foden	5 17	256	402
Thornycroft ...	6 1	393	667

This week the competing vehicles have been subjected to speed trials, manœuvring tests, rough country trials, hill-climbing and brake tests in the neighbourhood of Aldershot.

"FROM start to finish," says *M.A.P.*, "a depressing gloom has surrounded 1901. Motoring by day and playing Bridge at night are the only pleasures left."

WE are informed that the Caledonian Motor-Car and Cycle Company, of 265, Union Street, Aberdeen, have again been appointed sole agents for the sale of Peugeot motor-cars in Scotland for the season 1902.

AN automobile agency and repairing depot has been opened at Street Farm Works, Moulsham, Chelmsford, by Mr. H. Greiner, who has been till quite recently an employé of the Daimler Company at Cannstatt.

C. H. GUEST, LIMITED, has been registered with a capital of £2,000 to take over the business of an electrical and mechanical engineer, car builder and cycle manufacturer, carried on by C. H. Guest at Draycott Mills, Draycott, Derby. The first directors are M. J. Astle and C. H. Guest.

THE Steam Motor Construction and Maintenance Company, Ltd., has been registered with a capital of £5,000 to adopt an agreement with W. Ingram-Lyon, and to carry on the business of manufacturers, hirers, and vendors of, and agents for, motor-cycles, motor and other carriages, etc. The registered office is at 25-29, Coleman-street, E.C.

DIEPPE TO ROUEN AND BACK.

THE other Saturday, when the morning dawned, weather conditions did not seem to point to the carrying out of our pre-arranged programme; however, as the day advanced these materially improved, and by 2 p.m. it had become quite a genial autumnal day, with a pleasant south-east wind blowing.

So we turned out of its *garage* the trusty "Diana," boarded her (four of us in the party), and headed down the Rue Général Chanzy for Arques la Bataille. Fifteen minutes found us at this historical spot, famous as the scene of the great battle fought between Henri IV. and the Duc de Mayenne, in which the latter suffered a disastrous defeat; the charming old château still stands picturesquely placed on the summit of the hill to awaken memories of the past. Leaving Arques behind us we sped on through Martigny to Torcy; from this point, a distance of eighteen kilometres, we had on our left the majestic Forêt d'Eau. Magnificent in its autumnal glory, the sight was one that must ever remain in our memories, as it is not often that we have such a glorious one afforded us. We bowled along at a comfortable 25 kilometres an hour through St. Hellier and Pellincombe, till we drew up at the Hôtel de la Poste at St. Saens, where we refreshed both "Diana" and ourselves, having, as usual, found an obliging host. Like all the French villages the same peaceful calm reigned supreme, and, beyond awakening a curious inquisitiveness on the part of the villagers in the mechanism of the "Diana," nothing of interest occurred. It was just 5 p.m. when we left St. Saens, our next point being St. Martin, and then Rocquement. The light was just waning when we turned into the main road, and the ride can be better imagined than described, as we had 15 kilometres of a run between avenues of trees rich in the golden foliage so peculiar to the Normandy elm. All went well till we were within 10 kilometres of Rouen, where we found they had had some very heavy rains. As a result it was difficult travelling, and as we approached the entrance to the town we experienced a lot of trouble from side-slip. However, we landed safely at the top of the Rue Jeanne d'Arc, and it was but the matter of a few seconds to find ourselves at the Hôtel de la Poste (an hotel largely patronised by automobilists). Here we secured our rooms, and after enjoying the pleasure of a well-served dinner, had a stroll through the town in the moonlight, which gave a most picturesque effect to the graceful spires of the several churches and towers which abound here.

It may be of interest to motorists to know that the designation *chauffeur* first originated in Rouen, but it was then applied to a different class of men to those at present thus named. At the end of the eighteenth century a band of brigands infested Rouen and Vicurly, and it was their practice to submit their victims to torture by burning the soles of their feet to make them divulge the hiding place of their treasures; they were known as *chauffeurs*.

The next day, after spending some time in sight-seeing, we brought round "Diana" to the hotel, wished our genial hostess good-bye, and made our way along the Rue de la Bourse to the route du Bon Secours. Without any exaggeration whatever the view we had whilst ascending this hill was simply enchanting. I cannot attempt to describe the beauty and the immenseness of the panorama; I may be wrong, but I should say it has not its equal—had we seen nothing else that day we should have been amply repaid. We regretted that time pressed and we had no alternative but to speed on if we wished to reach our destination by nightfall. The church of Bon Secours should be visited, as it is certainly one of the sights of Rouen, and a walk should be taken on to the hill near by to get the view of the surrounding country, which presents a most interesting spectacle on a fine day. We were pushed for time, so we put on *grande vitesse* and headed for Bosc, some 9 kilometres on the route. Passing through this village, our next point was Fleury-sur-Audecle; it was nearly 1 p.m. when we made this

village, and here we really were in some magnificent forest scenery. Passing on to Lyons la Forêt, 5 kilomètres from Fleury, we were in the heart of the forest, and what a sight! How we appreciated the advantages of a motor-car—for it is quite certain that by no other means of locomotion could we have passed through such delightful scenery in such a short space of time. For 15 kilomètres we passed along the roads which abutted the Forêt Nationale de Lyon, the kaleidoscopic tints on the trees exceeding in beauty those of the Forêt d'Eauv.

When we joined the National route, we were just 13 kilomètres from Gournay-en-Bray. It was close upon 2 p.m., and the keen, crisp air had sharpened our appetite, so we urged on our car and twenty-five minutes saw us safely before the Hôtel du Nord, Gournay. There we found an excellent lunch, to which we did ample justice. After lunch we oiled up and watered "Diana," and at 4 p.m. set out to knock off the seventy-five kilomètres still to be covered, and this along the excellent National roads. It was just 4.30 p.m. when we ran into Forges-les-Eaux (the Harrogate of Normandy). We did not stay here but kept on for Neuchatel-en-Bray, which we reached at 5.15 p.m., having covered the 35 kilomètres in the hour and a quarter.

A little halt was necessary here to light up, also to oil and water, so we drew into the yard of the Hôtel du Chariot d'Or, where we found ample convenience for motorists. There we had our "five o'clock," as our Gaelic neighbours call it. It was now 6 p.m., and dark, so that our final spin home had to be made under less favourable conditions than the earlier part of the run. However, we found it distinctly exhilarating; and it was just chiming 7.15 p.m. when we pulled up at the house in Dieppe, having again covered the 35 kilomètres in the hour and a quarter. People rave against motor-cars; surely it must be ignorance, otherwise they would not. Had it not been for our trusty "Diana" we could never have beheld all the delightful scenery which we did, for in the day and a half we covered quite 230 kilomètres, and this, be it known, without the slightest hitch in the machinery. Everything went perfectly, and at the finish of our journey we felt infinitely better in health than we did at the start.

"SYGOGNE."

HERE AND THERE.

AN attempt is being made in Chester to form a company to promote a motor-car service for the ancient city, and much local interest is naturally being taken in the scheme.

THE Hon. C. S. Rolls was to have made a balloon ascent in Paris on Sunday last, but, owing to the inclement weather, the idea had to be abandoned.

THE President of the Board of Trade has consented to receive a deputation from the Roads Improvement Association in reference to light railways on public roads.

ON another page we reproduce a photograph of Mr. S. T. Davis, jun., Treasurer of the Locomobile Company of America, on his 8 h.p. racing Locomobile. At the recent race meeting on the Ocean Pathway, Brooklyn, Mr. Davies established a new record for steam cars, covering a mile with a flying start in 1 min. 15 sec.

THE Robin Cycle and Motor Works, 755, Wandsworth Road, S.W., have recently been greatly extended, and ample space is now available for the storage and cleaning of a number of cars. When we called a few days ago a variety of repair work to Benz, Daimler, and De Dion vehicles was in hand. A good stock of oils, greases, and spare parts is also kept.

MR. J. F. SCOTT, of Edinburgh, is introducing an improved gear sleeve for Daimler and Panhard type cars, the feature being that the third speed ring is made detachable so that it can be replaced in the same manner as the fourth speed. The third and fourth speed gears abut together on the new sleeve, are bolted to a flange, and also secured by means of a feather.

MESSRS. RICKARD AND CO., of Brentford, have opened extensive new workshops, and are prepared to undertake work

of all kinds, both for motor-cars and launches. They are also supplying engines for motor-bicycles fitted with their new carburettor and ignition gear. It is claimed for the new carburettor that it will not overflow, however rough the road may be.

WE are authorised to state that the Hon. John Scott Montagu, M.P., more than a month ago resigned his seat on the Board of the De Dion-Bouton Company. Mr. Montagu's resignation was caused by the decision of the De Dion Company to act in opposition to the policy decided on by the trade and adopted by the Automobile Club—viz., that there shall only be one exhibition within twenty miles of Charing Cross per annum, and that the Exhibition of 1902 should be the Automobile Club's Exhibition at the Agricultural Hall.

A STRIKING example of the interest now taken in the proper maintenance of roads is afforded by a placard recently issued by order of the Hertfordshire County Council. It takes the form of a caution, drawing attention to the damage done to main roads by the transference of mud, soil, and clay to them from adjoining land by the wheels of carts, and it threatens with prosecution offenders who omit to clean the harmful matter from their wheels before bringing them on the roads out of fields. The offence has for years been ignored, but it is a welcome sign of the activity of road surveyors that they should be zealous to maintain their good roads unimpaired by careless methods of carting.

MESSRS. W. R. THOMAS AND CO., of 12, Thornbury Road, Brixton, S.W., are introducing a new motor-bicycle, which they have named the "Brion." The motor has a cylinder $2\frac{1}{2}$ in. diameter by 3 in. stroke, and is claimed to develop $1\frac{1}{2}$ actual h.p. The ignition is of course electrical, while the carburettor is of the Longuemare spray type. The engine is supported below the lower cross tube of the frame, and drives the rear wheel by means of a strap. The petrol tank has a capacity sufficient for a run of 125 miles, while sufficient lubricating oil can be carried for 200 miles. The road wheels are 26 in. diameter, and are shod with Dunlop 2 in. pneumatic tires. Not the least important feature of the Brion motor-bicycle is the relatively low price at which it is being put on the market.

THE annual meeting of the shareholders of the Star Cycle Company was held at Wolverhampton last week. Mr. C. E. Shaw, M.P., who presided, said the unsatisfactory side of the balance-sheet had reference to the motor-car department, and the sum of £2,530 had been written off. From the very first the motor-car industry had been somewhat in the nature of a speculation. It would be unwise in consequence of a temporary loss to relinquish their hold upon the industry. The question resolved itself into one of confidence in the directors, and as 75 per cent. of the total sales of motor-cars was made in London, he considered a depot ought to be opened there. As this, however, would involve an expenditure of £1,000, they hesitated to move until they knew whether or not the shareholders were behind them. The report was adopted, and eventually the directors were empowered to open a depot in London.

THE Quarterly 100-Miles Trial of the Automobile Club will be held on Tuesday, January 14th, 1902. The course will be from London to Oxford and back, via Uxbridge, Beaconsfield, and High Wycombe. The speeds of the vehicles will be taken on Dashwood Hill on the outward journey, and on Aston Hill on the return journey. The gradients of these hills are 1 in 16 and 1 in 21 respectively. The purpose of the trial is that cars entering shall make a non-stop run of 100 miles. If a stop is made the cause of the stop is recorded, as also are the number of passengers carried and the consumption of petroleum spirit. Manufacturers and agents wishing to enter vehicles for this trial are requested to communicate with the Secretary, Automobile Club, 4, Whitehall Court, London, S.W., from whom full particulars and entry forms may be obtained. The entrance fee is three guineas plus one guinea, the latter being the fee for registration under the Competition Rules of the Club. The last day for receiving entries is Saturday, January 11th, 1902.

IGNITION IN PETROLEUM-SPIRIT ENGINES.

AS, briefly mentioned in our last issue, the time chosen for the reading of the first of a series of papers destined to appear in a Badminton Library book on "Motoring" was Wednesday, the 11th inst., after the first of the Winter session House-dinners at the Automobile Club. "Ignition in Petroleum-Spirit Engines; Systems, Possible Failures: How to Discover and Remedy Them," was the complex title of the first paper, read by a most able exponent, Mr. Ernest J. Hutton, J.P. The paper, which was made still more instructive by the many diagrams displayed, was of an exhaustive nature, dealing with every known method of ignition, and setting forth the advantages and disadvantages claimed by each. If every chapter of the Badminton book is as full of useful information as that contained in Mr. Hutton's opening paper, the way of the future automobilist will be made easy. The discussion and interchange of ideas which followed the conclusion of the paper were equally prolific of tips which should prove invaluable to the inexperienced brought to a sudden stop and searching for both cause and remedy.

Mr. Campbell Swinton recommended carrying a small dynamo, worked by the engine, as a means of keeping batteries charged, as preferable to charging accumulators before starting. Doctor Boverton Redwood expressed the opinion that the nature and power of the spark generated should be the subject of further investigation. In supporting this theory he cited a somewhat curious experience. On the occasion of a petroleum ship taking fire at sea, he had, with others, investigated the cause. The opinion prevailed that a spark,

struck from the iron of which the ship was largely constructed by a nail in a boot, was the cause. Experiments, however, proved that no such spark would ignite petroleum or the vapour rising from it. Amongst simple, but easily remedied, causes of failure of ignition, a case was quoted of the battery having slipped, with the result that it rested against the aluminium side of the car, thereby short-circuiting the current. Restored to its proper position ignition was continued. Mr. Staplee Firth recalled an early experience with a car which would not go. After a long search for the cause of failure a yard of wire was found hanging over the side. When re-attached to the battery terminal, from which it had worked loose, the car continued its journey. Instances were cited of the failure of the Simms-Bosch electro-magnetic ignition, due to overheating and splitting of the mica packing. As a remedy it was stated that vulcanised rubber washers had been found as effective as mica for packing and impervious to heat.

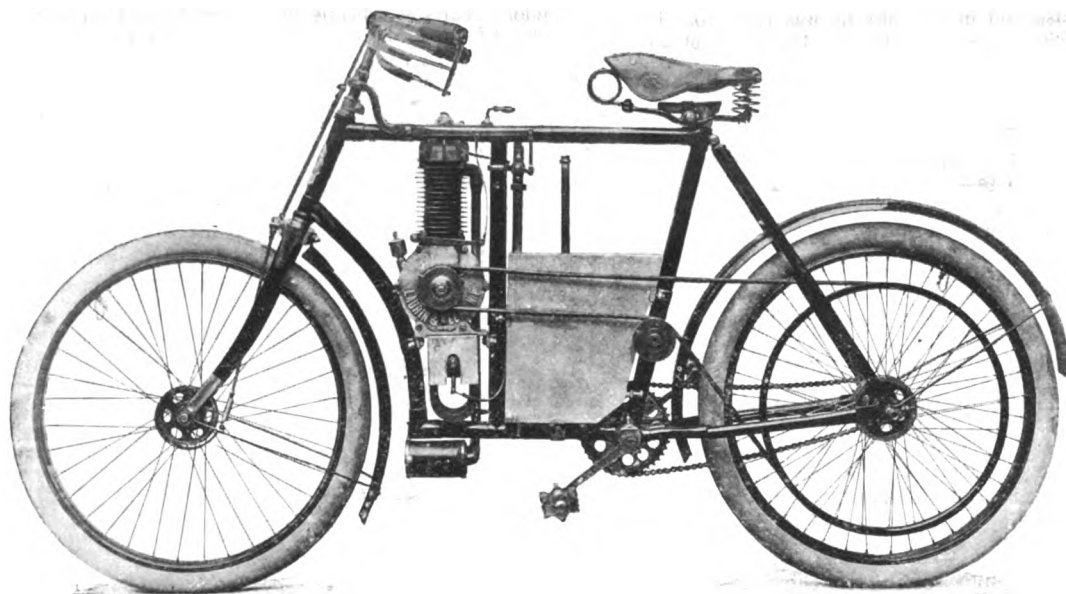
Another curious cause of failure, in the case of a wipe spark, was traced to a brush having worked loose through vibration and fallen away from the commutator, a mishap easily overlooked and easily remedied. Soot or dirt on platinum points was considered the most frequent cause of failure, and the simplest remedy cleaning with sand paper. The distance between points and consequential length or fatness of spark was a matter

of consideration. Weight of opinion gave that distance as varying from 1-64 to 1-32 of an inch, the lesser distance being about equal to and measurable by the thickness of the finger nail; the greater by that of the thumb.

THE "HEWETSON" MOTOR-BICYCLE.

CALLING in at Messrs. Hewetson's, Limited, extensive depot in Tottenham Court Road, W., the other day, we had an opportunity of inspecting the new motor-bicycle which the company have just put on the market. The machine, of which we give an illustration herewith, is of Austrian design, and, as will be seen, has a frame of special construction, the ordinary lower main tube being replaced by a horizontal tube and another one curved so as to be parallel with the front wheel. The frame, which has a vertical stiffening tube just behind the motor, is of strong construction throughout, the fork crown being of unusually liberal dimensions. Coming now to the engine, this is of the vertical air-cooled type, and is stated to develop $1\frac{3}{4}$ h.p. No dry batteries or accumulators are used in connection with the electric ignition, the spark being provided by an improved form of the Bosch magneto-electric machine, which will be seen in an inverted position below the crank chamber of the motor. The combined surface carburettor and

petrol tank, which has a capacity of about a gallon, is located in the back panel of the main frame, leaving plenty of room for an additional petrol tank, tool bag, etc. No compression cock is provided, its place being taken by an exhaust-valve lifter, which is controlled by a lever like a brake lever from below the left portion of the handle bar, the same lever also actuating the tap by means of which the quality of the



explosive mixture is regulated. The quantity of gas allowed to pass to the explosive chamber is controlled by the small handle seen on the top bar of the frame, just behind the engine. The power of the latter is conveyed by a long, flat belt to a light pulley on the back hub. This pulley is practically a small wire-spoked wheel in itself, and is not attached to the rear road wheel through the spokes or rim, but is connected direct to a special hub. An adjustable jockey pulley is fitted to the main down tube of the frame. The usual pedals and chain gearing, with free-wheel clutch, are fitted to start the engine. Two-inch pneumatic tires are provided to the road wheels, while there is a powerful band brake fitted to the front wheel hub. Altogether the new machine appears to be of sound construction. We understand that it is a good hill-climber, and that on fair roads it can attain a speed of thirty miles per hour.

THE balloon ascent which the Aero Club had arranged to take place from the Crystal Palace last week, to enable the Hon. C. S. Rolls, Professor Hutchinson, of Cambridge, and M. Gaudron to make scientific experiments, had to be postponed owing to climatic conditions, and is now fixed for Friday, December 20. It is proposed to collect germs, which will be cultivated and microscopically examined by Dr. Hutchinson at Cambridge.

MOTOR-CAR v. CHAR-A-BANC.

A COLLISION between a char-a-banc and a motor-car at Monkspath was the basis of an action for damages brought by a baker named Charles Newbold, 87, Church Lane, Aston, against Harvey du Cros, jun., well known in cycle and motor circles in Birmingham. Newbold's oven had fallen in, and he relinquished baking temporarily in favour of driving. On June 22nd he was taking a party of ladies to Henley-in-Arden, when the defendant's motor-car struck his fore off-wheel and knocked the spokes out. The plaintiff alleged that in consequence he was unable to use the vehicle for some time, and lost a good deal of money which he otherwise would have earned. Messrs. Hugo Young, K.C., and S. S. Dorsett appeared for the plaintiff, and Mr. Vachell for the defendant. The plaintiff and his witnesses said that they did not know of the proximity of the motor until the collision occurred, and Mr. Vachell cross-examined with a view to showing that the cause of this was the noise that was proceeding from those in the char-a-banc. It was denied that they were singing. One young lady said that they were talking amongst themselves. Mr. Vachell: Thirteen young ladies talking amongst themselves, and you say there was no noise? (Laughter.) Another witness was not inclined to admit that they had reached so high a pitch of enjoyment that they paid no attention to anything else in the road. She was not particularly jolly. Mr. Young: You had no men with you? (Laughter.) Mr. Du Cros, who said he had driven motor-cars about 60,000 miles in five years, attributed the accident to the unsteadiness of the plaintiff. The latter, he stated, pulled his horses in upon the motor after the front wheels of the latter had passed. Mr. Du Cros also declared that he sounded his horn continuously whilst coming up behind the char-a-banc. Defendant denied that he had had eighteen collisions whilst motor driving. He had had only one other case, and in this also he was run into. The motor he was driving cost £560, and was damaged to the extent of £38. The Judge charged the jury with characteristic brevity. Which of the views put forward did they accept? The jury declared for that of the plaintiff. Damages amounting to £35 had been agreed upon by the parties.

A DRUNKEN MOTORIST.

GEORGE HEADMAN, of New Kent Road, was charged at North London with being drunk whilst in charge of a motor-car at Lansdowne Road, and Edmund H. Newley, machinist, of Spencer Road, was summoned for attempting to rescue Headman from custody. Police-constable 52 NR, said in consequence of information received, he proceeded to Lansdowne Road in company with Police-constable 479. There he saw Headman sitting in the car, and as there had been a collision, witness asked him to get out. He refused several times, but when he did, witness saw he was very drunk, and took him into custody. Newley then seized his companion by the arm, and attempted to take him from the custody of the constable. Police-constable 479 N corroborated.—A young man named Sands said he was driving a pony-trap, when defendant ran into him and damaged the horse and vehicle. Headman alleged that Sands was on his wrong side and ran across his (Headman's) way. He contended he was so upset at the accident, he was excited, but was not drunk. Newley also said he was only excited. The Bench were satisfied Headman was drunk, and fined him 20s. and costs, but considered Newley had only acted foolishly, and discharged him with a caution.

SEQUEL TO AN ACCIDENT.

At the Hereford County Court, before Deputy Judge Amphlett, Messrs. Thomason and DuBuisson brought an action against Mr. G. Llewellyn Davies, solicitor, Greenwich, to recover the sum of £2 2s. for a visit to the Callow, near Hereford, and professional attendance upon three persons. The case for the plaintiffs was that the defendant called at their surgery on a motor-car and said he would be glad if one of them would proceed at once to the Old Tunpike at the Callow and attend to some persons who was injured. The plaintiffs did as requested and found three persons badly injured, one having a broken leg. Nothing was mentioned about payment at the time. Plaintiffs had written several letters asking for payment, but had received no reply. The Deputy Judge stated that if a man called at a doctor's and ordered him to go out he was liable unless his liability was displaced, and gave judgment for the plaintiffs.

A COLLISION CASE.

In the Bristol County Court, William M. Appleton, trading as the Bristol Motor Company, brought an action against the Bristol Tramways and Carriage Company, Ltd., to recover the sum of £50 for damages to a motor-car, alleged to have been sustained through the negligent driving by a servant of the defendant company of an electric tramcar at Ashton Gate on the 14th September. Mr. Weatherly, instructed by Messrs. Tanner and Clarke, appeared for the plaintiff, and the defendant company were represented by Mr. Vachell, instructed by Messrs. Stanley, Wansbrough, and Doggett. A number of witnesses were examined on behalf of

the plaintiff's case, which was that the tramcar in question overtook the motor-car as it was passing another motor and ran into it, causing the damages complained of. For the defence, Mr. Vachell submitted that there was absolutely no evidence of negligence on the part of the driver of the tramcar, and that there was an error of judgment on the part of the driver of the motor-car. His Honour said that in his opinion the accident was brought about solely and entirely from the negligence of the driver of the motor-car in not looking round to see if the tramcar was coming before trying to get round the other motor. The driver of the tramcar could not have had the smallest knowledge that the driver of the motor was going to do what he did, viz., turn out on the metals, and it was not suggested that the tramcar was going at excessive speed. Judgment would be for the defendant.

AUTOCAR SUPPLIES (LIMITED).

A compulsory winding-up order having been made against this company, the usual meetings of creditors and shareholders were held last week at the Board of Trade offices, Carey Street, W.C., Mr. A. S. Culley Assistant Official Receiver, presiding. The chairman reported that the company was incorporated on August 21, 1900, with a nominal capital of £20,000 divided into 10,000 six per cent. preference and 10,000 ordinary shares of £1 each. It was formed to acquire the business of a motor agent previously carried on by Mr. A. C. Selbach. The promoters of the company were Mr. Selbach and Mr. S. Makovski, who on June 25, 1900, entered into an agreement which provided that the company should be formed to acquire Mr. Selbach's business at the price of £10,000 in fully-paid ordinary shares in the company. In order to provide working capital Mr. Makovski applied and paid for 2,500 preference shares. It appeared that Mr. Makovski received 5,000 of the vendor's shares as a bonus for subscribing for the preference shares. The contract for the sale of the business to the company was entered into on August 24, 1900. Mr. Selbach stated that he had carried on business as a motor agent for about seven years prior to the formation of the company, and during the last three or four he had traded in England. At the time of the transfer to the company he held only two agency agreements with motor and cycle makers. One of the agreements was excluded from the sale, and in respect to the other he stipulated that for three years he should be paid the profits received under it by the company. The company did not take over any tangible property, and no accounts showing the results of the previous trading were produced. Certain premises were leased for 14 years, and a sum of £1,000 was expended in making them suitable for the company's purposes. Owing to the landlord's objection to grant a lease to the company, Mr. Selbach became the lessee, and upon the winding-up order being made he claimed the beneficial interest in the lease. The Court had decided that such interest belonged to the company, subject to Mr. Selbach's right to an indemnity, the form of which had not yet been settled. The business had been carried on at a loss throughout. A statement of affairs had been filed showing liabilities £1,307 6s. 4d. and assets £1,874 6s. 7d., the deficiency as regarded shareholders being returned at £11,932 19s. 9d. At both meetings the Official Receiver and Mr. G. H. Chantrey, chartered accountant, were nominated for the post of liquidator, and the Chairman stated that the matter would be reported to the Court, with whom the appointment rested.

ACTION TO RECOVER COMMISSION.

BEFORE Mr. Justice Bruce in the King's Bench Division, Messrs. Kesterton and Company, Limited, brought an action against Messrs. Marshall and Co., of Belsize Works, Manchester, to recover commission under an agreement. Under the deed defendants were allowed the use of plaintiffs' premises in Long Acre, London, as their London depot. Plaintiffs were to pay 5 per cent. commission on the business done in motor-cars to the defendants, and an extra 2 per cent. upon all the business done by plaintiffs on behalf of the defendants. The premises were used from October 30th, 1899, to February 20th, 1900, and plaintiffs asked for an account and for the commission due to them. Defendants admitted the rates of percentage allowed, and paid £64 odd into court in full satisfaction of the plaintiffs' claim. After hearing the evidence, his lordship held that the percentage was to relate to all business; the agreement as sent to the plaintiffs must be acted upon, and plaintiffs must supply defendants with an account of all business done in motor-cars under the contract. Judgment accordingly.

AN APPEAL REFUSED.

In the King's Bench Division, Mr. Stevenson moved for a rule nisi calling upon the Justices of the Peace of Kesteven, Lincolnshire, to show cause why there should not be removed into this court, with a view to its being quashed, a conviction for driving a motor-car at a greater rate of speed than that allowed by the regulations of the Local Government Board. The conviction set out that the defendant Harvey, for whom he appeared, being in charge of a light locomotive, otherwise a motor-car, on the Great North Road, drove or caused it to be driven at a rate greater than twelve miles an hour, contrary to the regulations of the Local Government Board, made under the Locomotives on Highways Act, 1896. The Act itself provided that no light locomotive should travel along a

public highway at a greater speed than 14 miles an hour, or at any less speed which might be prescribed under the Regulations of the Local Government Board. The objection taken on behalf of Harvey, who said he was only travelling at the rate of seven miles an hour, was that the Regulation of the Local Government Board was not put in evidence or proved in any way. The Court refused to grant a rule.

AN MOTOR BALLAD.

If I had an automobile,
A rubbery, rollicking thing,
All shellac, japanning, and steel,
With plenty of ginger and spring,
I'd "Hello!" to Edward, the King,
So happy and airy I'd feel,
And sail like a bird on the wing,
If I had an automobile.
If I had an automobile,
With a bell that goes ting-a-ling-ling,
Though it cost me of trouble a deal
And proved a most ruinous thing,
In public its praises I'd sing,
Making sport of the horse and the wheel,
For expenses not caring a ding,
If I had an automobile.
If I had an automobile,
The newest and stylistest thing,
My rivals with envy would reel
And writhe under jealousy's sting,
With my little old ting-a-ling-ling,
Like a winner all summer I'd feel,
And I'd laugh at the horse shows, b' jing,
If I had an automobile.

—St. Louis Post Dispatch.

IN THE BANKRUPTCY COURT.

Re B. B. Bocket Pugh, of 6, Castle Crescent, and carrying on business at York Road, Caversham Road, Reading, motor-car proprietor. The summary of the debtor's statement of affairs shows liabilities £284 6s. 6d., and assets nil. The Official Receiver remarks:—"The debtor states that he has no business, but has been employed as a motor-car manager for his mother, having no fixed salary, but only board and lodging. He has been previously employed in the South African Police at a pay of 8s. per day. He states that he has no assets whatever. The cause of insolvency is stated to be 'living beyond my means before I went to South Africa.' Since he returned from Africa he had been engaged in managing for his mother one of the motor-cars which run between Reading and Caversham. The car cost £525, less 15 per cent. discount, and in a good week the takings would amount to £20." The debtor was questioned at considerable length by the Official Receiver respecting that car and two others which were kept at the depot in York Road, and ran on the Reading and Caversham route. Debtor declared that the first-mentioned car belonged to his mother, and the others to his brother and a Mrs. Strode respectively. He had no financial interest in either of the cars. The debtor was ordered to appear at the next Court, the Official Receiver intimating that in the meantime inquiries would be made respecting the ownership of the various motor-cars.

FURIOUS DRIVING CASES.

At Brighton, Roland Browne, of Bramham Gardens, Earl's Court, S.W., was summoned for furiously driving a motor-car on Marine Parade on the 30th ult. Police-constable Sidney Mullins said he saw defendant driving a motor-car along Marine Parade on the day named at the rate of about eighteen miles an hour. At the bottom of Chesham Place witness held up his hand, but defendant continued the same pace until he reached Clarendon Terrace, where witness spoke to him. Defendant then denied that he was going very fast, and said he could pull up in eight yards. George Stoner, 31, College Gardens, fly proprietor, said he was standing at the bottom of Seymour Place and noticed the car coming along very fast—eighteen to twenty miles an hour. Defendant seemed to have proper control over the machine, but witness thought the pace was rather dangerous. Defendant denied that he was going fast. The car was travelling at not more than nine miles an hour. He met his wife at the Railway Station at 3.20, and placed her in a cab, and arrived at Clarendon Terrace a few minutes before the cab. He always drove very steady, and could pull up in eight feet and not eight yards as stated by the constable, as he had two very powerful brakes. The Chief Constable said he had had one or two complaints about the driving of motor-cars at the spot named, and he asked for the infliction of a substantial penalty. Fined £5 and costs, or a month's imprisonment.

At Stone Police Court, Arthur Merrick, a motor expert, of 3, Fairfax Street, Coventry, was fined £5 and costs on two charges of driving his car at a dangerous speed. The officer who proved the case said the car was

being driven at twelve miles an hour, while a witness described the pace as thirty miles an hour.

At Dumfries, before Sheriff Campion, William Holland, motor-car driver, Ballochmyle House, Mauchline, was charged with a contravention of the regulations made by the Secretary of State under the Light Locomotives Act, by driving a motor-car on the public road between Sanquhar and Kirkconnel on 14th November last at a greater speed than twelve miles an hour. He pleaded not guilty, but was convicted on evidence. His agent stated that he had been dismissed in consequence of the annoyance caused at Ballochmyle by this charge, and was now out of employment. For that reason a similar charge made against him in Ayrshire had not been proceeded with. The Sheriff in the circumstances limited the fine to £1.

At Glasgow, John Murray was found guilty of recklessly driving a motor-car in Cambridge Street on 30th ult., whereby a man named Wm. Thomson was run down and injured. Murray stated that the motor-car was his father's, and the accident was entirely due to Thomson, who seemed to be filling a pipe that was in his hand. A fine of £1 1s., with the option of 14 days' imprisonment.

A MOVEMENT is on foot in St. Petersburg to form a Russian Automobile Club.

At a meeting of the Sub-Streets Committee of the Darlington Corporation, last week, the question of motor-cars for street watering, etc., was brought up. Nothing definite, however, was done, except to call for a return from eight or nine towns where such vehicles have been in operation for some time, to see how they worked.

WE have received the first number of a new German fortnightly entitled *Das Schnauferl*. Most of our readers will have heard of the German comic paper *Fliegende Blätter*. We can best describe the new paper by stating that it is on similar lines, but dealing with automobile subjects only. The journal is published by Herr Gustav Braunbeck, of Mannheim.

THE Chambre Syndicale de l'Automobile have decided to hold an international exhibition of mechanical locomotion, under the patronage of the Automobile Club of Belgium, from March 8th to March 17th, 1902, in the Grand Hall of the Palais du Cinquantenaire, at Brussels. The members of the divers committees and sub-committees of the A.C.B. have agreed to form a committee of organisation to take up the direction of the trials, which will take place on the special track reserved in the hall for this purpose.

THE Dorman Engineering Company, of Northampton, are the makers of a new motor, known as the "Whirlwind," primarily intended for launches, but adaptable to cars, agricultural machinery, saws, pumps, hoists, etc. The pamphlet issued by the company gives complete specification and illustrations of a standard engine. The double cylinders supplied are 4½ in. by 5½ in.; the carburettor is of the Longuemare type, though any other pattern can be fitted. Ignition is electric, the current being supplied by 2 volt 25 ampère hour accumulators.

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THE Motor-Car Journal.

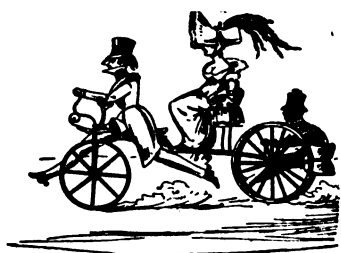
VOL. III.]

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COMMENTS.



IN order to obtain incontestable evidence of the distance within which motor-vehicles travelling at various speeds may be stopped, the Automobile Club proposes to hold a Special Brake Trial on Saturday, the 11th January next. The records to be obtained at this trial are specially required in connection with the proposed amendment of the automobile laws. It is hoped, therefore, that manufacturers and private owners, in view of the importance of the issue, will enter vehicles for this trial. The speeds of vehicles will be taken and recorded on a run of probably one mile with a flying start, and the distances within which they can be stopped at the end of the mile will be measured and recorded. Manufacturers and owners who are willing to enter vehicles for this trial are requested to communicate without delay with the Secretary, Automobile Club, 4, Whitehall Court, London, S.W. The Club Committee reserve to themselves the right to refuse entries.

The War Office Motor-Lorry Trials.

THE trials of the various types of self-propelled lorries competing for the War Department prizes at Aldershot were completed last week. The tests on Tuesday were so severe that only one of the five competitors reached the depot again without a mishap; three of the wagons being placed hors-de-combat during the morning; and a fourth having to be extricated from a bog. The trials consisted of sending the wagons across country, the rough ground on and about the Long Valley being selected as the course. One of the first tests of the day, to try their steering apparatus, was to see which lorry could turn in the smallest circle. This was best accomplished by the Thornycroft rear-driven steam wagon, which turned completely round in an eleven yards circle. The wagons were then started off across country, up and down hills and across streams, the Foden leading, and for about a mile all did extremely well. At length the Foden approached a spot where a deep ditch with almost straight banks, the full depth and steepness of which were concealed by long grass, ran across the track. When the wagon reached the spot, the front wheels dropped bodily into the water, badly damaging the fore carriage. It was really more awkward than the Committee anticipated, and the other vehicles were stopped from attempting to cross. They were, however, required to cross a stretch of four hundred yards of hard and soft bog, which the drivers attempted to negotiate by fixing on to their wheels "fish plates." The Thornycroft standard wagon managed to negotiate and traverse this stretch of heavy ground, dragging its trailer and load of five tons after it, but the Thornycroft rear-driven wagon after getting half way through sank very deeply, and had eventually to be dragged out by a traction engine. The Milnes motor-wagon was in trouble before reaching the bog, so

did not attempt it, and the Straker lorry had got but a little way across it when a steam-pipe burst. A repair was, however, effected and the run completed.

The Awards.

THE Committee has made its report to the War Department. The first prize of £250 and the second of £150 have been put together and divided between Messrs. Thornycroft and Foden, and the third prize of £100 goes to the Straker Company. The Milnes oil-driven motor-lorry, although not a prize winner, has been purchased by the War Office for further experiments, owing to the cheapness of its fuel and the facility with which oil can be obtained.

Above the Clouds.

THERE is one advantage at least which the aeronaut has over his fellows who have their living and being on earth. He can rise superior to weather. No matter what the conditions prevailing on earth below he can force his way through the clouds and sail to the realms of everlasting sunshine. Such was the experience of a party of aeronauts who, on Thursday last week, ascended from Paris during a heavy snow storm. The party consisted of the Count de la Vaulx, the Hon. C. S. Rolls, Mr. Frank Butler, and Miss Vera Butler, who found accommodation in a balloon belonging to the Aero Club de France. After three hours above the clouds and under a blue sky they descended in the forest of Limours, to find the earth thickly carpeted with snow.

An Electric Motor-Car at Bolton.

CONSIDERABLE interest has been taken in Bolton in the electric motor-car recently obtained by Mr. W. B. Hulton, J.P., from the City and Suburban Electric Carriage Company. Mr. Hulton has been induced to adopt an automobile owing to the extension of slippery setts and electric tram-cars in the town. These render it unwise, in his opinion, to use high-class horses, and so an elegant electrical equipage is now daily to be seen in Bolton. It will run 50 miles on one charge, at a maximum speed of twelve miles an hour, and is taking the heavy gradients in the vicinity of the town with ease. Mr. Hulton has had a motor and gas engine laid down in the coach-house at Hulton Park, from which the necessary recharging will be done.

In Johannesburg.

JOHANNESBURG is already beginning to make up for the time lost during the war, and the motor-car is being utilised in the delivery of newspapers along the reef. A local correspondent declares that there are signs of a general automobile boom at Johannesburg in the near future. Already several motor-cars are owned by the leading merchants, and when the stress of the military occupation is removed there should be a good demand in that district.

Dust in Streets.

SOME few months ago Mr. J. B. Massey, the street-cleaning superintendent of Burnley, read a paper on "Dust" before others similarly employed, and it was generally conceded that the horse was one of the greatest offenders so far as the dust of our streets is concerned. Dr. Reynolds, the Commissioner of Health of the city of Chicago, now declares that, so long as the horse works for his living in the streets of that city, he will be a menace to the public health of its inhabitants. Hence the movement for the adoption of the automobile is now being actively promoted by the medical profession of the United States.



MISS ELLIOTT PAGE ON A LOCOMOBILE DOS-A-DOS.

The Economy of Motor-Cars.

NOT only for sanitary reasons, but on the score of economy, the doctors should be among the friends of the new industry. Mr. A. E. Major, of Reading, has drawn up a statement showing the relative cost of horses and motor-cars. This is based on a doctor's estimate, and several of the medical men of Reading are agreed that the expenses of the horse have been very lightly stated. Mr. Major gives the cost of a motor-car with its rugs at about the same as two horses with two sets of harness, an open trap, rugs, and stable requisites. The weekly running expenses are set down at £1 6s. for coachman and £1 9s. for forage, straw, etc., making a total of £2 15s., where horses are employed. In the case of the car the weekly outlay is set down at 16s., composed of 12s. for a lad and 4s. for the petrol required for an aggregate of a hundred miles; 15 per cent. is reckoned as the depreciation in a motor-car. Perhaps these figures will induce others to give their experience in our columns.

Efficiency Wanted.

THE attitude of politicians to motor-cars is interesting and may be considered without treading the thorny path of politics. Mr. A. J. Balfour is an expert in motor-car matters and a devotee of accelerated motion—provided, of course, it does not go beyond the legal limit. Sir H. Campbell-Bannerman does not like motor-cars and prefers the horse, thus proving himself a conservative—with a small C. Now Lord Rosebery has spoken and he has declared for Efficiency. We had only just

finished reading his Chesterfield speech when we saw a letter from Mr. Frank Constable, of Brighton, in which he said, "It is the desire for efficiency which is the origin of the demand now producing the supply to this country of the productions of Panhard and Levassor of from 7 to 12 h.p." We do not want such rapid speeds as would frighten Sir H. Campbell-Bannerman, and—perhaps—satisfy the leader on the other side of the House, but we do want that efficiency for which one who does not follow either of these gentlemen so constantly pleads.

Motor-Cars in Perak.

IT has been a matter for surprise to us, remarks the *Perak Times*, that arrangements have never been made for the formation of a company to establish motor-car services in Perak. "Services of cars connecting Kampar, Gopeng and Ipoh; Ipoh, Papan Menglembu and Lahat, to mention only two instances, would, we are of opinion, pay handsomely, while, pending the completion of the Taipeng-Padang Rengas section of the railway, motor-cars running between those two places should return an excellent dividend. We trust that someone having command of the necessary capital may be found to initiate a motor service in Perak."

Toleration as to Types.

SOME months ago we expostulated with one of the electrical papers for its unfair remarks on the petrol motor-car; now *Lightning* goes out of its way to disparage cars other than electric as "the plaything of the man who has time on his hands." We quite agree with our contemporary in trying to keep electric cars to the front; hence the prominence we have given to any new developments in that direction. But we emphatically protest against an attempt to discourage the makers of other kinds of cars. We want to see all kinds of cars upon the road, for it is only by experiment and experience that the best type of vehicle will be ultimately obtained. The middle class man may, as *Lightning* says, be waiting for the electric automobile, but he is using the petrol or the steam car in the meantime. It is, however, absurd to say that petrol and steam cars are mere playthings for the wealthy, seeing that the delivery vans now in use are all propelled by one or other of these systems, and that doctors and business men generally have been so well satisfied with the results.

Furious Walking.

IT is well within the range of possibility that "furious walking" will at no distant date monopolise the attention of rural police, just as "furious driving" of automobiles does to-day. Inventive man has long turned his attention to providing some means by which the pedestrian can attain a speed which might vie with that of a certain giant of nursery classics. Many contrivances, mostly of the roller skate order, have from time to time claimed a passing notice, though none have so far found favour, excepting in the eyes of their enthusiastic inventors. Two Swiss engineers have come to the front with the latest of such devices, which bids fair to eclipse all others. The "automobile boot" is credited with a speed of 160 feet per second, or a fraction over 109 miles an hour. It is described as resembling a patten, by no means heavy, comfortable in use, and a really elegant substitute for an ordinary boot as far as appearance goes.

At Manchester.

THERE are two or three motor firms located within easy distance of each other at Deansgate, Manchester, where automobiles are steadily acquiring a familiarity with the public. In the show room of Messrs. Robinson and Price we recently saw some motor-bicycles—early assurance of the confidence they feel in this development of the industry—and also some Locomobiles, while a Royal Enfield 6 h.p. car formed the central attraction in the window of Newton's Motor and Cycle Works near by.

The Horse Danger.

Now that motorists are becoming so numerous on the road, we think it time to enter a plea for the better regulation of horse-drawn vehicles. At present, anyone appears to be regarded as competent to drive a horse and cart, with the result that accidents are frequent. As it is becoming recognised that the horse is a creature of uncertain temper, we do not see why certificates of competency should not be issued to drivers who have satisfied someone appointed by the local authority that they are sufficiently skilful to manage a horse of ordinary habits. The idea may seem strange, but when we remember how many accidents have been caused by shying horses which have got beyond the control of incompetent drivers we are justified in the demand.

Hidden Merit.

THE advantages of motors for business purposes have been somewhat tardy in penetrating the commercial mind, though already recognised to some extent; but a new merit is suggested by the cases of van thefts, of which several have been reported lately. These, it may be pointed out, though the well-deserved penalty for leaving vehicles unattended, would have been practically impossible if the vans had been automobiles. Few attempts have been made to purloin motor-cars, and of these few, not one, we believe, has met with success; while the risk would be entirely avoided by suitable means of interrupting ignition, or otherwise locking the mechanism, even in the case of experts alike in crime and automobilism arising among us, a state of things which, in spite of the confusion between the two in the average magisterial intellect (?), has, we may be thankful to say, not yet come to pass.

Paint and Powder.

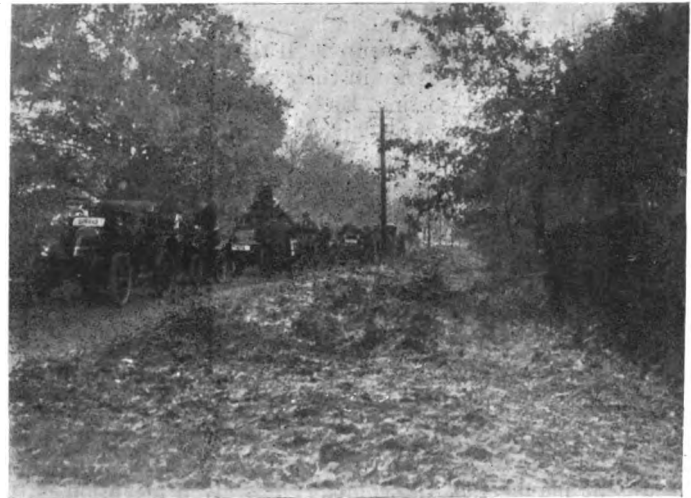
It is a somewhat regrettable fact that the average motorist is not so particular about the appearance of his vehicle as is the average carriage-owner, thereby causing the enemy to blaspheme. He has, however, several excuses on his side for deficiency in the matter of paint and varnish, one at least being that however spick and span his car may be at starting his journeys are seldom short enough or oversufficiently clean roads for such a decorative state to persist to their conclusion. Another point, also, which deserves some notice, is the want of durability of varnish or paint under the conditions prevailing with a motor-vehicle, which, though sometimes due to lack of the laborious and prolonged care given to the production of a surface on good coach-work, seems to be more justly attributed to the deteriorating effect of road dust at high speeds. The effect of the "sand-blast" on such hard materials as glass and porcelain is familiar, and there can be little doubt that to a similar action is due the want of durability of motor-carriage paint-work. The principal effect will usually be noticed on the paint at the back of the car, where the inrush of dust-laden air is most violent; and it is difficult to see how any painted surface can be made to resist it. Still, a good automobile is quite as worthy of attention to its outward appearance as any other carriage, and neglect of it produces an unfavourable impression on the uninformed public.

Home Made Motor-law.

As a result, it is alleged, of one or two successful raids by "moting" burglars, the Mayor of Gannat, France, recently issued a decree respecting the speed of motor-cars in that township; the decree ruled that their normal speed must not exceed that of a walking horse and in the commune, that of a trotting horse. The local Jack-in-office, however, received a smart reminder from the Minister of the Interior that his place was to administer the law, not to make it, and the speed law remains the same at Gannat as elsewhere in France.

A Useful Attachment.

A SMALL accessory that has its merits, though novelty is not one of them, appears at the Paris Exhibition, in an adjustable mirror attachable near the driver's seat to give a rearward view therefrom. The habit of looking backward claims its regular meed of victims with automobiles, as in bicycle races, and such a device is often useful in traffic, more especially if there is a hood or similar obstruction behind the driver. Such an arrangement adapted to cycle handle-bars has been on sale for many years, and is frequently used on motor-cars. The mirror should be convex, to give a good field of view, in which case it need not be large. Apropos of this subject, it might be added that the compulsory use of such an arrangement on the popular covered van, by which so many accidents are caused owing to the inability of the driver to see behind him, would be of great advantage to ordinary traffic.



A GROUP OF CARS IN THE SOUTHEAST RUN.
Mr. Whiteway's "Slowcoach"—the winner of Mr. Edmund's prize—in the foreground.

"Made in London."

THE *Sun* has tried to make a mild sensation by giving all the glory of special headlines to an article setting forth how motoring garments are made on the Continent, and then labelled as "Made in London" for the English market. By this means underselling is declared to be going on in the trade to the injury of British makers. "Ladies and gentlemen," says our contemporary, "are measured for garments and the tailor overhauls his stock, and if he has nothing to fit in the required style he makes a few alterations." This is a direct attack on reputable London firms which we cannot credit, and in endeavouring to make out some sort of a case the writer of such rubbish has gone a bit too far. Measured goods are measured goods, and the alteration of style in the way described is easier done on paper than on waterproof material.

Show at Liverpool.

DURING the first week in February St. George's Hall, Liverpool, will be the scene of an interesting show which, it is hoped, will be opened by the Earl of Derby, the President of the Liverpool Self-Propelled Traffic Association. We gladly recognise the loyalty of the Liverpool Cycle and Motor Show, Limited, under the auspices of the local centre of the Automobile Club, in carrying out the spirit of the resolutions passed by the trade at the Automobile Club meeting last June. This should go a long way towards the success of the venture, which, in addition to the Exhibition, will include competitions for the vehicles on view, and also for vehicles owned by amateurs. The trials will be for a distance of not less than fifty miles, and the classification is (1)

motor carriages; (2) motor-bicycles and quadricycles; and (3) motor-bicycles. Professor Hale-Shaw, F.R.S., will be the judge, and those who comply with the Automobile Club's definition of an amateur may enter on payment of ten shillings. A silver medal will be offered in each class. Several members of the Liverpool Self-Propelled Traffic Association are entering, and probably there will be a large attendance from the North of England.

Success In Public Services.

MR. H. P. G. BRACKENBRIDGE, the manager of the Edinburgh Autocar Company, has been giving a representative of the *Devon Gazette* some of his views with regard to public motor-car services. He believes that, for success, the gradients of the district should be easy. Through routes and low fares, the latter not exceeding one penny a mile, are also essential; but Mr. Brackenbridge is opposed to going further for that amount. One of the drawbacks to the Edinburgh service is that they run a mile and a quarter for one penny. If they only ran the mile it would make a great difference in their receipts. Recently a new car—the Kingsburgh—costing £500, and carrying fourteen or sixteen passengers, has been adopted, and it is hoped that the up-keep will be considerably less than with the cars hitherto employed.

A Suggestion Worth Trying.

IN annual practice the life of the cars which have been used at Edinburgh has been two years—a result not of defective engines, but of the gearing and the frame not being properly stayed. The side strain has been the cause of the gearing soon getting out of alignment. Mr. Brackenbridge is hopeful that a different principle of construction in the Kingsburgh car will obviate that disadvantage. One important point to which the present manager of the company has given attention is the question of tickets. They are a nuisance, and Mr. Brackenbridge seems to favour the plan of charging drivers so much a day for the car—on the same principle as the London cabs are hired. Thus a regular income would be secured, and the interest of the drivers in obtaining passengers assured. The experiment would certainly be worth trying.

An All-Weather Want.

THE motor-car that will be of service in all weathers has yet to be evolved; but progress is being made. The popular tonneau body, while giving comfort on fine days, does not protect the riders from the keen blasts of winter; and those cars that have been fitted with a window in front are not elegant. Probably it will be found that the addition of a canopy fitting on to the existing car will best meet the requirement. Still the matter is worth the consideration of manufacturers, and the introduction of a car that would combine the comforts of a closed-in car for the winter, with the delights of an open brougham in the summer, would be popular.

Trams v. Motor-Cars Again.

A SPECIAL correspondent of the *Glasgow Herald* has asked the question, "Are electric tramways to be superseded by motor-cars?" and then takes a column and a-half of space in which to answer, "No." We do not remember to have heard any leading motorist express the view that motor-cars would wholly supersede tramcars. What is contended is that in many localities and where streets are narrow and winding, the motor-car has obvious advantages over tram-cars. Then, too, the passenger can be set down close to the pavement, whereas those who leave tram-cars have probably to dodge traffic before reaching the safety of the pavement. There is no doubt that motor-car services could efficiently act as feeders to tramway services just as they could to railways. These points in favour

of the automobile are worth consideration, and they indicate helping rather than superseding tramway services. At present that is all we urge.

French Motor-car Drivers.

How to guard against the annoyances and the expense due to the intrigues of unworthy *mécaniciens* is a burning question in France, and no solution of the problem has been found. M. B. de Saunier, the well-known writer, makes the following suggestion: "Do as the Chinese do with their physicians. They pay them a stipulated sum per year or per month so long as their health is good, but when they are sick, the physician must do his work for nothing until the health is restored. Pay the *mécaniciens* a certain sum per month, and dock them heavily for all the time the automobile in their charge is out of order." It will soon be found, he adds, that any automobile of reputable make may be kept in running order at a comparatively small expense.

A New Industry.

SINCE M. Santos Dumont successfully rounded the Eiffel Tower and established the fact that an air-ship can be made as amenable to rudder and propeller as the ship that ploughs the ocean, the balloon trade has received such an impetus that it may now be regarded as an industry. All over the world are adventurous spirits determined to emulate if not surpass the brilliant aerial feat of the young Brazilian. The result is work for many hands in preparing the specially constructed balloons or air-ships, which will in due course battle for the atmospheric championship. To turn to our own country, we recently referred to two orders for flying machines secured by a well-known automobile firm. Messrs. Spencer, we understand, are also busy; besides the balloon ordered by the Aero Club, which is to be on the lines of the *City of York*, in which some members of the Club have already taken a trip heavenward, they have in hand at Holloway no less than three specially-designed air-ships, the inventors of which propose to enter the lists for aerial honours.

Not the Horse This Time.

DURING a recent automobile tour through Central Indiana an old woman on a country road caught sight of the new vehicle, and took refuge in a fence corner, deserting her horse and phaeton. The automobile was stopped and one of its occupants got out and walked toward the horse, which showed signs of following its owner's example. "Never mind the horse," shouted the woman, "come to me. I am worse scared than he is." She refused to come back into the road, but made a detour along the fence until she passed the motor-vehicle, and then resumed possession of her horse. The aged Indian said she had never before seen an automobile and never wanted to see one again. We have heard of that Indian in this country.

THE Mayor of Gannat, who recently attained fame by making special laws for automobilists in his commune, has since been arrested for inciting the inhabitants of the village to stretch ropes across the streets. He was, however, released by order of the Minister of the Interior.

FIFTEEN thousand dollars (£3,000) is the price that Mr. W. C. Green, president of the Green Consolidated Copper Company of Arizona and reputed owner of 2,700,000 acres of United States soil, is said to have paid for one of the Panhard cars recently imported into America by Messrs. Charron and Girardot. The car is stated to be the one used by the latter in the Paris Berlin race. Mr. Green has already made several fast trials in the vehicle. With M. Charron driving, he travelled seventy-six miles over Long Island roads in 1h. 40m., including slackening of speed in passing through towns and settled districts. The flyer was timed one mile in 1m. 3s., with five passengers on board.

The Paris Motor-Car Exhibition.

(Continued from page 761.)

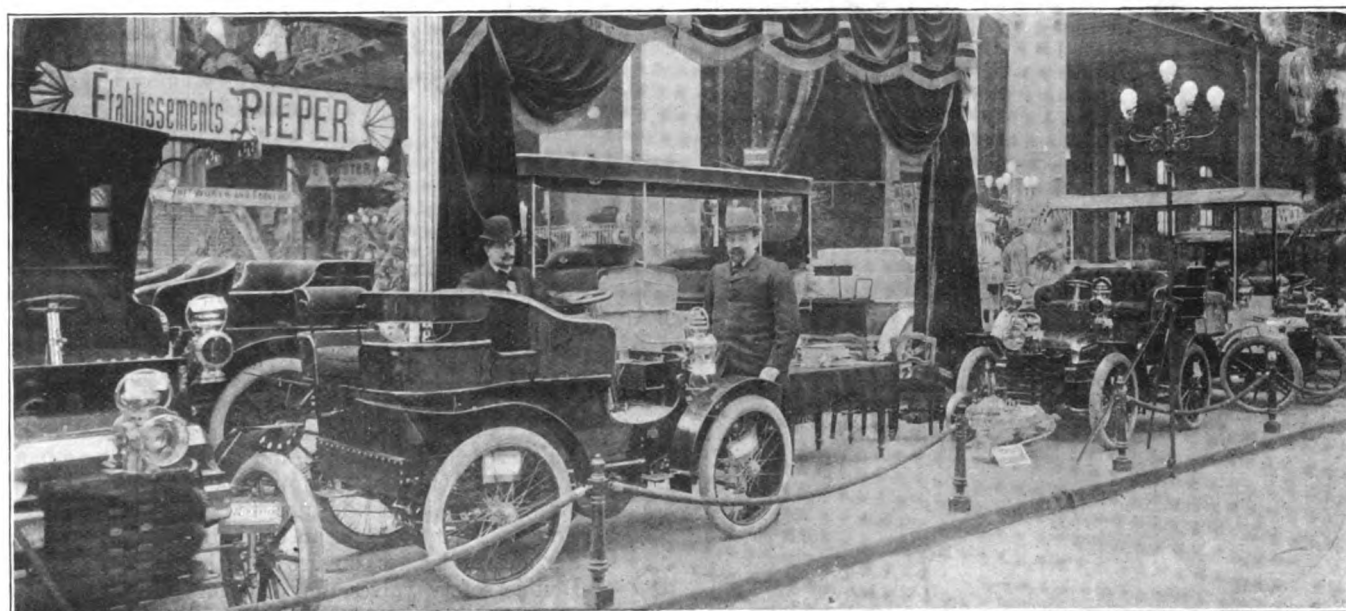


FIG. 1.—GENERAL VIEW OF THE BOLLÉE EXHIBIT. (M. LEON BOLLÉE IS SEEN IN THE CENTRE OF THE PICTURE.)

I HAVE heard a great many people saying that there is little or nothing new in the show, but I think the kind of person who makes this remark wants to make his hearers believe that he knows everything there is to know about motor-cars, or else he only takes a superficial view and sees a great many cars which look and are practically alike, and goes off to the buffet or to listen to the band. For my own part I have been much surprised by the number of new and original exhibits.

M. Leon Bollée, of Le Mans, has been inventing again, and cannot keep to the beaten track, and really what he has produced is most original. He has literally made a motor-car without a

The front wheels run on pins or naves, which form a part of each pillar. The whole arrangement is most original, and I intend to have a run on the car in a few days' time, so that I can give the readers of the *Journal* an idea of how it feels in operation.

The Gillet Forrest 9 h.p. motor has a square instead of a round *culasse*, and it is arranged so as to very efficiently cool the exhaust valve. There is a good device on the car, consisting in a single handle, which turns on or off the water, oil, petrol, and electricity; thus when the car is brought to a standstill, this handle can be

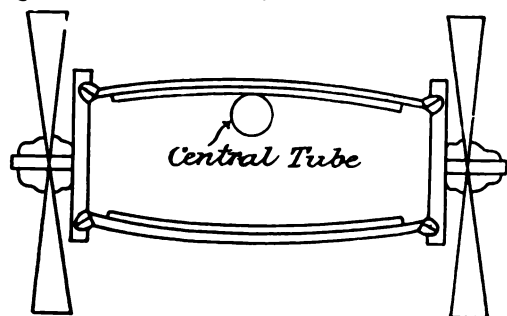


FIG. 2.—DIAGRAMMATIC ELEVATION OF BOLLÉE FORE-CARRIAGE.

frame and without a front axle. This sounds impossible, but M. Bollée has done it, and the car, he states, runs remarkably well. Instead of a frame, a single central tube, Fig. 2, about four inches in diameter, is employed, and the motor crank case and change-speed gear box are hung on this tube. A single chain drives the live axle, containing the differential. The axle supports the back springs, which are attached to two cross tubes brazed to the central tube. In place of a front axle the central tube carries a strong flat spring placed across the car, instead of longitudinally. At each end of this spring is a vertical pillar carrying at its other end a corresponding flat spring, also transversal.

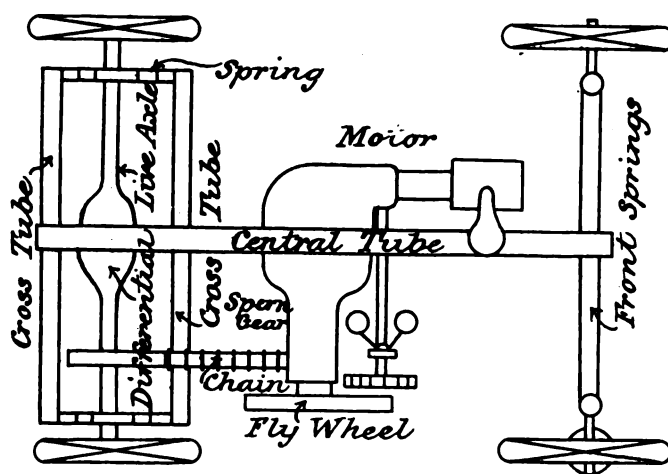


FIG. 3.—DIAGRAMMATIC PLAN OF BOLLÉE CAR.

actuated, and everything is disconnected at once. The handle has an arrangement permitting it to be padlocked in that position, so that no one can interfere with the car in the absence of the owner. Most motorists have experienced the result of forgetfulness in turning on the petrol-tap before starting, and have been puzzled to find their car gradually slowing up before they realised

what was the matter. This one handle prevents such an occurrence.

Perhaps the greatest novelty of the show is the petrol-electric carriage of Champrobert, in which the 8 h.p. vertical motor placed in front drives a dynamo, the current from which passes through a transformer to an electric motor, which drives the back axle: the transformer gives five forward speeds, a stop

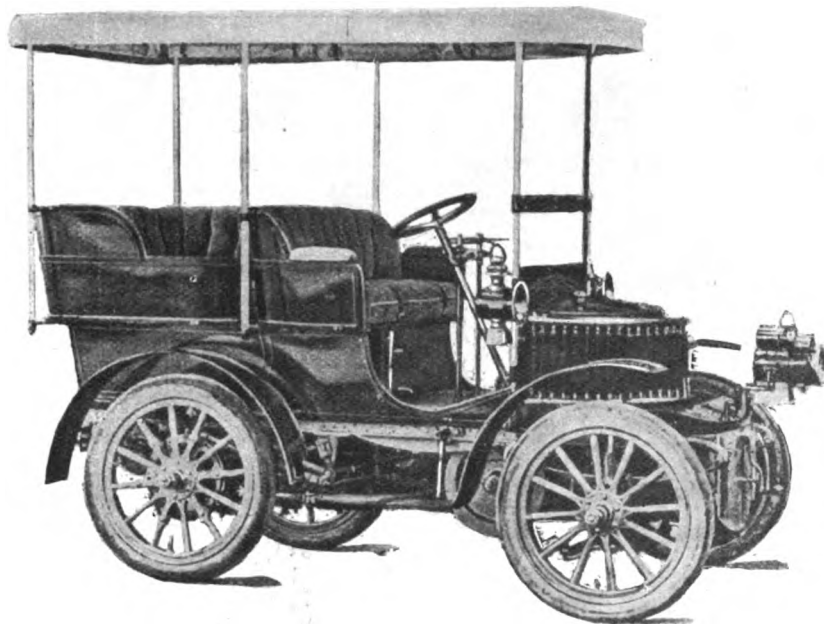


FIG. 4.—THE DE DIETRICH LIVE-AXLE TONNEAU.

position, a reverse motion, and two brakes. The dynamo produces the spark for the ignition of the gases, and lights the lamps of the car. The change of speed is accomplished without any jerk, and there are no gear wheels to wear. The car weighs a little over half a ton, and is said to be able to travel up to 28 miles per hour.

De Dietrichs, in their new models, have done away with the universal joints and bevel pinions by which the back wheels of the car were made to revolve, and have replaced them in the larger type by chains, and in the lighter type by a live axle. They still maintain the horizontal engine in front, water cooling without pump and belt driving, but it is an open secret that new models are being prepared to compete in the Paris-Vienna race next year. The 6 h.p. engine in the live-axle car (Fig. 4) comprises two horizontal cylinders 98 mm. diameter, and runs normally at 660 revolutions per minute. A spray type of carburettor is employed. The power is transmitted by a belt from the motor-shaft to a counter shaft arranged just in front of and parallel to the live axle. The variable speed gear and balance gear are all enclosed in a single casing. Three speeds forward and a reverse motion are provided. The radiators are arranged vertically in front of the bonnet, which is of pointed form. The chain-driven De Dietrich (Fig. 5) is fitted with a 12 h.p. two-cylinder horizontal motor, stated to work equally well with petrol or alcohol. Four speeds forward and a reverse are available. The engine transmits its power to the countershaft by a belt. On this shaft, inclosed in a case, are the change-speed gear wheels, any one of which can be made to mesh with its corresponding spur wheel on a parallel shaft, from which the power is transmitted to the rear road wheels by the usual duplicate pair of chains and chain wheels. The De Dietrich cars are well known in France, and the 1902 models seem likely to maintain the firm's reputation.

Dechamps, of Brussels, has formed a French company, which exhibits his cars, and notably a four-cylinder 20 h.p. geared car, in which the cylinders are 100 millimetres in diameter and

the stroke 130 millimetres. The governor acts on the inlet valve. Each of the four cylinders is separate, in order to cool them more completely, and the cylinder heads are in one casting with the cylinders. The base chamber is in three pieces, the top and the bottom pieces being in aluminium, and the centre piece, which carries the bearings, in bronze. An interesting feature of this car is the novel brake on the hind wheels. The hand brake lever is keyed to a shaft which traverses the car, and which has also keyed to it at each side a quadrant rack working an angle pinion, which causes two longitudinal rods to revolve in one direction or the other, as the hand lever is moved forward or back. These longitudinal rods have each a right and left hand screw at the other end working into two nuts, one of each being fixed to each end of the brake band. Between the two movable nuts is a stop which prevents the rod from moving longitudinally. When it is desired to apply the brake, the lever is moved forward, the rod, therefore, is made to revolve by means of the rack and pinion, and the right and left-hand screws draw the two ends of the brake together by means of the nuts affixed to them. The brake is thus applied very gradually, and is most powerful in either direction. It also entirely prevents the deformation of the brake band, which always takes place with a brake band which is held by one end and applied by the other.

The Locomobile Company of America, show steam cars similar in appearance to the type well known in England, but in order to conform to the French regulations band brakes on the wheels have been provided. Double safety valves, double water columns, and several other modifications have also been introduced.

In my last week's contribution on the subject of the show I mentioned "*à titre de curiosité*," a State motor-car for the Sultan of Morocco. I must not, however, pass over the exhibit of the firm of Georges Richard without alluding to the complete transformation in models and designs which this enterprising firm has made in adopting the Panhard and Mors type of car. They have in these new types a 7 h.p. mono-cylindrical, a 10 h.p. two-cylinder, and a 20 h.p. four-cylinder. The 10 h.p. seems to me to be the most interesting; the cylinders are 100 millimetres in diameter, with a stroke of 100 millimetres. The governor acts on the inlet valve, and there are both hand and foot accelerators, in addition to the advance sparking arrangement; the pump is enclosed and driven by a spur wheel, and is on the wing principle.

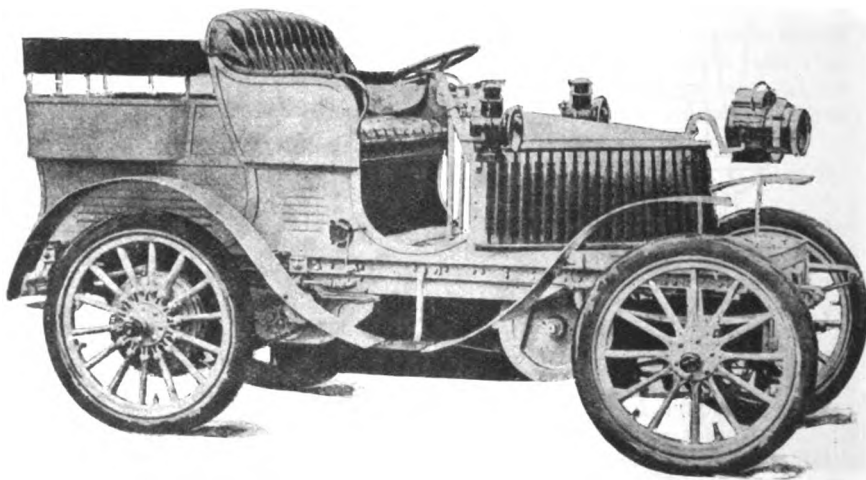


FIG. 5.—THE DE DIETRICH CHAIN-DRIVEN TONNEAU.

A system of automatic forced lubrication is adopted, in which the pressure of the exhaust gases is utilised. The motor is located under a bonnet in the fore-part of the frame, and transmits its power through a friction clutch to the change speed gear box. Three speeds forward and a reverse motion are provided. The three forward speeds are accomplished by the usual sliding gear, the top speed being direct and without gearing. The

reverse motion is obtained by slipping in a pinion on an eccentric shaft. Messrs. Richard claim to be the inventors of the universally-jointed longitudinal shaft as applied to automobiles, and in their latest cars this system is adopted, there being no chains or belts. Any type of carriage body—phaeton (Fig. 6), tonneau, etc.—can be fitted.

Amongst the accessories a new ignition plug certainly claims

gases on the new metal keeps the coil incandescent, and no further attention is required. Thus, accumulators, coils, magnetos, burners, etc., are all discarded at one fell swoop. M. Wydts assures me that he has had a motor running with one of these plugs, for three months, and if so be the case, a revolution in ignition is likely in the near future, and the motorist will be relieved of another serious obstacle to his enjoyment of the pastime

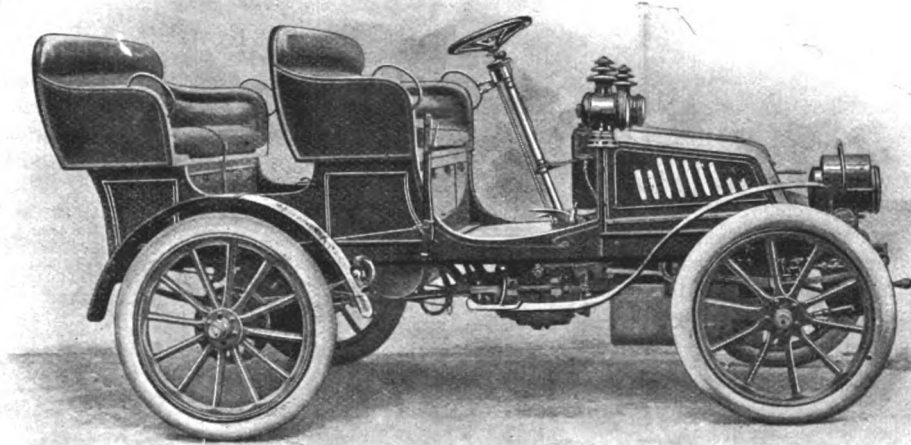


FIG. 6.—THE GEORGES RICHARD 10 H.P. PHAETON.

the first place. It is called the "Allumeur Electro-Catalytique," and is the invention of M. A. Wydts. A catalytic body, I may perhaps be allowed to explain for the benefit of those readers of the *Journal* who do not happen to have come across this word, is one which has the property of becoming heated and even incandescent when surrounded by hydrogen gas, by means of the condensation on its surface of an infinitesimal quantity of this gas. Spongy platinum is one of those peculiar bodies, but it is also very fragile. M. Wydts has discovered an alloy of osmium, iridium, and ruthenium, which constitutes a metal at once extremely porous, absolutely inoxidisable, and able to withstand 1,700 deg. Centigrade of heat, and which has, at the same time, the property of becoming incandescent in carburetted hydrogen, made more or less with azote, oxygen or carbonic acid. M. Wydts's ignition block (Fig. 8) consists, therefore, of a plug very similar in appearance to the ordinary sparking plug, and can be screwed into place in the usual manner. Inside the plug is a little spiral wire coil of this wonderful metal, one end of which

Amongst the new radiators, Messrs. Grouville and Arquembourg have brought out a cylinder with a fan at one extremity. In the cylinder is a coiled radiator with the usual fins; the air is drawn through the radiator, and the cooling thereby more efficiently achieved.

The Aero Section of the exhibition is more of an historical retrospect than anything else, and from this point of view it contains some most interesting exhibits. First and foremost ranks the "nacelle," or basket, of the balloon Dupuy de Lome. It is a relic of the siege of Paris by the Germans in 1870, and was intended as an attempt to communicate with the outside world. The siege was raised, however, before the balloon could be completed, and work was suspended on it during the Commune. It was not until 1872 that it was finished, and experimented with, when it proved to be a complete failure. The car is boat-shaped, and made of strong basket-work with seats at each side. A shaft runs from bow to stern and projects over the latter, carrying at the extremity a huge propeller fan. The shaft is cranked in such a manner that eight men may be able to work it simul-

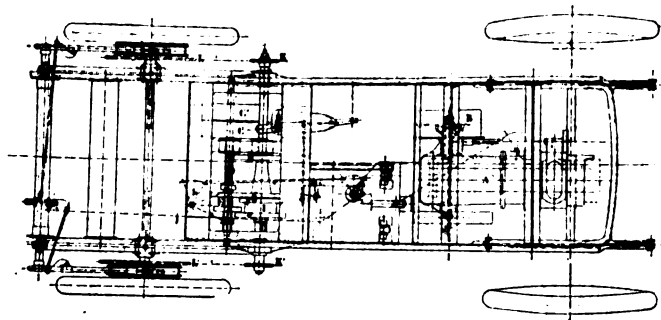


FIG. 7.—PLAN OF DE DIETRICH CHAIN-DRIVEN CAR.

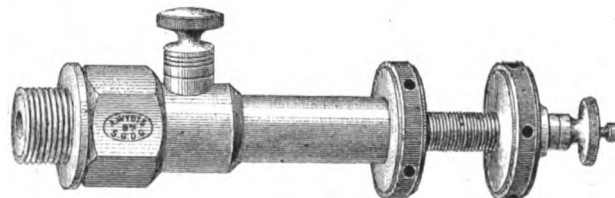


FIG. 8.—THE "ALLUMEUR ELECTRO-CATALYTIQUE."

taneously, and it was intended in this manner to propel the balloon; however, at the first trial it was found that the labour of the crew had little or no effect.

AUTOMAN.

is connected to each of two insulated terminals on the outside of the plug. To these terminals are also attached the two wires of a tiny primary battery (1 volt and 0.5 ampères). The following is the *modus operandi*. The switch of the battery circuit being turned on, the coil of this new metal inside the cylinder of the motor becomes incandescent and the motor can be started. The switch is then turned off, and the continual condensation of the

THE Bavarian postal authorities have decided on the introduction of motor-cars for a quick despatch of letters from and to the mail trains. Munich and Nuremberg will first have a regular motor service between the post-offices, letter-boxes, and mail trains, and as soon as a sufficient supply of cars is available other towns will be similarly equipped.

THE POLICE PERSECUTION OF MOTORISTS.



HOW IT CAN BE STOPPED.

THE police persecution of automobilists and cyclists in certain districts has reached the dimensions of a public scandal, but, so far, no practical suggestion has been made as to the means by which it can be stopped. The machinery for effectually putting an end to it, however, lies ready to hand, although it has not been used. Before describing its nature and the way it can be set in motion, it is desirable to make clear who are the authors of the persecution of which complaint is made.

Clearly it is not the individual policeman who is at fault. Left to themselves, the rank and file of the police are disposed to give their protection and assistance to the users of cycles and motor-cars as freely as to other sections of the public. But they are not left to themselves. The superior powers upon whom they are dependent for advancement incite them to enter upon a persecution which, so far as this country is concerned, finds no parallel in recent times. This persecution can be traced to the action of the county and borough justices, many of whom are members of the local committees controlling the police forces.

of its police force have been efficiently maintained. It follows, therefore, that if it can be shown to the Home Secretary that the discipline of any force is inefficient, then, in discharge of the duties imposed upon him by statute, he is required to withhold his certificate. In that event, the whole cost of the police will fall upon the ratepayers in the locality affected, and the result would be to increase the local rates by several pence in the £1. The question, therefore, that arises is this—can it be shown in the case of any police force that their management and discipline are unsatisfactory? Upon this point there is little room for doubt. Consider for a moment the case of certain forces, and see what is the nature of the evidence that can be laid by the Automobile Club and the large cycling clubs before the Home Secretary as to their efficiency.

Reigate is a borough with a separate police force. This force has made itself notorious throughout the country by the way in which it neglects its proper duties for the purpose of persecuting road travellers. Its procedure seems to be as follows. On those occasions when it anticipates the passage through the borough of a considerable number of automobilists and cyclists, a piece of the roadway, 176 yards in length, is measured off. At the commencement of this measured distance, a policeman in plain clothes is stationed. When a rapid travelling cyclist or automobilist arrives near the spot, a whistle is blown and a stop-watch started. Should the traveller cover the 176 yards in a less

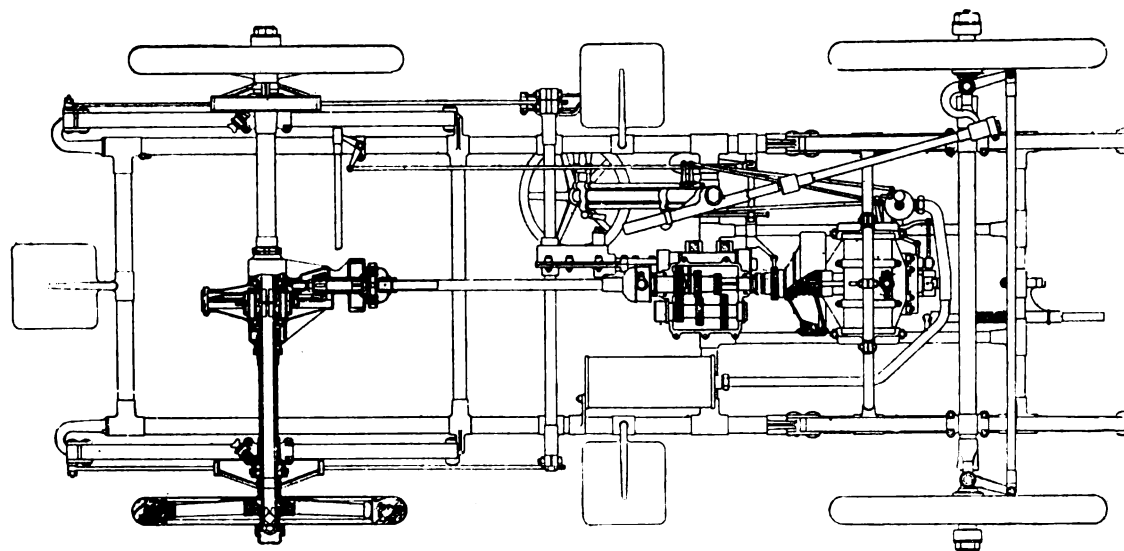


FIG. 1.—PLAN OF RENAULT LIGHT CAR (see opposite page).

In the counties the standing joint committees responsible for the management of the county police are composed one-half of justices and one-half of members of the county councils. In the boroughs, a number of J.P.'s are always to be found upon the Watch Committees. It is these justices who are undoubtedly the prime authors of the persecution of automobilists and cyclists.

Experience has shown that an appeal to the intelligence of the "great unpaid" is likely to be without result. As they were in the days of Shakespeare, so they are at the present time and so they will continue until this country has reorganised its judicial system on a more intelligent plan. But although the great body of J.P.'s may be unmoved by appeals to their intelligence, they are not so unmoved by any action which touches their pockets, and all county J.P.'s are large property owners, directly interested in any question affecting the rates.

It is possible under the existing system of local government to reach the pockets of those J.P.'s who are responsible for the mismanagement of the police. At the present time, one half of the cost of the pay and clothing of every police force in Great Britain, with the exception of the City of London police, is paid for out of Imperial taxation. Before the Imperial contribution is handed over to any local authority it has to secure the certificate of the Home Secretary that the numbers and discipline

time than the policeman considers desirable, another signal is given and immediately five or six ambushed officers line up across the road, stop the unfortunate rider, and take his name and address. Arrangements of a similar character have also been adopted in the county of Surrey by the Surrey police.

As a result of these discreditable proceedings there appeared before the Reigate County Bench on one occasion in September forty-nine motorists and cyclists, and on another occasion in October, sixty defendants, viz., forty-seven cyclists and thirteen automobilists. A number of cases were also taken before the Reigate Borough bench. On all occasions the J.P.'s proceeded to cheerfully fine everyone whose identity could be established. The police evidence was accepted as final and conclusive, although there should be no difficulty in proving to the Home Secretary that it was contradictory and worthless to the last degree. If any man was so ill-advised as to attempt to defend himself, the fine was promptly increased. The heaviest fine, one of £5 and costs, was inflicted upon an unfortunate automobilist who ventured to cross-examine his accusers in an attempt to show that the methods adopted to secure his conviction were most unusual, not to say un-English.

It is quite clear from these facts and others within the knowledge of most automobilists and cyclists that the discipline of these forces is bad and their management worse. It cannot for one moment be contended that the management or discipline of a

force is efficient when that force is systematically engaged in creating instead of preventing offences and in persecuting and hindering instead of protecting and helping the people. A body of police managed on these lines becomes an actively malevolent instead of an actively benevolent power.

The vitiating effect of magisterial incitements to persecution upon the ideas of the individual policeman comes out in the following cross-examination, from which it is very clear that hypocritical nonsense about "duty" is preferred by the magistracy to evidence. It is extracted from a local Reigate newspaper.

Defendant : "You were watching for motor-cars and cycles?"

Policeman : "I was doing my duty and I trust I did it."

Defendant : "There were half a dozen policemen just ahead hiding behind a hedge?"

Policeman : "There were five, I don't know where they were."

Defendant : "And immediately you blew your whistle, they came into your sight?"

Policeman : "Yes."

Defendant : "What sort of arrangement do you call that? Did Captain Sant (the Chief Constable) tell you to do that?"

Policeman : "He told us to do our duty."

Defendant : (to a sergeant) "Did Captain Sant tell you to dress in plain clothes and make these arrangements?"

Sergeant : "Captain Sant ordered us to do our duty and we did it."

Under these circumstances, the Home Secretary should be approached by the Automobile Club, the Cyclists' Touring Club and the National Cyclists' Union, and asked to withhold his certificate of efficiency in the case of those police forces whose discipline leaves so much to be desired. Mr. Ritchie is a strong man who would certainly refuse to sign an undeserved certificate of efficiency.

Supposing the Imperial grant on behalf of the police for the county of Surrey or the Borough of Reigate were stopped, an equivalent sum would have to be found by the ratepayers, and this would mean a considerable increase in the local rates. The result would be that the pressure of the ratepayers upon the local authorities would be quite sufficient to put an immediate stop to the persecutions which now make Surrey notorious. Nor would the effects of such a course be confined to that district. The knowledge that the Home Secretary had withheld his certificate in a single case would have a most salutary influence upon the authorities in other districts who feel inclined to adopt similar practices.

It may be asked whether there are precedents for the course proposed. The answer is—plenty. Since the Act which regulates the police grant came into operation in 1856, many local authorities have had the grant withheld on one ground and another. In recent years, however, there has been a decrease in the number of certificates refused. In practice, the Home Secretary has found it sufficient to issue a warning stating that if such and such things are not done then he will have to seriously consider, etc., etc. It is only quite recently that a warning of this character was addressed to one of the most powerful county boroughs in England, and the Home Office, which does not hesitate to censure the council of a big industrial community, would have no hesitation in dealing drastically with an insignificant non-county borough like Reigate, or even an important county like Surrey.

But it would probably be unnecessary for the Home Secretary to actually go so far as to withhold his certificate. Assuming that the clubs referred to above could lay before him convincing proofs of the persecution of cyclists and motorists in certain districts, and the deteriorating effects of this persecution upon the discipline of the police, he would probably cause a circular letter

to be issued to the various police authorities warning them that when the question of giving or withholding the annual certificates of efficiency came up he would take into consideration any charges supported by evidence which tended to show that motorists and cyclists had been made the subjects of special and unjust treatment. Such a circular would probably have the desired effect.

W. REES JEFFREYS.

THE RENAULT LIGHT CAR.

THE Renault voiturette has won many friends in this country since it was introduced a year or so ago. Keeping up with the times, Messrs. Renault Frères, of Billancourt, France, are bringing out a light car for the 1902 season. Our illustrations give a general view of the vehicle, as also a reverse plan—that is to say, a view showing the arrangement of the mechanism as seen from underneath. The frame, which is both longer and lower than the voiturette, is fitted in the forepart with one of the latest De Dion 8 h.p. single-cylinder motors, having a cylinder 100 mm. dia. by 100 mm. stroke. The transmission is very much on the old lines, the power being conveyed through a friction clutch to the gear box, which is connected by a universally-jointed shaft and bevel gearing to the rear live axle. Three speeds forward and a reverse motion are provided, these being controlled by a single lever at the

right of the driver. It may be mentioned that on the top speed the engine drives the car direct without the intermediary of any spur wheels. The engine is water cooled, the circulation being on the thermo-siphon system, no pump being employed. Ample brake power is provided, while the steering is controlled by an inclined hand wheel. The road wheels are all the same size, 24½ in. diameter, and shod with 80 mm. pneumatic tires. It may be added that the Roadway Autocar

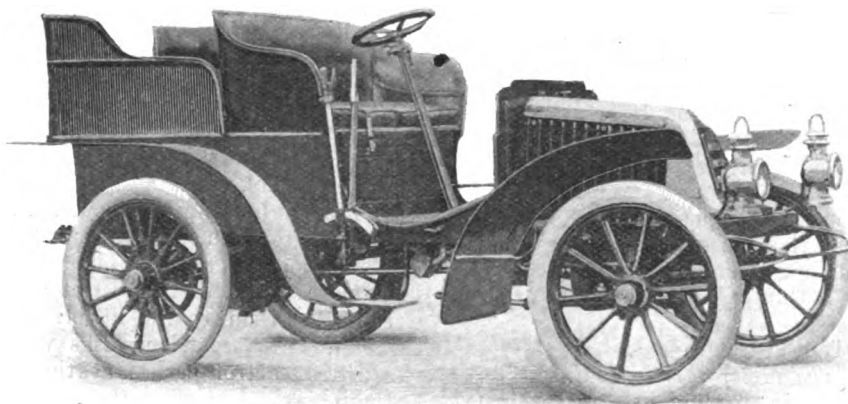


FIG. 2.—GENERAL VIEW OF THE RENAULT LIGHT CAR.

Company, Limited, of 43, Berners Street, W., are the sole British agents for the Renault vehicles.

WE hear that Messrs. Darracq contemplate adopting a magneto-electric system of ignition for their motors at an early date.

WE understand that the proposed run of the English Motor Club to Dunstable on Saturday, the 14th inst., was cancelled owing to insufficient support by the members.

THE Motor Manufacturing Company have just supplied a large motor laundry van to the Egham and Staines Laundry Company, Limited, of Staines. The motor is of the company's standard 7 h.p. type, fitted with tube and electric ignition. The van has a carrying capacity of one ton.

WALKING round the Paris Salon we were struck with the fact that almost every exhibitor of motor-cars had at least one chassis on his stand, with the gear box open, so that visitors could not only examine the motor with ease, but also study the transmission mechanism and get a good idea of the workmanship.

"HAVE you been in the Aero section?" is the question that nearly every Englishman, who has visited the Paris Salon, has asked, on meeting a fellow-countryman. The section was not a large one, but it contained a number of most interesting exhibits, some of the models of dirigible balloons being shown in operation.

CORRESPONDENCE.

MOTOR-BICYCLES FOR 1902.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—In a recent number of the *Journal*, your correspondent, Mr. T. Frederick Hunt, mentions an improvement he added to his Werner in the shape of a *regulator*. This he states greatly lessens the wear on the driving tire. I am sure he would greatly help many Wernerites by giving them details of construction and method of fixing and using it. Such interchange of useful ideas will undoubtedly be greatly appreciated by readers of the *Journal*.—Yours faithfully,

ELECTRICAL ENGINEER.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—May I ask in your *Journal* if it is not possible for British ingenuity to devise flexible joints to cycle frames? Movable joints would absorb the vibrations of the motor, also resilience of two or three pneumatic tires acting irregularly from the unevenness of the road. Springs seemingly intensify the agitative anguish of body and mind in dislocating jolts.

When riding on horseback, however rough the ground, a good rider's mind and body act in harmony with that of the horse, and produce an effect entirely different to the distressing discord of mind and body one feels when riding a motor-cycle. And why the difference? It is because the horse's joints are adapted to preserve himself and rider from violent concussions going over hard ground.—Yours faithfully, W. A. SADLER.

TURNING CORNERS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—May I call attention to a curious error in a paragraph which appears under the heading "Flotsam and Jetsam," in your issue of December 7th. In referring to an illustration in the *Strand Magazine*, the writer ridicules the fact that the inner and not the outer wheels (of a car rounding a corner) are represented as having left the ground. Surely a moment's thought would have informed the writer that the illustration was perfectly correct, and that a vehicle rounding a corner tends to overturn outwards, not inwards.—Yours faithfully, W. H. CLAY.

THE MOTOR UNION.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I was much interested in reading in a recent issue about stimulating automobilists to join the Motor Union. But who outside of actual members know anything about it? Why do not you, or the Union itself, proclaim its existence, address, advantages of membership, and all about it to the hundreds of your readers who know nothing of it? Surely there is a lack of "push" in trying to augment its numbers on the part of its executive. "Flaneur" shows there is need of union, as there is much yet to fight for; but I doubt if that paragraph will be the means of any joining the Motor Union, as it does not enlighten by giving the very necessary information to your readers concerning it—not even its address nor the name of its secretary. So I maintain that the reason of many not joining it who would is because of its obscurity and failure to keep its advantages before all who are interested. Why is this not done? Can anybody be wakened up to do it?—Yours faithfully,

W. J. BARNIKEL.

A HINT RE CHANGING SPEEDS AT NIGHT.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Perhaps the following may be of use to motorists who occasionally use their motor-cars at night. I found it rather difficult when changing gears at night to get the change-speed lever right into the required notch, sometimes pulling it past and sometimes not far enough. To remedy this, I fitted a small 4-volt electric lamp under the steering-wheel of my 6 h.p. Darracq to shine on the change-speed lever, and had a small press switch screwed on to the steering-wheel. When changing speed it is only necessary to press down the button and the notches can easily be seen as in daylight. The lamp is connected up through

a well-insulated flexible wire to the ignition battery? Of course, it could easily be made detachable to enable the motor to be examined at night.—Yours truly,

R. WINTER.

SOME IGNITION QUERIES.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Could any of your readers advise me what to do respecting a Benz car I lately bought from a doctor, who assured me it had not had much wear, although I now believe that it has been worn a good deal, because one of the chains worked off and caused the car to swerve and run into a hedge, upsetting the springs and carriage work. I found the chains were "stretched" and mounted the cogs. I have now got new chains and sprockets. Several times lately when I have gone out three or four miles I have had to push the car home again, as the engine has refused to work. The fault appears to be with the accumulators or the coil. I have read that the accumulators in the course of three or four years wear out. How can I ascertain if mine are worn out? I have had them recharged, but they do not seem to keep the engine going nicely even now. Can they be properly recharged with a V.R. primary battery—the new Leclanche battery—this is what they have been recharged with, and I am uncertain as to its being sufficiently powerful to recharge the four cells?—Yours truly,

PUZZLED.

MOTOR-CARS FOR THE TROPICS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Your correspondent, Mr. P. Fowle, need not feel any anxiety as to his being able to enjoy the pleasures of a petrol motor-car, even if his lot is cast in a country where the temperature is often 90 degs. in the shade. He could use quite safely in such a climate either a steam-car fired by petrol, or a car of the ordinary kind where petrol is exploded in the cylinder of the motor. It is best, however, in a hot country to use a specially distilled petrol of 700 specific gravity. The boiling point of 700 petrol bears much about the same relation to the ordinary temperature of such a country as India as the boiling point of 680 petrol bears to the ordinary temperature in England. It is, therefore, easier to get satisfactory results in a hot country from 700 petrol than from 680 petrol.

Your correspondent asks what the flash-point of petrol really is. Petrol flashes at the ordinary temperature of the atmosphere, or even at the lowest temperature known in this country, but this does not mean that under any circumstances whatever petrol is capable of flashing spontaneously *without the presence of a flame*. What is known technically as the flash-point of a petroleum product is the temperature at which, when gradually heated in an enclosed cup as prescribed in the Petroleum Acts, it will give off such an amount of inflammable vapour as will ignite when brought into contact with a flame. If a flame is not present, petrol may be heated to any temperature and yet can never ignite. Owing to the inflammable nature of petrol itself, and also of the vapour which it gives off, great care is necessary in handling and storing it, but such precautions to avoid accident as a prudent man would take in this country would be amply sufficient to guard against all risk of accident in such a country as India. On the other hand, owing to the climate of hot countries being often extremely trying to horses, especially in the wet season, there should be in such places a great future for motor-cars, as they would fill a want which has long been felt—Yours faithfully,

FOR CARLESS, CAPEL, AND LEONARD,

WM. J. LEONARD.

FRANCE COPYING ENGLAND.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I have just returned from an inspection of the great French Automobile Show which is now taking place in Paris. Although the whole arrangements, both of exhibits, situation and building combined, give a result that I am afraid it will be a long time before we can equal in England, still there were many points that make me feel that England is rapidly catching up the Conti.

nent in the manufacture of automobiles, and in some respects actually ahead. I found no less than three of the big French firms—namely Rochet-Schneider Mors, Panhard exhibiting motors in which were incorporated ideas which, if they did not copy from English motors, they have at any rate introduced into their motors after they had been in use in England for some considerable time. The points which I particularly noticed were first, an almost universal adoption of the choke valve, the credit of introducing which, I think, must be given to the Wolseley Company. The other English improvements which I noticed were incorporated into French engines were: first, on the Rochet Schneider stand, I found the placing of the commutator or contact breaker on the dash board in full view of the driver, with a glass plate for him to see if everything was working perfectly. On the Mors exhibit I found that their most powerful engine was made with an entirely aluminium case and water jacket with steel liners placed inside. On the Panhard stand the valve gear had been placed inside the crank chamber, while electric ignition only is being used on their latest model. Their annoying method of getting at one inlet valve has been replaced by a simple one, and the straight unbroken stems for lifting the exhaust valve have replaced the old spade pieces with their rattle and inaccuracy.

All the improvements that were shown on the three stands mentioned have been previously incorporated in the Napier, and although I myself am not yet a possessor of one, I feel proud to see our position in the industry in such evidently able hands, and who in such a short time have introduced so many improvements that the leading French manufacturers have thought fit to copy or imitate.—Yours truly,

H. A. HECTOR.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Referring to the paragraphs by "Automan," in a recent issue, regarding the different foreign vehicles, in which he says, "Unfortunately England does nothing but copy what improvements are made by others," may I, on behalf of the Napier engine, point out that this is not strictly correct? At the present moment I can mention three or four points in the Napier engine that have been embodied in its construction for a long time, which must be well known to many of your readers, and which have been moreover embodied in some of the very latest French engines. First, the principle of making the whole of the engine-body and crank chamber of aluminium and merely putting inside this a cast-iron liner for the piston to work in. This principle has been adopted by Mors in his racing engine, but was in use by Napier prior, so far as I am aware, to its adoption by anybody else.

Then, again, take the firm stand I have made in refusing to fit lamp ignition. The latest pattern Mercedes, Mors and Panhard engines are fitted with electric ignition only, and Napier did this two years ago. The commutator on the dash-board was also introduced on the Napier, and has been copied by the French firms. Arranging inspection of inlet valves so that only one nut has to be removed. This was first introduced into the Napier, and an almost similar arrangement is to-day in use on the latest Charron and Panhard cars.

Every credit must be given to the splendid machines turned out abroad, but at the same time we may as well ourselves recognise, when we do make an improvement, and when this improvement is also recognised by firms abroad, inasmuch as they copy it, it is reasonable to suppose that the idea has something in it. I thoroughly agree with "Automan's" other remarks, and would like to see other firms than the Napier competing abroad. It gives English makers a very small chance when only one or two cars compete in races with a couple of hundred entries. If every good English firm would send a few cars, English work would quickly be recognised as very satisfactory in many ways.—Yours truly,

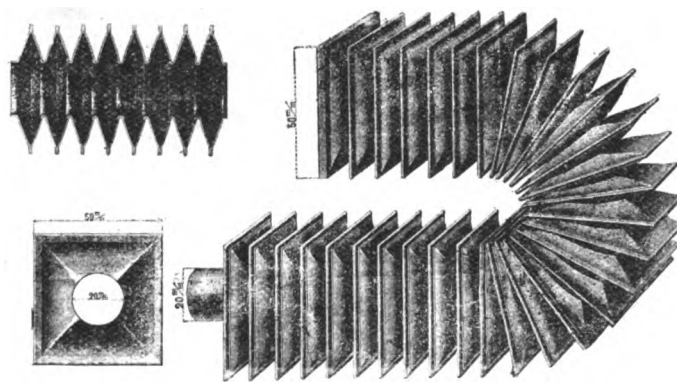
S. F. EDGE.

MESSRS. HEWETSONS', LIMITED, write:—"With reference to the article on the Hewetson motor-bicycle in your last issue, we note you say the 'combined surface carburettor and petrol tank, etc.' This is not quite correct, as there

is no carburettor, a mixing valve being connected directly with the petrol tank. The whole of the working of the machine is effected by means of a lever beneath the left handle, there being only one other lever used, viz., that for controlling the throttle valve when descending steep inclines. We should further like to point out that, owing to the long wheel base, the equilibrium is perfect, rendering the Hewetson easier to ride than the ordinary bicycle."

THE "CALORADIA" RADIATOR.

THE accompanying illustration gives details of a new form of radiator, for use in connection with the water-cooling arrangements of petroleum-spirit motors, which has lately been put on the market by M. Laeis, of Rue Duris, Paris. The construction of the radiator is so clearly shown by the illustration that but little description is necessary. It may be mentioned that the coil is built up of sections of sheet copper; the hollow fins are 2 in. square, external measurement, while the centre halo



is 3 in. in diameter. The radiator can be made in any size and with any number of bends, the weight per metre run being just over 4 lbs. The maker states that he has well tested the "Caloradia" ere putting it on the market, and claims that it can resist a pressure of 75 lbs. per square inch.

THE Antwerp Automobile Club is organising a Christmas tour into Holland.

THE Wellingborough District Council, after inspection of various methods of utilising motor-cars for street scavenging, have decided to purchase a Simpson and Bibby vehicle at a cost of £600.

Two interesting exhibits on the stand of Messrs. Buchet at the Paris Salon are the motor-tricycle on which M. Rigal has lately created new records, and the strange-looking machine of Truffault, of which we published an illustration recently.

NOTWITHSTANDING the disappearance of the public electric cabs in Paris, a visit to the French capital brings to light the fact that electrical vehicles are being used in very rapidly increasing numbers. One cannot go down any of the well-known thoroughfares of the city without seeing half a-dozen electric broughams or landaulets running along.

AN interesting finish to a day's visit to the Paris Salon is an inspection of the large number of cars that are standing opposite the Grand Palais awaiting their owners. Here every practically known type of motor-cars can be seen, ranging from a powerful Panhard down to a little belt-driven Benz car, of which even in Paris not a few are to be seen running about.

ONE of the exhibitors at the Paris Salon is of an ingenious turn of mind. He is showing a new sparking plug, or a new contact breaker—we forget which. Instead of turning a handle, he has got hold of a second-hand sewing machine, on which he has mounted the contact breaker and plug, and while an interesting crowd is gathered round, Mr. Exhibitor is busy working the treadles for all he is worth.

FLOTSAM AND JETSAM.

BY "FLANEUR."



I N a book-shop on Friday I picked up a volume with the title of "The Sport of Kings." It proved to be in praise of fox-hunting. The Warwickshire Hunt Committee notwithstanding, I should be sorry to say anything against a fine old English sport. All the same, I could not help thinking that the time was not far distant when the sport of kings *par excellence* would be automobilism. Already it is well on its way towards that consummation. The Tsar, the German Emperor, the King of the Belgians, the King of Italy, and, last but not least, our own King, Edward the Seventh, make up a very formidable list; its augmentation is only a matter of months now, and if motor-car driving is not recognised ere long to be pre-eminently a regal sport let me be written down a false prophet.

THAT King Edward has decided to treat himself to a new car is from every point of view a matter of the greatest possible satisfaction. In the first place, it indicates in incontrovertible fashion that his ardour as an automobilist is unabated, and the fact that the new vehicle is to be of double the horse-power of his present cars is further confirmation of his zest for speedy locomotion. In the second place, the power of the car is equally a proof of the fact that the King has no sympathy with the reactionary folks who would do everything in their power, and a good deal more if they could, to throttle automobilism at every opportunity. Further, it is a standing rebuke to those who affect to think that motor-car driving at anything more than equine rates of speed is dangerous to all concerned; naturally, the King knows the value of his life to the State, to his family, and to himself, and would not jeopardise the safety of the royal person, nor, on the other hand, would he imperil that of others, by the employment of an obnoxious form of locomotion. But best of all is the King's determination to encourage the native automobile industry. It is no small feather in the cap of the Daimler Motor Company that they have secured a further order from His Majesty, for it reveals clearly enough his faith in English motor-car building, and his satisfaction with the particular make of car which he has used to such practical effect during the past year.

It will be singular indeed if the royal example does not have a quickening effect upon society, whose members, it may be inferred, are not all as conservative as the Committee of the Warwickshire Hunt or the stewards of those race meetings at which motor-cars are banned. I am sanguine enough to hope that it will not be long before an English automobile show will attain the dimensions and the diversity alike of the Salon now concluding on the other side of the Channel, and, what is more, I am confident that the day will also come when the exhibits will be as strictly national as those in Paris. It is impossible for the present, however, to dismiss the recollections of the French show from one's mind. No words can convey to those who did not cross from England the real brilliance of the spectacle, and its revelation of the strength of the automobile movement in France. Then, again, the class of the visitors, notwithstanding the huge attendances, was distinctly high from day to day, and stand-holders could testify from their order-books that curiosity was not the main motive which influenced large numbers of the well-dressed crowds.

A PORTION of the Salon which many probably failed to explore was the *sous-sol*, or basement, in which a good deal of machinery was at work, the main proportion of which was running on alcohol. It is clear that the French authorities are doing everything they can to encourage the use of alcohol for internal combustion motors, and the alleys leading to the basement were even lined with beetroots and kindred products, as though it were an agricultural show. What the economic value of alcohol may ultimately be shown to be, as compared with petrol, it is unwise to prophesy.

but I am bound to say that the super-sensitive persons who object to the odour of petrol will have much more substantial cause of complaint if alcohol comes to be generally employed. The odour prevalent in the *sous-sol* was undoubtedly acrid, and far more potent than the most heavily charged exhaust from a petrol motor.

So excellently managed was the French show in most respects that it is not ungenerous to offer a little criticism, for which, indeed, there is little cause. But it is much to be desired that the organising committee will condescend to give us a decent catalogue next year; the existing style has been tolerated long enough. Even if a gratis production, it would be unfit to place in the hands of the public; but for a franc one would expect something with some pretensions to being of service. It is no misuse of words to describe the official catalogue as an absolutely farcical production, quite unworthy of any show, much less one of the finest to be held in any country in connection with any industry whatever.

ONE other matter calls for passing comment. One fails to understand the exaggerated prominence given to the steam wagon and the statue of Vercingetorix. In England we should think nothing of hitching the latter behind a traction engine or putting it on a Thornycroft trailer and convey it to its destination without more ado. As a work of art the statue was interesting enough, but that was not the object of its being exhibited, and indeed it was too closely packed in wooden supports to be seen to the fullest advantage. Yet the authorities placed the wagon and its sculptured load in the very centre of the main alley, as though the combination were the *piece de resistance* of the show.

IN referring to the fact that an American *chauffeuse* has lately passed her examination as a motor-car driver, a contemporary erroneously observes that she is the first foreigner of her sex to obtain the driver's licence required by the French Government. That honour, as a matter of fact, can be claimed by Miss Vera Butler, who gained the coveted certificate many months ago, as reference to facsimiles of the documents which were published at the time will show. When officialism casts its eye upon the doings of the aeronaut, no doubt the intrepid Miss Butler will qualify in that capacity also, as she has made several ascents along with her father, both in England and in France.

WHAT did the exhaust box? The inflated tire.

QUITE a number of firms in France are studying the tire question, and not a few tires are to be seen at the Salon, by which the demons puncture and skidding, it is claimed, are conquered. A novel tire, which we hope to illustrate in an early issue, is the Pneu-Ferré. The tread of this tire is covered with small steel plates, which give it a very strange appearance; we, however, hear it favourably spoken of.

A FIRE broke out on Wednesday night last week at 97 and 98, Long Acre, W.C., upon the premises of the British Automobile Commercial Syndicate, Limited. The premises are comprised in a building of five floors, extending 60 feet in one direction and 30 feet in another. An acetylene lamp was accidentally upset on the third floor, and a serious fire followed, which was not checked till the floor and its contents had been severely damaged. A man named Rowland Le Bars was badly burnt in endeavouring to overcome the fire in its early stages.

WESTON MOTORS, 14, Mortimer Street, London, W., inform us that they are about to place on the market a four-seated Weston "Dos-à-Dos" steam car, in response to a demand amongst their customers for a vehicle which will comfortably accommodate four passengers, whilst being a good hill-climber as well as a fast traveller. They claim to have been the first in the United States to design a "Dos-à-Dos," and though shipments of this model to this country have been somewhat delayed, owing to the demand on the other side, they hope to have four-seaters on view early in the New Year.

HERE AND THERE.

WHY was the tire inflated? Because the gear was deferential (differential).

THE import duty on motor-carriages in France is 60f. per 100 kilos., say £1 5s. per cwt.

THE Automobile Club of America is about to establish a Club garage for the use of its members.

IN the January number of the *Badminton Magazine* "The Motor-Car Question" is dealt with by Mr. Alfred C. Harmsworth.

MESSRS. J. PARR AND COMPANY, of Leicester, have just completed a 6 h.p. four-seated *tonneau* to the order of Lord Harrington, of Elvaston Castle.

MR. WILLIAM K. VANDERBILT and Mr. Foxhall Keene, two well-known American *chauffeurs*, have, according to reports, cabled their entries as competitors in the Paris-Vienna race.

TOD SLOAN, the well-known jockey, was among the many visitors to the Paris Show, where, we understand, he placed an order for a 20 h.p. Boyer car.

MR. GEORGE M. HOLLEY, of the Holley Motor Company, Bradford, Pa., made a record on the Stadium track at the Pan-American Exposition recently, riding three miles on a Holley motor-bicycle in 5 min. 7 sec.

DR. E. LEHWESS recently took the editor of the *Outlook*, whose ode to motorists we reproduce in another column, for a spin on a Durkopp car. As a result he has become quite a convert to automobilism and has already ordered a motor vehicle.

MECHANICS in the employ of automobilists in New York City have organised the *Chauffeurs' Club of America*, with headquarters at 1684 Broadway, New York. Drivers wishing to become members must be expert operators of petrol carriages.

WE learn that Mr. J. W. Stocks, of the Ariel Motor Company, has been appointed manager of the De Dion-Bouton Company, Limited, 23, Brook Street, London, W., and that he will take up his new duties on the 1st. prox.

THE Daimler Motor-Car Company, Limited, are building a new motor-car to the order of the King. It will be fitted with a four-cylinder motor of 22 h.p., and will have a special *tonneau* body capable of seating six persons at the back.

WE learn from a correspondent that the interest in motor-bicycles is rapidly growing in Cape Town, and, judging by the progress made during the last few months, 1902 ought to see a boom in this particular class of motor-vehicle in South Africa.

A VERY handsome calendar has reached us from Messrs. Brampton Bros., the well-known chain makers. It is a veritable work of art, the colouring of the female bust, which is the central feature of the calendar, being excellently executed; in fact, the calendar is suited even for a drawing-room.

A HOVE correspondent writes, asking us to mention for the benefit of the driver of a private Panhard car, which passed through that place on Sunday morning last, that the black dog he ran over—or rather caused to be run over—died a few seconds after the accident.

A BRIGHTLINGSEA correspondent reports a curious automobile incident. A gentleman was riding in that town when a large dog charged his car and overturned it. The driver, who was pinned beneath the vehicle, was fortunately unhurt, though the car suffered somewhat severely.

THE Brush Engineering Company, Limited (Automobile Department), of Donington House, Norfolk Street, Strand, have acquired the sole agency for Great Britain for the motor-cars made by the Société des Anciens Ateliers P. Sage, of Paris. At the Paris Show this company is exhibiting a 10 h.p. car, fitted with an Abeille two-cylinder motor.

BAS MEUDON, a suburb of Paris, has for some time past been the scene of operations of a gang of blackmailers who, personating detectives, stopped cyclists, carriages, and automobiles carrying no lights, etc., and demanded money for not prosecuting.

Four years' imprisonment has been awarded to the enterprising members of the gang recently captured.

THE Edinburgh Auto-Car Company, Limited, has issued a circular to the effect that the requisite amount of Preference shares (5,000) not having been subscribed for, an extraordinary general meeting will be held on Friday, the 27th inst., to pass the following resolution: "That this company be wound up voluntarily."

THE Prefect of Police in Paris it is stated recently received a letter stating that the writer—a woman—was tired of life and about to commit suicide. The Prefect immediately despatched an officer to the address in an automobile, who arrived just in time to save her. She was at the moment engaged in fixing a rubber tube on the gas burner in her room, her intention being to put the other end of the tube in her mouth and thus asphyxiate herself.

AT a recent meeting of the Tunbridge Wells Farmers' Club the motor-car and traction engines received a warm benediction. Mr. G. Arnold, of Frant, ably defended the new system against what he called the unreasoning prejudices existing in many quarters, and he said that legislation, so far, was very grandmotherly in imposing vexatious restrictions upon the owners and drivers of motor-cars and traction engines. Especial emphasis was laid by several speakers upon the value of motor conveyances to outlying farms.



MOTORIST TO TRAMP HE HAS JUST KNOCKED DOWN:—"While down there, you might just see if any bolts have come loose!"

[Das Schnauferl.

UNDER the heading of "Action to Recover Commission," there appeared in our issue of last week an account of an action, *Kesterton v. Marshall*, in which by the transposition of the words plaintiff and defendant some inaccuracy occurred. In the first place, it was the defendants and not plaintiffs, as stated, who were to pay 5 per cent. commission on the business done in motor-cars. Further, it was defendants not plaintiffs, as stated, who were ordered by the Court to supply plaintiffs and not defendants with an account of all business done in motor-cars, under the contract referred to.

THE casualty statistics for France during the month of September, published by the *Velo*, show no fatalities due to motor-cars. The horse, as usual, heads the list with 63 deaths and 758 injuries; the railway comes next with 16 fatalities and 79 injuries; the bicycle has 8 deaths to answer for, and 63 injuries; and the motor-car only 44 injuries. Of the deaths 72.40 per cent. are due to the horse, 18.40 per cent. to the railway, and 9.20 per cent. to the cycle. Of the injured the horse claims 80.30 per cent., the railway 8.37 per cent., the cycle 6.67 per cent., and the motor-car 4.66 per cent.

CONTINENTAL NOTES.

BY "AUTOMAN."

SEVERAL Englishmen have asked me this week to define *carrosserie limousine*, and as the mode nowadays seems to be setting in in that direction it may be useful and interesting to the readers of the *Journal* to know exactly what the definition is. A *limousine* body is one which has an open front for the driver's seat and a closed *coupé* behind for the passengers. It is a most rational and comfortable arrangement, and I think it will become as popular on the English side of the Channel as it is on the French side.

JUST before the close of the Paris show every evening there has been a representation by the cinematograph of certain parts of the Paris-Berlin motor-car race, and, curious to relate, in some cases the wheels of the cars are seen to revolve in the wrong direction. A friend of mine spoke to Lumiere, the inventor of the cinematograph, on the subject, and gave me the following explanation. When the spokes of the wheels are travelling exactly at the same speed as the films in the photographic apparatus, every succeeding spoke will take the position on every succeeding film which was occupied by the preceding spoke on the preceding film; therefore, the wheel will appear stationary, *i.e.*, always in the same position, since all the spokes are alike; but should the films travel quicker than the spokes, then every succeeding spoke will not quite have reached the place occupied on the preceding film by the last one, therefore the wheel will appear to revolve backwards.

THE financial success of the great firm of Panhard and Levassor is the talk of automobile circles, and it is really phenomenal. After paying 5 per cent. interest, a dividend of 30 per cent. has been distributed to the shareholders, and in addition the whole of the machinery has been written off. A friend of mine had three hundred shares of £400 each a little more than a year ago, and sold them at little over par. He is now regretting the income of £4,000 and odd that he would have been drawing, for he put the whole of it into another motor-car business and lost it. As far as future prospects are concerned the firm is just as full of orders as ever, and is obliged to turn customers away and tell them to apply to the middlemen.

A SECOND contingent of members of the A.C.G.B.I. arrived in Paris on Friday last week, and I ran into Messrs. Edmunds, Manville, Gorham, and I heard of Colonels Holden and Templar being seen. At the A.C.F. at lunch-time I had the advantage of making the acquaintance of Mr. Martin, who has just taken over the management of the Daimler Motor Company's Works at Coventry, with whom I had some long and interesting discussions on motor matters, whilst walking round the Show examining the various exhibits. It would seem, from what I learnt from Mr. Martin, that at last the Daimler Company is going to wake up, and not be content with copying the ponderous models of ancient history, wherein the poor motor had to carry about with it an "old man of the sea" in the shape of useless lumps of metal, which neither added to the beauty, nor to the comfort, nor to the stability of the car. As far as I could gather—and I warn the readers of the *Journal* that I am quoting my impressions of a conversation (Mr. Martin's may be quite different)—without altering in principle, modifications consistent with sound engineering practice will be gradually incorporated in the new cars, and whilst due attention will be paid to the gathering of improved ideas from the Continent, original improvements will not be wanting. It is only a small step from this point towards producing a car which can compete honourably for the Gordon-Bennett Cup, and redeem the fiasco of last year, and the apathy which seems to surround the prospects for 1902. If I may humbly give the Daimler Company a word of shall I say "encouragement" or "advice," I would point out to them that every dividend-paying concern engaged in the

manufacture of automobiles, I may say almost without exception, owes its position to success in international competitions, which brings in its wake large orders not from private users alone, but principally from the middlemen, who order quite a series of cars. These orders enable the manufacturer to repeat exactly the same article numbers of times over, while all his attention can be devoted to the designs and improvements for the trade of a year later. It is hardly possible in this complicated trade for a firm to make money if they have to make special improvements and alterations for every individual cranky customer. It wastes everybody's time and no "extras" can cover the loss.

IN my last week's "Continental Notes" I referred to a new invention which has the advantage of doing away with the exhaust of explosion motors. Thanks to several short conversations with my friend and colleague, Paul Meyan, of *La France Automobile*, I am able to give the readers of the *Journal* a few further points on what is certainly an important discovery.

THE inventor is Monsieur G. F. Joubert, doctor of science, and formerly professor of chemistry at the Ecole Polytechnique. M. Joubert has been working for some years with the object of producing a complete apparatus whereby the artificial air may be supplied to the lungs of a human being and the carbonic acid gas which is exhaled from the lungs condensed or absorbed. In a word, he has been searching for a "breathing cycle" and he has found it, inasmuch that by means of his apparatus he has experimentally sustained respiration for hours together without the aid of the atmosphere, either for the supply of the oxygen or for the taking away of the waste gases. The patient draws in artificial air from one end of the cycle and sends out the vitiated air at the other without the slightest inconvenience. The oxygen is produced by means of a substance called "oxylithe," which is similar in appearance to the calcium carbide employed in an acetylene lamp, and by a chemical reaction the carbonic acid gas or vitiated air is absorbed. The object of the inventor was to find a substitute for the air pump used by a diver and to free him from the dangers and inconvenience of the air tubes, and it was also thought that it might be of service to firemen going into smoke-filled rooms to save life. The idea of trying its application to explosion motors came later, and the Baron von Zuylen borrowed a motor from the Marquis De Dion and caused it to be experimented with. The motor was one of the well-known 1½ h.p. type, and so successful was the result of the experiments that three other larger motors were tried, with the astonishing result that they not only worked perfectly, but also produced a saving of 30 per cent. in the fuel employed, or rather in the explosive vapour.

EXPERIMENTS on a very large scale are being made, and the importance of this invention cannot be minimised, for its use, for example, in submarines is self-evident. The motor would neither take away the air which is so necessary for the crew nor would it vitiate it with an exhaust.

MESSRS. G. STRAUS AND CO., LIMITED, 211, Upper Thames Street, London, E.C., have been appointed sole agents for Great Britain for the Aachen Stahlwaaren Fabrik. The concern make a speciality of petrol motors and parts for motor-cars; change speed gears, back axles with differential gear, transmission and Cardan connecting rods.

THE General Electric Company, Limited, have, under the name "Ignis," put on the market a new accumulator for ignition purposes. They are made up in little polished wood cases containing four cells, complete with leather strap and terminals. It is claimed that they can be given a very excessive charge or discharge without injury or buckling of the plates, and that they are generally very efficient.

BRAKES.

IT has often been remarked that going uphill and going downhill constitute the most difficult parts of motor-car driving and there is undoubtedly a large amount of truth in this remark. Travelling uphill is certainly difficult to the novice, but travelling downhill presents features of difficulty and sometimes of danger to others than novices. A large number of cars (gear-driven) are fitted with that doubtful combination of the brake withdrawing the clutch, and to the writer this device does not seem altogether satisfactory. There are a large number of drivers who, when they come to a hill, simply go down on the brake and should the particular brake they happen to be using fire or in any other way fail to act, fall back upon the emergency brake. This method of using brakes is brought about by this peculiar combination of a brake releasing the clutch. Surely it is quite easy to release the clutch with one pedal and apply the brake with the other, and then if the hand brake does not release the clutch there are three good brakes on the car. (1) The engine. (2) The foot brake. (3) The hand brake.

Using the engine as a brake is a practice adopted by many, but it must be remembered that this method of braking can only be conveniently used when electrical ignition is adopted. The method is this. When a really steep and dangerous hill is reached, put in the slow speed, start down the hill and shut off the spark. By this method it will be found that nine hills out of ten can be descended without touching a brake. Of course it will be found on hills of extreme steepness that the car will begin to overrun, but then there are both brakes to fall back upon. The writer feels confident that the adoption of this method would add considerably to the life of the brakes and also avert many accidents. Concluding, the writer will say a word or two about travelling uphill. The majority of accidents happen from the result of missing gears, which very often means a run back to destruction. A sprag, it is true, may be used, but a sprag has been known to "skip" before now, especially on very smooth roads and wood paving with tramlines. If a really good back-acting brake is fitted, an accident may be averted; if it is not, by far the safest way of ascending the hill, especially if the hill is in a town or not very well known, is to start with the lowest speed in and go straight up.

R. A. C.

JUDGING from what we saw at the Paris *Salon*, there are likely to be some rubbishy motor-bicycles on the market shortly, and intending motor cyclists will do well to look askance at some of the very cheap machines that are likely to be offered to them. Quite a number are on view at the *Salon* at prices of about £26 complete, but from what we could see from a casual inspection they are very dear at the price.

M. JESUS DURO, a Spanish automobilist, has recently successfully completed a fine run from Madrid to Paris. The journey from Madrid to Saint Jean de Lux was undertaken alone, and occupied three days. Leaving the latter place at 9 a.m. on Friday, November 29th, accompanied by M. Claverie, Bordeaux was reached at 5.20 the same evening. The following day, starting at 7.45 a.m., the two *chauffeurs* arrived at Tours at 9.50 p.m. Starting at 7.20 on Sunday morning Paris was reached at 2 p.m. Considering the unfavourable season, the journey was a remarkable achievement.

WHAT promises to be one of the most interesting features connected with automobile racing has, remarks an American exchange, been quietly worked up among the prominent members of the Rhode Island Automobile Club, ten of whom have placed orders for 20 h.p. Winton vehicles, each of which is to be exactly like the other, and to be specially adapted for high-speed running. The vehicles are to be delivered by March next, and it is the intention of the owners to arrange a series of contests between the carriages. As all the vehicles are theoretically equal, each driver will have an opportunity of showing his skill and ability in driving.

IMPORTS OF MOTOR-CARS, CYCLES, AND PARTS.

BELOW we publish our monthly official list of the imports of motor cars and cycles and parts thereof into the United Kingdom during November, 1901.

Port.	Whence.	Description.	No.	Value.
				£
London	Antwerp	Electric motor-car	1	85
"	"	Motor-cars	4	680
"	Bordeaux	Automobile engine	1	50
"	Boston	Automobiles	2	239
"	Boulogne	Motor cars	7	2,850
"	"	" cycle	1	80
"	Bremen	" wagon	1	808
"	Brussels	" cars	3	250
"	"	" car frames	6	293
"	Calais	" cycle	1	26
"	New York	Auto-carriage	1	250
"	"	Automobiles	10	1,184
"	"	Locomobiles	8	1,130
"	"	Motors	2	319
"	"	Motor car	3	300
"	"	" cycles	2	80
"	Ostend	Motors	8	867
"	"	Motor accessories	—	980
"	"	" cars	2	420
"	"	" cycles	6	145
"	"	Motor car parts	—	10
"	Paris	Motor car	1	120
"	Rotterdam	" cars	4	340
"	Terneuzen	Tires	—	5
Liverpool	Boston	"	—	22
"	Havre	Motor car	1	140
"	New York	Automobile	1	120
"	"	Motor cycles	6	132
"	"	" trucks	2	120
Dover	Calais	" cars	2	1,480
Folkestone	Boulogne	"	29	6,580
"	"	" parts	—	704
"	"	" cycles	—	190
"	"	" tri-cycle	1	40
"	"	" cycle parts	—	357
"	"	" cycle and parts	1	210
Goole	"	"	1	60
Grimsby	Antwerp	Automobile	1	286
Harwich	"	Motor cars	2	160
"	"	" parts	—	157
"	Hamburg	" car accessories	—	15
"	Rotterdam	"	1	200
Newhaven	Dieppe	Motor cars	32	8,854
"	"	" parts	—	1,198
"	"	" cycles	3	180
"	"	" tires	—	218
Queensboro'	Flushing	Motor car	1	750
Southampton	New York	Automobiles	5	890
	Total value,	November, 1901		£34,574
	" "	October, 1901		£45,441

IN THE WINDING UP COURT.

In the matter of Pennington Motor Foreign Patents Syndicate (Limited) (in Liquidation).—Notice is Given, that the creditors of the above-named company are required, on or before the 31st day of January, 1902, to send their names and addresses and the particulars of their debts or claims, and the names and addresses of their solicitors (if any), to Mr. Wm. Roger Caldwell Moore, of 142 and 143, Palmerston Buildings, Old Broad Street, London, E.C., the liquidator of the said company, and if so required by notice, in writing, from the said liquidator, are by their solicitors to come in and prove their said debts or claims at such time and place as shall be specified in such notice, or in default thereof they will be excluded from the benefit of any distribution made before such debts are proved.

The Thames Valley Motor-Car Company (Limited).—The creditors of the above-named company are required, on or before the 1st day of February, 1902, to send their names and addresses, and the particulars of their debts or claims, and the names and addresses of their solicitors (if any), to Mr. Desmond Forde, of 75, Aldermanbury, in the City of London, the Liquidator of the said company, and if so required, by notice in writing from the said liquidator, are, by their solicitors or personally, to come in and prove their said debts or claims, at such time and place as shall be specified in such notice; or in default thereof they will be excluded from the benefit of any distribution made before such debts are proved.

ODE TO THE MOTORIST.

WHEN men have nightmares, they dream about you.
I myself have been chased over the tops of pinnacles
By flaming-eyed Panhards and Durkoppes
In my sleep.
Nor is this all,
For if one brings oneself
To read reports of the proceedings of police-courts
One finds that the average citizen
Gets more or less chased by you, sir,
In his waking moments.
The Police I know, my dear sir, seldom speak the truth:
They remember so well the day
When a horseless carriage had to be taken through the street
At the speed of a funeral march,
And with a red flag in front of it,
That the spectacle of an affable motorist
Bowling through a Surrey village
To the tune of six miles an hour
Shocks their imagination,
And they believe for the rest of their natural lives
That the affable motorist aforesaid
Must have been travelling
At the rate of anything from 60 to 600 miles per minute.
Hence, my dear motorist,
It comes to pass that you are afforded so many opportunities
For airing your eloquence and the fatness of your purse
Before the police magistrates.
In my opinion it seems just possible
That the real trouble lies in the fact
That you, my dear sir, do actually
Go through villages at a very low speed,
And that really the best thing you could do
Would be to make a point of going through them
At the highest speed consistent
With the safety of your own person.
For if you did this,
No policeman of my acquaintance would be able to catch you
Hence you would never be fined.
I have been out of sympathy with motor-cars
Right up to the other night.
The other night I had the felicity to take a small trip on one
The motorist would fain have driven me to my house,
Which is half-an-hour's cab drive from Charing Cross
He offered to do the distance in ten minutes
And started stirring up his petroleum,
But I said "No! Let us go to the Marble Arch."
We went through the Mall, to Hyde Park Corner, to South Kensington, to
Paddington,
Into the Edgware Road, and so to the Marble Arch;
Time, at the outside, 15 min.
I am willing to admit
That we went down certain streets quite rapidly,
What time the policemen at odd corners stared stupidly,
And fumbled for their notebooks.
But, as a result of that trip, my dear sir,
I have become an enthusiastic motorist.
I am convinced that speed and wind and the smell of petrolism mixed
Is the only thing which can be considered worth living for.
And if you happen to know anybody
Who would be willing to take
A typewriter and a pair of skates (not much worn)
In exchange for a Durkopp racer,
Kindly communicate with me.

The Outlook

MOTOR-CAR AND DOG-CART.

AN interesting action for damages arising out of the alleged fright of a horse by a motor-car came before Mr. Justice Bigham at the Birmingham Assizes last week. The plaintiff was Helena Gertrude Brockington, and the defendant, Henry Sagar, of Sowerby Bridge. According to the statement of Mr. Shakespeare, who appeared for the plaintiff, Mrs. Brockington, on the 27th June this year, was driving a horse and dog-cart with her husband and a gentleman along the Burton and Lichfield Road, and when between Bear's Hay and Fradley she saw a motor-car approaching from the opposite direction, coming down an incline, at a terrific rate. The horse began to show signs of being frightened, and Mr. Brockington put up his hand for the motor-car driver to stop. Instead of stopping he stooped down, pulled a lever, and dashed past the carriage at a tremendous pace. The result was that the horse swerved, threw over the carriage, and smashed it, and, as one of the witnesses put it, the occupants of the dog-cart were "strewn on the floor," and Mrs. Brockington was injured. Witnesses having been cross-examined, and Mr. Southwood, a jobmaster, having deposed as to damage to horse and trap, Henry Sagar, the defendant, denied that he had been negligent, and that he had been requested to stop. On the other hand, he contended that the plaintiff had not the horse under proper control.

When it jumped across the road in front of his car, she pulled the horse backward into the ditch, and so overturned the trap herself. It was not true that he was going at the rate of twenty-five to thirty miles an hour. The extent of the car's capacity was only twenty miles an hour. Albert and William Ellis, who were fellow-passengers in the car, contended that the motor would not be going more than ten or twelve miles an hour at the time of the accident. His Lordship, who said the case was a simple one and had taken a great deal too much time in hearing, told the jury to let the damages be quite moderate if they found for the plaintiff, and not to take her view of the matter at all. After private consultation the jury found for the plaintiff, and awarded her £30 damages.

FURIOUS DRIVING CASE.

At Edinburgh, Alexander Rose, a motor-car driver, was charged with having on the 23rd November driven a motor-car recklessly and carelessly in Atholl Crescent and West Maitland Street. The evidence of several constables was given for the prosecution. They stated that the accused's car was timed between two points, and covered a distance of 440 yards. The journey was accomplished in one minute, which was at the rate of fifteen miles an hour. Expert witnesses were called for the defence, and Mr. W. M. Lapsley, Mr. Sleigh, of the Rossleigh Motor Company, and Mr. Camague, who were on the car on a subsequent trial trip, gave evidence to show that the car could not run at the rate of fifteen miles an hour. Mr. Lapsley gave it as his opinion that it was impossible for the constables to time the journey with ordinary watches. On the trial trip the car, urged to its highest speed, only reached the maximum speed of 12½ miles an hour on a macadamised road. Mr. Sleigh stated that the car in question was an old one, and was driven by oil, which meant that it could not exceed the speed to which it was geared. All the witnesses agreed that a quarter of a mile was not a sufficient distance in which to test a car. Bailie Waterston reserved judgment.

MAKING OF MOTORING COATS.

In the Islington County Court, Mr. Alfred Dunhill, Euston Road, sought to recover from Mr. H. L. Civval, tailor, £10 10s. in respect of material spoiled in making eight leather coats. Thomas Owen, in the plaintiff's employ, said he gave defendant a sample motor coat to make up. He made a satisfactory coat, so he was forwarded a number of skins to be cut up for making more motor coats. The skins used for the purpose always bore certain blemishes, but instead of working round those blemishes, he cut them up as he would ordinary cloth. The result was that large holes now appeared in the coats. They were badly made altogether, and nothing like the sample made in the first instance. They would not be able to sell one of them. Defendant said he told plaintiff's manager that the skins were not sound, but he was told by them to patch up the holes, which he did. Other defects in the skins he covered up by means of ornamental work. After examining the coats the Judge held that the work had not been properly done, and gave plaintiff a verdict for the amount claimed, with costs. A counter-action was brought by Civval against Dunhill to recover £12 13s. 3d., for goods sold and work done. On this cause, which arose out of the previous action, judgment was given for £6 15s. 3d. in favour of plaintiff.

FOR the special convenience of those motorists using steam as a motive power, Mr. A. L. Dyke, of Limnar Building, St. Louis, has introduced a compact but serviceable portable electric light outfit. The lamp, which is equipped with a small porcelain socket, is screwed at the top behind the water gauge. The push button which starts and extinguishes the light is sunk flush with the surface of the arm of the seat near the throttle lever, and is connected by a small wire with the lamp. Pressure upon the button causes a brilliant light to be reflected from the lamp to the mirror, thereby permitting the driver to see the exact amount of water in the gauge. The battery connected with the lamp is placed under the seat entirely out of the way.

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THE Motor-Car Journal.

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PUBLISHER'S ANNOUNCEMENT.

Commencing with the present issue the rates for trade advertisements in the "Motor-Car Journal" will be increased to the extent of 20 per cent.

Cordingley and Co., Proprietors.

COMMENTS.



IN wishing our readers a Happy and Prosperous New Year we would take the opportunity of thanking the many motoring friends who have favoured us with Christmas cards and similar reminders of the festive season. Apart from the kindly thought which has inspired these greetings through the post, we welcome them as further evidence of the enthusiasm of motorists for their sport and pastime. Automobilists have not been slow to utilise photos of their cars for use on Christmas and New Year's greetings. Thus the popularity of the motor-car has been rendered more and more pronounced.

Royal Patrons.

THE list of Royal automobilists is growing until it will shortly embrace everyone who has any claim to Royal or Imperial title. King Edward, the King of the Belgians, the Queen Dowager of Italy, the King and Queen of Italy, and the German Emperor are all riders and drivers, while among those of noble rank may be mentioned the Dutch Queen's Consort, who uses a car when on his shooting expeditions. Queen Hélène of Italy is a clever driver, and the King and Queen of Württemberg also possess a car. The Dowager Empress of Russia has a motor-carriage similar to that owned by our own Queen and is making good use of it.

English Aeronauts in France.

THE party of English automobilists and aeronauts staying at the Elysée Palace Hotel in Paris have made very good use of their time. It has already been recorded that the Hon. C. S. Rolls, Mr. Frank H. Butler, and Miss Vera Butler ascended with the Comte de la Vaulx, but it is not also known that along with Colonel and Mrs. Templer, Captain and Mrs. Shelby, Mr. J. A. Holder, Mr. R. Bird, Mr. and Mrs. T. B. Browne, and others they had the pleasure of entertaining and subsequently being entertained by M. Santos Dumont, Colonel Renard, head of the Balloon Section of the French army, Comte de la Vaulx, of Russian and Mediterranean fame, and M. Deutsch de la Meurthe. A curious incident in connection with the above-mentioned ascent, by the way, is that the aeronauts passed right over the fort of Mont Valérien, and are probably the only English people who have seen its jealously guarded interior. They observed all the troops, heard the bugles sounded, and noted the disposition of the cannon and other armaments at their leisure. A nice fate would have awaited them had the balloon incontinently descended at that juncture, as they would certainly have been clapped into prison. They were lunching at the time, however, and amused themselves by dropping a chicken bone within the ramparts. Passing over Versailles

they pierced the clouds of fast-falling snow and reached the blue sky above, with the sun shining brightly. For two hours they could not see the earth, and seemed to sit on the clouds. Darkness coming on, however, they descended very gently and threw out guide-ropes, trailing over the forest of the Duchess d'Uzes, where rabbits were seen running about the snow, and a large fox was spotted at the corner of the wood. At last, seeing two men, the aeronauts shouted "*Attrapez la corde*," and the men ran along over the fields to obey the behest, but the wind took the balloon along too fast. The grapnel was then lowered and the valve opened, and the balloon soon sat on the top of a tree and then bounded on to a second like a ball. Presently men and women came out from the village and drew the balloon down into the open, where it was carefully packed up and a cart procured, in which the party journeyed six miles to a railway station and caught a train for Paris, after a most enjoyable ascent with magnificent optical effects.

The French Aero Club.

THE following particulars concerning the French Aero Club will no doubt be found interesting by the founder members of the new English Club which has been formed with kindred objects. The subscription is 50 francs. per annum, and the Club contains 450 members; in fact it is about to move into larger premises, those in use being too small. It publishes an official organ under the name of the *Aerophile*, and has a large place of its own at Suresnes, known as the Park of Aerostation, where the sheds of M. Santos Dumont and M. Henri Deutsch have also been erected. The Club shed from which the balloons are inflated cost no less than £1,200. As regards the ascents, the Club votes £200 per annum towards their cost, and the members who intimate their wish to make an ascent are charged £2 each, the difference in the expenses being paid out of the subvention, including the freight of the balloon back to M. Mallet, who looks after them for the Club. There are four balloons in use, and they are splendidly made by Mallet and Lachambre at a cost of £140 each. So excellent too are the instruments carried that the throwing out of a single teaspoonful of sand is sufficient to show an altered record.

A Motoring M.F.H.

NOTWITHSTANDING the recent outcry against such a practice, the Duke of Beaufort goes to hounds on a motor-car. The Duke has explained to the Hunt supporters that he uses the car not to do away with horses or oats, but solely to save time in getting to meets. For one trysting-place he can leave home three-quarters of an hour later than in a trap, and that is something, he thinks, for a Master who has little time at home during the hunting season.

A Novel Contest.

DURING the last days of the Paris Salon an original contest was held, under the auspices of a big manufacturer of pneumatic tires. The competitors, who were *mecaniciens* employed by makers or private owners of automobiles, were required to remove a tire from a wheel on which it had been previously inflated hard, put it on again, and reinflate it. The winner accomplished these operations with a 92 by 12 centimetre tire in

9min. 23 3-5sec., securing the prize of £10. He is employed by Panhard and Levassor. One of Charron's *mécaniciens* took the second prize (£8), and a Gardner-Serpollet man the third (£6), their times being 9min. 35sec. and 9min. 38sec. The most curious circumstance about the contest was, however, that, according to their statement, the winners took more time for the operation than they usually do in the workshop, or even on the road.

Where do old cars go to?

A CORRESPONDENT mentions that on a recent tour in an out-of-the-way district he came across what must have been one of the earliest Benz cars sold in England. It was a quaint and ramshackle affair, but was owned by a rustic enthusiast—a retired Civil Servant—who was as proud of it as if it were the winner of the latest Paris-Bordeaux race. Having no rivals but a traction engine in its sequestered district, this ancient motor-shay held a monopoly of the honours in automobilism. The sight of it prompts our correspondent to inquire if most of the old cars have fallen into such rustication, or have the majority perished on the scrap-heap? It is highly probable that a fair number are doing veteran work of some kind still, having generally come into the hands of amateur engineers who expend incalculable energy in getting them to work, and making the task of the engine more difficult doubtlessly by the addition of "improvements," invented by the owners. It would be rather interesting to start an inquiry as to where the oldest car in England is, of the petrol type. One day we may come to regard it as a precious relic.



A SNAPSHOT AT SOUTHSEA: MRS. FRISWELL AND MR. FRANK BUTLER IN THE FOREGROUND.

Brakes Again.

THE lamentable accident to the driver of a heavy motor-van at Rockingham Hill, though needing no undue emphasis when the prevalence of horse accidents, especially with heavily-loaded wagons, during the recent frosty weather is considered, may well serve as a reminder to builders that ample brake-power is as indispensable on vans and lorries as on lighter high-speed vehicles, while the fact that they are usually shod with iron tires diminishes the efficiency of tire brakes, especially in wet or frosty weather. It is somewhat surprising that rim brakes have not been more largely used instead of remaining, as appears to be the case, a monopoly of the Wolseley firm, as they have many points of merit, not the least being that they are both powerful and cleanly. When, in the good time coming, it will be legally incumbent (as it ought to be now) on the owners of hay motors to have some means of preventing their getting beyond the driver's control, the rim brake will probably have its innings.

King Frost.

THERE are still, alas, a number—rapidly becoming, as far as influence goes, a minority—of blind reactionaries who refuse to see anything good in the automobile, and, impervious to argument, can only be left to the healing work of time. But if anything will convince the motophobe, a good hard frost, especially if following wet weather, will do it. At such a time the horse-owner, unable to go out without the fear of letting his horses down, can only abuse the local authorities for their feeble attempts to cope with the slippery state of the roads, and in the intervals envy the motorist, who goes on his way without a qualm. For Nature has beneficently decreed that frozen roads, however glassy, are with moderate care safe, and with good pneumatics comfortable, for the latter, while his engine, if the carburettor is duly protected and warmed, never goes so well as when the outside temperature is low. Nevertheless, King Frost demands even from him a certain special attention, not only against the risk of frozen radiators, etc.,—against which sufficient warnings have been published—but in the minor but important matter of frozen lubrication. Drop-lubricators, if—as they frequently are—in a position where they are not kept warm, require special attention to ensure their functioning regularly in very cold weather, owing to the thickening of the oil. And for the same reason, the ordinary oil-can is often a tedious implement to use, and one of the varieties which has an ejector valve which forcibly drives out the oil is a time-saver at this season.

Motor-Ambulances for London.

IN a brief review of the ambulance service of London, Sir Henry Burdett, K.C.B., seems to appear as a friend of the horse as opposed to the electric ambulance. His main objections are on the ground of expense and because he believes in a larger number of hand ambulances being placed about the City. But he would surely not hinder an experiment, and we hope some day to see motor-ambulances provided in all the outlying districts. Of course, there is much to be said for the hand-ambulance when it is stationed but a short distance from the hospital; but the motor-ambulance would certainly be of service in the suburban districts. When the late President of the United States was shot the value of the invention was demonstrated beyond all possibility of dispute.

To those who keep Petrol.

EVERYONE in Bournemouth who is known to members of the Town Council as the owner of a motor-car has received from the Finance Committee a copy of the Home Secretary's order with regard to the storage of petrol, etc. The Town Clerk mentioned that several gentlemen in the town had not reported the fact that they had petrol on their premises, and that the Corporation had power to obtain penalties from those who did not comply with the regulation. Possibly this item of news will be useful in other places as well as Bournemouth.

Motoring Round the Globe.

MANY people find it difficult to go twenty miles without money, but others appear to go right round the world minus a supply of current coin. People have walked round the world picking up their livelihood as they progressed, and now two motorists—from America, of course—have decided to motor round the world, so far as it is possible. From New York they will go by steamer to Ireland, and then enjoy a trip through the United Kingdom. Across France and Italy, thence up the Nile, and into the Holy Land these intrepid motorists will go, returning home by way of China and the Philippines. Then they intend to settle down as divinity students in the University of Chicago!

**Apparently
Not Quite
Fair.**

THE Borough Engineer of Southwark has been making some comparisons as to the cost of horses and motors for municipal dust collection. Taking the average day's work in Southwark as performed by a one-horse van with one collector, he has compared the result with the tests made by the Liverpool Self-Propelled Traffic Association in June last. The latter went up gradients and over a special track, while the Southwark estimate was for an ordinary road. Consequently the comparison is not strictly a fair one; and, further, Mr. A. Harrison (the Borough Engineer referred to) compares his one-horse van with a motor-van having double the capacity, which he charges with treble the help. For in the former case he only accounts for one collector; in the latter he sets down the wages of three, although the load carried is only twice as much as in the first case. With the horse-van the cost works out to 3s. 4½d. per ton; with the motor at 4s. 4½d.

**In Favour of Motor
Dust Vans.**

MR. HARRISON explains that the position of Southwark in this matter is an exceptional one. The borough is of small area, and the depôts and shoots are most economically placed. Hence rapid traction is of comparatively small importance. There are sixty-five miles of streets and no point is more than a mile from one of the shoots. The time spent in travelling is only 1 hour 56 minutes out of a working day of 9½ hours. Hence it must not be inferred that the Borough Engineer is unsympathetic with regard to motor dust collection. He followed the trials of the Liverpool Self-Propelled Traffic Association and was well satisfied that motor traction at the present day is a success, and that in a district not so economically situated as Southwark, and where the motor has to travel a good period of the working day, the results would be quite different to those relating only to Southwark, which are published in the previous paragraph.

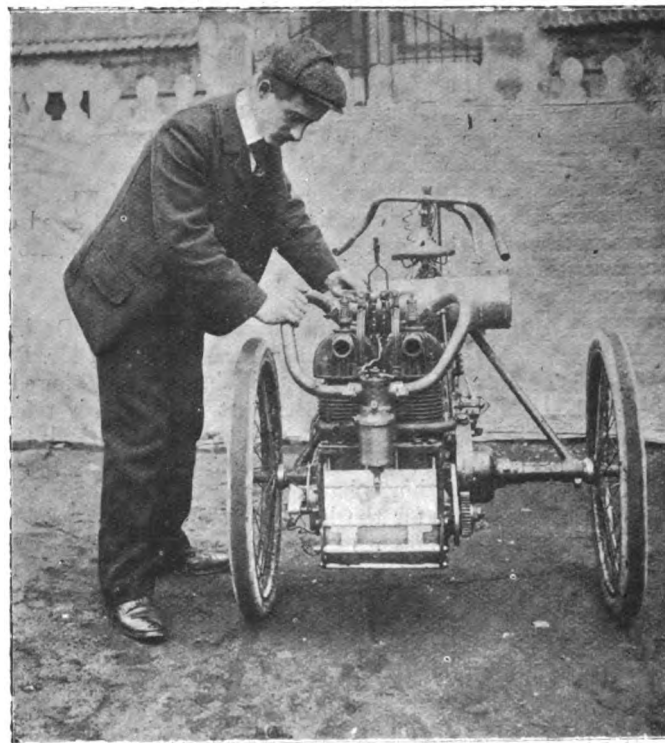
Sign-posts.

WHEN will local authorities in this country recognise the prosperity that automobilism promises to restore to the old coaching roads and main highways? Seeing that motoring assists the circulation of money in rural districts they should do something to assist motorists by placing sign-posts along the roads directing drivers. At present this is done in a very perfunctory manner; often the sign-posts are weather-beaten and unreadable. In France these things are managed differently, and the road from Dieppe to Paris is now so completely provided with sign-posts that a foreign motorist landing in Normandy without a map would easily be able to ascertain the way to Paris by simply following the roadside directions. The entire route is divided into numbered sections, and at frequent intervals the driver or cyclist is informed by sign-posts as to the turning, inclines, distances, etc. The Cyclist Touring Club in England proposes to do something of the same kind from Newhaven to London; but it does seem a pity that a work of such public utility should have to be left to private enterprise.

**Miss Butler's
Escape.**

IN her new-found ardour for aeronautics Miss Vera Butler is inclined to vote travelling *en ballon* even safer than *en automobile*! At all events, her aerial excursions have been free of mishap, while the last one, on her little Renault car, was followed, strange to say, by an untoward incident. A day or two after they had ascended with Comte de la Vaulx and Mr. Rolls through a snowstorm, and returned to Paris by train, Mr. and Miss Butler set off for the south of France on the 5 h.p. Renault, Miss Butler steering as usual. On arriving at the *octroi*, however, half way down the hill at Versailles, the car skidded on the ice and snow, and promptly turned turtle. Both Mr. and Miss Butler were pinned underneath, with petrol pouring out, and tools and everything else that was loose falling into the road.

Miss Butler, of course, was pinned down by the steering wheel and could not stir. The *octroi* official pulled the light car over, however, and Mr. and Miss Butler crawled out, only to find, to their surprise, that they had not a wound or even a scratch. They were travelling at moderate speed when the spill occurred, and are quite at a loss to account for the catastrophe, as they had descended the same hill six times last spring in the same car. The spokes of the wheels were all broken, and the wings and lamps smashed. Sending the car by *petite vitesse* to the south of France, Mr. and Miss Butler accepted the kind offer of a passing automobilist, M. Leclere, to drive them back to Paris on his 20 h.p. Panhard, and arrived at their hotel much to the astonishment of those who had not long previously bid them farewell. No doubt the new 8 h.p. Renault, with its longer wheel-base and equal-sized wheels, will prove less liable to a *renversé*.



RIGAL AND HIS 12 H.P. RECORD-BREAKER.
(La Locomotion.)

**Spare Tires on
View.**

APPARENTLY the spirit of vain glory has possessed some American automobilists, and one of our Transatlantic contemporaries deplores the aping of tourists by motorists out for a short spin in some of the suburbs of New York. It appears that many of the motorists always carry spare tires in abundance—and in conspicuous positions on their carriages. This is due to the same sort of inanity which causes men to turn up their trousers in all weathers. No other reason can be given, and not only is it absurd in many instances, but it is said to be carried to such lengths that the public is concluding that the motor vehicle is in danger of needing a new tire at any moment. Carry spare tires by all means—and in many English places they are absolutely necessary—but do not make such a conspicuous show of them as to lead people to the conclusion that they are part of the ordinary equipment for a half hour's journey.

**Care in
Starting.**

Few people have any adequate conception of the number of parts or pieces in an automobile. And yet, despite their number, the management of a car is really simple when the driver studies his engine and takes a pride in his work. Often, however, drivers are unreasonable; and then trouble may be

expected. Some drivers start and stop their machines badly. The sudden jerk when starting a steam vehicle, caused by opening the valve too far, can only have bad results, and must eventually throw some of the finer engine parts out of gear. Sometimes, instead of slowly advancing until the vehicle has got up sufficient power, drivers put the speed lever at once at the second or third speed, and risk not only being thrown out of the vehicle, but also wrecking the motor which they have undertaken to handle. A motor must be treated like a sensitive animal which requires attention, and not like a heap of steel parts which cannot be broken or damaged.

A Great Many Little Things.

BUT to revert to the sentence with which we opened the last paragraph. A visit to an automobile factory gives a good insight into the multiplicity of parts required in a motor-car and the duplication of pieces that is essential to the completed machine. The operation of putting the radiating discs on the piping intended for the water-cooling system is interesting. The discs are stamped out by the thousand. Then they are flared out in the centre to make a bearing surface, and when they have been put in place the workman goes over them with a soldering iron and fastens each one to the pipe. An automobile using only ten feet of water-cooling pipes has about 500 of these discs, so that the completed car is really an accumulation of thousands of small pieces put into their proper order.

Motor-Waggons at Liverpool Docks.

At a meeting of the Mersey Docks and Harbour Board the other day, Mr. Robert Gladstone, the chairman, reviewed the work of the past year. With reference to motor-waggons, he remarked that if these were brought into general use at the docks, instead of horse haulage, an enormous area of shed space would be saved for the handling of goods. It might also be that these motor-waggons might solve a difficulty which had bothered the Board greatly with reference to the getting away of goods by the railways. It was almost certain that motor-waggons would come into use, and prove to be of very great advantage.

Agitation at Torquay.

THE agitation as to trams and motor-buses is extending in the fair county of Devon, and Torquay is now following the lead of the city of Exeter. Evidently strong feelings are being aroused. The Rev. J. H. Wilkinson, one of the local clergy, has fulminated against the "so-called villa residents" who selfishly object to any "means of speedy and inexpensive transit," and declares that "the cycles and perambulators which infest the roads and pavements of Torquay are a more intolerable nuisance than any trams or motor-buses could be." Here is a point that motorists might well urge. If the swiftly-passing motorist is a nuisance, what of the dilatory and lackadaisical perambulator or mailcart that is kept in the country roadway to the annoyance of horse-drawn and motor-propelled vehicles alike.

Motor-Cars and Elections.

MOTOR-CARS have generally been credited with the possession of great electoral virtues, and some M.P.'s owe much of their ability to perambulate their constituencies thoroughly at election times to the aid of friends who were able to lend such vehicles. Therefore, it is news to learn from the *Cardiff Evening Express* that "a Parliamentary candidate for a Welsh constituency lost the bulk of the farmer votes that had hitherto been given to his party for no other reason than that he traversed the farming districts in a motor-car." This reads like an exact revival of the old antipathy to railroads

on the part of those whose business was with proprietors of coaching houses. We are surprised that political antipathy should go so far—especially when it is remembered that Mr. Chaplin, one of the stoutest defenders of agricultural interests in the country, is an automobilist, and Lord Llangattock, a noted breeder of horses, is also a lover of the motor-car. Probably the young man engaged with our contemporary wanted a paragraph or two, and revived an ancient fiction in the attempt.

The late General Montgomery.

WE regret to record the death of Major-General H. P. Montgomery, which took place at Winchester late on Sunday night, at the age of 72. The deceased was one of the pioneers of automobilism, having set up a Daimler car in the summer of 1897, since when he has constantly used it till a week or two ago, when he was taken ill. On the occasion of the first Automobile Club tour some years ago, the deceased took a great interest in the event, "engineering" the motorists into Winchester. So late as the recent anniversary run to Southsea, too, he showed his interest in our movement by undertaking all the arrangements at Winchester.

Propagandist Automobiles.

AUTOMOBILES are about to be used very freely in propagandist efforts in the United States, and political and religious organisations are already making known their requirements for the spring and summer of 1902. In one specification for a lecture-van we notice that the normal load is to be from 1,000 to 1,200 pounds, and the maximum load is to be 1,800 pounds. Carrying its normal load the van must be capable of travelling at an average 8-mile speed and a maximum speed of 12 miles an hour on good roads. It must be possible to ascend an 18 per cent. grade. All control devices must be of simple construction, and must not be in the way of the operator. The front wheels are to be 36 inches diameter and the drivers 42 inches; they are to be of wood, with hickory spokes and felloes, and are to be shod with Munger tires. Roller bearings are required in the wheels. The vehicle body is to rest on four springs to support a load, if necessary, of 2,000 pounds. The machine must be capable of describing a circle, when turning, of a diameter equal to or less than twice the length of the van.

WE understand that the only British vehicle so far entered for the 1902 Gordon-Bennett Cup Race is a 30 h.p. car by the Wolseley Tool and Motor-Car Company, Limited, of Birmingham.

It is proposed that, during the course of the Automobile Club's Exhibition at the Agricultural Hall, which, as is already well known, will be held from the 19th to the 26th April next, one of the days shall be specially reserved for motorists and their friends, the charge for admission being half a crown.

THE Speedwell Motor and Engineering Company, Limited, has been registered with a capital of £10,000, divided into 4,000 6 per cent. cumulative preference, and 6,000 ordinary £1 shares, to acquire and carry on the business of the Speedwell Electrical, Motor-Car and Cycle Company, of Reading. The present issue consists of 3,000 preference and 3,000 ordinary shares. Prospectuses and forms of application may be obtained from the registered office, 134, Broad Street, Reading.

AT the Queen's Hotel, Aberdare, on New Year's Eve, Mr. W. Parker-Thomas was presented by the employees of the Aberdare Valley Motor Company, Limited, with a handsome solid silver cigarette case and match box upon his vacating the position of manager. Mr. A. E. Reynolds, who has been appointed secretary in charge, was in the chair. The presentation was made by Mr. Fred. Evans, one of the oldest public service drivers in the country, who spoke of the great kindness and consideration of Mr. Thomas for those under him. We may mention that Mr. Thomas is opening for himself at Cardiff, but is still retained by the above company as consulting engineer.

MECHANICAL FLIGHT UP-TO-DATE.

(All rights reserved.)

By SIDNEY H. HOLLANDS.

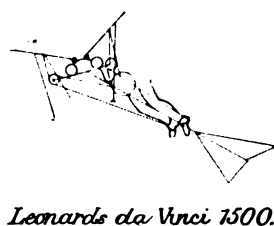
I. HISTORICAL OUTLINE.

RATHER than hark back to the apocryphal but oft-quoted aerial exploits of Dædalus and Son, the present writer prefers to fix the commencement of the era of mechanical flight development at the middle of the thirteenth century. That period certainly appears to be the earliest at which the subject is dealt with at all practically, or even intelligently. To that famed mediæval mechanic, Roger Bacon (of "Brazen Head" celebrity)—often known as "Friar Bacon," in allusion to his monastic experiences—born in 1214, is due then—in all probability—the honour of the earliest conception of artificial flight practically considered.

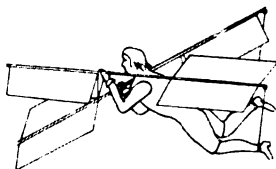
In his quaint treatise, "Of Admirable Artificial Instruments" (written in Latin)—he says: "That I may the better demonstrate the inferiority and indignity of magical power, to that of Nature and Art, I shall awhile discourse on such admirable operations of Art and Nature, as have not

that none but a practical, as well as a theoretical mechanic could deal with adequately. In practical work Da Vinci designed and constructed (1) winged apparatus for man-flight (*see illustration*); (2) An artificial wing, made with an articulated skeleton-frame (resembling the bat's wing) flexed and relaxed by means of artificial tendons or wires for use with a membranous covering; (3) a screw-propeller for aerial navigation. The contour of this screw thread, equivalent to the modern "blades," was formed of stout iron wire, stiffened with radius stays, and covered with varnished linen. Da Vinci's original drawings of all this apparatus are still preserved in the Ambrosian Library, Milan. It is a fact but little known that Leonardo Da Vinci was absolutely the first to apply the screw as a propeller, and then, curiously enough, to aerial propulsion.

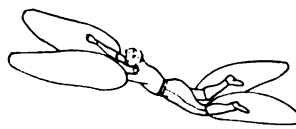
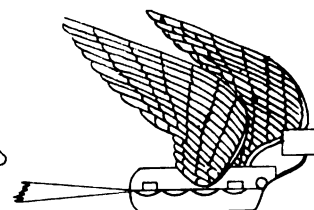
Robert Hooke, the celebrated seventeenth century mechanician, born 1635, applied himself enthusiastically for over two years—1657-9—to the devising and working out of "Thirty Different Methods of Flying." It may be mentioned *en passant* that to Robert Hooke is due the honour of being the true inventor of the well-known centrifugal ball-governor, now in almost universal use in engine-governing. Watt usurped the



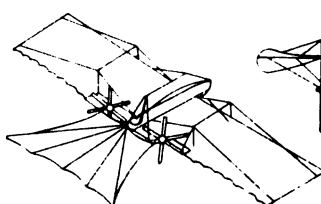
Leonardo da Vinci 1500.



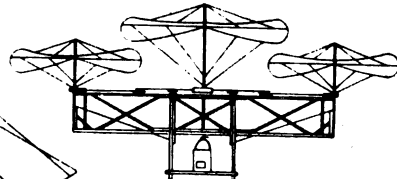
Besnier 1678.

Marquis de Bacquerville
1742.

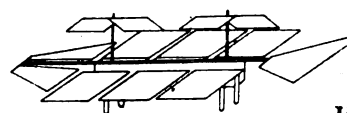
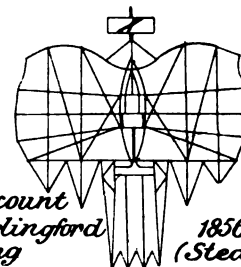
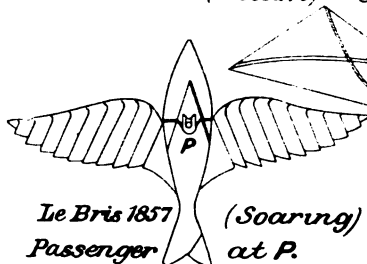
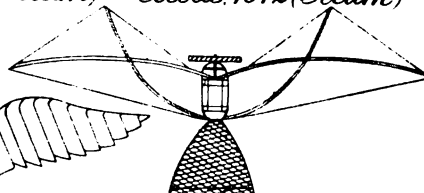
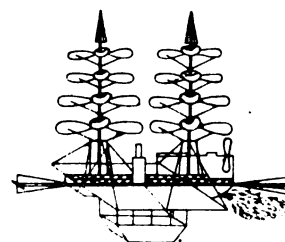
Gérard 1784



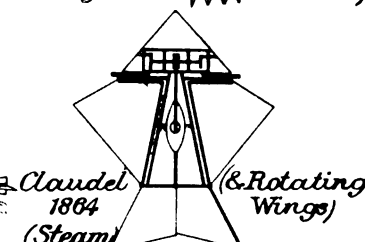
Henson 1842 (Steam).



Cossus 1842 (Steam)

Aubaud 1851 (Steam)
Air-Cushioned Feet for LandingVicount
Carlingford
1856
(Steam)Le Bris 1857
Passenger
(Soaring)
at P.Du Temple 1857.
(Steam)

Dela Landelle 1863 (Steam)

Clouel
1864
(Steam)
(& Rotating
Wings)

the least magic in them; and afterwards assign their causes and frames. And first, of such engines as are purely artificial:—

(3) "It is possible to make engines for flying; a man sitting in the midst whereof, by turning only about an instrument, which moves artificial wings made to beat the air much after the fashion of a bird's flight." Roger Bacon again refers to the subject in his "Sylva Sylvarum" as follows:—"Certainly many birds of good wing, as kites and the like, would bear up a good weight as they fly; and, spreading of feathers thin and close, and in great breadth, will likewise bear up a great weight, being even laid without tilting upon the sides. The further extension of this experiment for flying may be thought upon."

The next aviationist in order of time we have to deal with is no less a personage than Leonardo da Vinci, born 1452, known to the majority of moderns only as a great painter and an eminent "old master." That versatile genius was nevertheless foremost in the ranks of mediæval mechanical engineers. One of Da Vinci's best and most interesting technical literary works, viz., his "Treatise on the Flight of Birds," is one

credit of this valuable invention, and is even now frequently credited with it.

In the years 1678, 1742, and 1784 respectively, the Frenchmen Besnier, the Marquis de Bacquerville, and Gérard, all produced apparatus designed for flight by manual power. (*See illustrations.*)

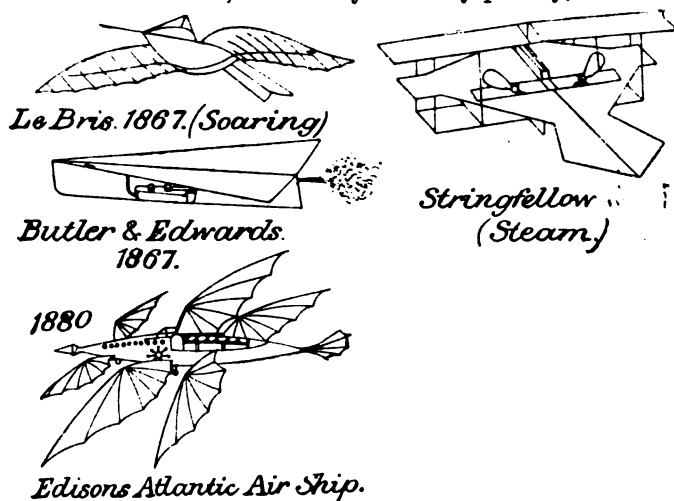
In 1842 appeared the first attempt at a steam aerial machine—this was Henson's (*see illustrations*)—a large aeroplane model with twin screws. Its steam motor went fairly well, but the machine as a whole did not; it must, however, be conceded that this little machine was a very considerable advance on all precedent. This was followed in 1845 by the steam model of Cossus, depending on vertical ascensional screws, and in 1851 by that of Aubaud, having ascensional screws and aeroplanes. (*See illustrations.*) In 1863, De Ponton D'Amécourt and De la Landelle, respectively, produced model steam aerial machines having superposed ascensional screws; the latter had also aeroplanes and rudders. The steam machine of Daudel, 1864, was a new departure, having rotating wings. In 1867, Le Bris produced an improved form of his 1857 soaring machine. In this

improved machine Le Bris once soared to a height of 200 feet, and sailed a distance of about 600 feet.

Messrs. Butler and Edwards, working jointly in that same year (1867), produced another quite new departure in aerial machines—a dart-like structure, the origin of which is obvious and strangely suggestive of juvenile recreation, propelled by the reaction of a rearward jet of steam. (*See illustration.*)

It was in the year 1868 that Stringfellow produced his improved "Henson," a "three-decker," superposed aeroplane machine with twin-screws, and a steam-motor that is quite historical. This motor gained for Stringfellow the £100 prize offered by the British Aeronautical Society at the Crystal Palace competitive display of light aerial motors in 1868. (*See illustration.*) In common with Henson's machine, this would not raise itself in the air, but its motor was a very satisfactory achievement for that time, being of 1 h.p., and weighing about 14 lbs. with accessories. It is a significant fact that at the present day we have reduced even that weight per horse-power to half.

Thomas Moy, in 1875, produced a comparatively large steam aeroplane machine, designed to carry one passenger, and having twin propelling fan-wheels; its motor was of about $3\frac{1}{2}$ h.p. This machine (*see illustration*), is stated by Moy to have raised itself off the ground. The late F. W. Brearey, B.Sc., introduced his ingenious "wave-action" type of machine in 1879 (*see illustration*); his models were driven by the stored energy of india-rubber strands in torsion, and really flew very prettily, as the



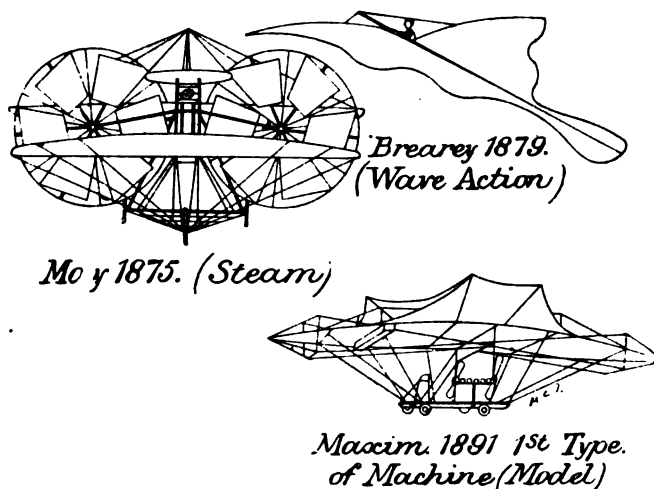
present writer can bear witness. This type of machine was suggested to Brearey by seeing the curious undulatory propulsive action of flat fish in an aquarium.

In 1880, Edison designed an aerial machine, the design of which reflects but small credit on that "inventor" (*see illustration*). In the year 1884 Mr. Lawrence Hargraves, of Sydney, N.S.W., commenced a really sound and rational, as well as a deeply interesting course of experiment. Mr. Hargraves designed and constructed a great number of model aerial machines, these being of several types, all more or less efficient, giving comparative results. These little machines were well thought out in every detail. Recently Mr. Hargraves has produced several large and exceedingly light and efficient motors. For about fifteen years past Mr. Hargraves has contributed a long and valuable series of papers on aerial machines to the Royal Society of N.S.W.

Mr. Octave Chanute, C.E., of Chicago, at about the end of 1889, devoted himself largely to the promotion of Aeronautics, and early in 1894 published in New York his valuable book, "Progress in Flying Machines." Since that time Mr. Chanute has been prosecuting some valuable soaring and kite experiments with some very original and efficient apparatus. This brings us up to comparatively recent times, for at about the beginning of 1890 Mr. Maxim started on his long and instructive course of experiment, with a large "whirling table," etc., to determine the necessary power-ratio, sustaining, and propelling media, etc. The first outcome of these was his original or first type of machine—a model—(*see illustration*),

which he afterwards widely departed from in his final large machine. At about the same time as Mr. Maxim, Professor Langley, of the Smithsonian Institution, Washington—also after a long and judicious course of "whirling-table" experiments—produced his first type of steam aerial machine in 1893, which he finally developed into his celebrated and highly successful steam "Aërodrome," a large model 15 ft. by 14 ft., with a total weight of 30 lbs., and a steam motor developing $1\frac{1}{2}$ h.p. and weighing 7 lbs. (with generator). In November, 1896, this splendid little machine really made three-quarter mile of true free flight, being purposely, and not necessarily, limited to that distance. This undoubted achievement may be said to have started a new era in mechanical flight, being the most convincing performance of free steam flight on record. Professor Langley has also made numerous valuable contributions to the literature of Aeronautics and Aërodynamics.

Towards the end of 1896, Mr. C. H. Lamson, of Portland, Maine, U.S.A., produced some very interesting apparatus, and results, comprising a double "three-decker" aeroplane machine—a double two-decker aërocurve soaring machine, and a superposed kite-like "air-schooner," as Mr. Lamson terms it. The very latest production in true mechanical aerial machines is that of Herr Wilhelm Kress, of Vienna, who is now conducting a course of trials and experiments with the "aviators" to be illustrated later on. Like



Professor Langley, Herr Kress has wisely flown his experimental machine over a piece of water, thus minimising the risks of an abrupt descent.

(To be continued.)

AN illustration on another page of the present issue shows M. Rigal and his racing tricycle on which this intrepid rider has recently created so many records. The machine is fitted with a two-cylinder 12 h.p. Buchet motor.

AN Italian engineer has devised a sparking plug with two insulated terminals, the rods making an angle of about 60 degrees with each other. Centrally over the spark gap is a mica window, which admits of the spark being observed when the motor is in operation.

THERE has recently been seen a steam *dos-a-dos* in operation around the streets of New York, with a complete sand equipment, consisting of sand boxes and feed pipes leading down close to the tire of each rear wheel and terminating 1 or 2 inches from the ground. The feed pipe is spread out at the end, so that it lays a track of sand about one and one-half inches wide. The feed of the sand is controlled by a rod leading from the sand box and connecting with the brake rod in such a position that the instant the brake is put into use the sand feeds down to the ground, preventing any slipping movements of the wheels. The flow of sand may be shut off on good roads by a small check rod running to the seat. When asked about the results it had given, the operator smiled and said, "It is just the thing."—*Automobile Topics*.

SIX DAYS IN SUSSEX.



THE car was Mr. Edge's converted Panhard with Napier engines. The party consisted of my wife, myself, and my engineer—the latter because I no longer enjoy stooping or getting dirty. The idea was rather to see the places than to cover any large quantity of ground, and the runs were therefore short, as follows: To Worthing 31, Hastings 48, Canterbury 45, Rochester 26, Horsham 57, home again 38, altogether 245 miles.

We started from the nearest metalled road on a dull Tuesday about 11.30 a.m., and ran the nine miles into Chichester swimmingly in half an hour, turning there to the left for Arundel. Three or four miles along this road the engines stopped suddenly, a trick they had taken to lately. They soon restarted; the trouble on this and other occasions being due to the two low tension ignition wires lying almost bare of covering upon the exhaust pipe, and short-circuiting now and again when they had a mind to. I had an old cycling recollection of the Chichester to Arundel road as a good one, but found it unexpectedly undulating, though none of the hills amount to much. Entering Arundel, you climb one unexpected precipice, and shortly descend another, which turns out to be the main street of the town, with the castle on the top. We lunched here, but, unfortunately, it was not a day on which visitors were admitted to see the castle. An easy run took us to Worthing by the road through Angmering, which is pretty, but has two level crossings. It is not the main road, has no signposts, and twists a little, and is not, therefore, very easy to find.

We had picked up our engineer at Worthing, and started next morning about ten o'clock through Shoreham along the sea front to Brighton and on to Lewes, which also has a precipitous hill in the middle of it. We lunched at Horsebridge, near Hailsham, a place of no importance, except as indicating the branch to Hastings. The difficulty of going to Hastings this way is to avoid being drawn to Eastbourne, to which all the signposts and all the roads tend. After Horsebridge, the seventeen miles into Hastings was simple and done at a good speed until St. Leonards was reached. The car was put up at Dick Russell's stables at the reasonable charge of 1s., and we were able to obtain petrol there, a public service of cars running from the same stables.

The next morning we started at ten minutes past ten, ran through Old Hastings—which is more interesting than the tourist town—turned up its very narrow High Street, climbed up the very steep hill to Ore—450 feet above sea level—in fine style, and prepared for some easy running. But this was destined to be a day of difficulty and disappointment. The car had refused to take the second speed near the top of the hill, and given it rather a jar, and now a curious rattling was heard in the gear case. This could not be neglected, so we stopped at 10.40. We examined the gear through the hole at the top, and found several nuts loose—these we tightened—and one missing. As the body of the car has to be lifted to take off the top of the gear case, we decided to take off the bottom. To be more strictly accurate, I decided that the engineer should take off the bottom. He got under the car and did take it off, but owing to the thoughtfully inaccessible position of the nuts on the cover, it was a long job. He found the loose nut and bolt, and put it in again, but it now appeared that getting on the cover was a longer job than taking it off. My wife and I climbed a grassy bank, where we basked in the sun, and from the high elevation had a magnificent view of Rye and Dungeness. We found it easy to be philosophical, but the engineer, who was lying on his back in the dusty road, with gear case grease dropping in his eyes and mouth, did not. We could not understand how to replace the spring which pushes the friction cone into place. The engineer went a mile and a half to fetch a blacksmith with a long crowbar to help, and after we had got it up we found we had done it wrong, and that it required no violence and no assistance. We spent five hours at that roadside place, being variously jeered at or commiserated by the passers-by, but we gained experience.

We had an unsatisfying lunch of bread, cheese, and beer at a public-house hard by, and finally got away soon after four o'clock. The car ran all right, but there were other troubles. Winchelsea, a very quaint-looking place, was reached in good time, and we got safely down the hill out of the town. This hill is short but steep, very narrow, and turns round at right angles to disclose a very narrow archway, through which you have to pass. It has two danger-boards, but should be marked "very dangerous," because it is so unexpected, and I was very glad that I had approached it at a walking pace. A fine military road leads to Rye, for which you have to pay a toll both going into and leaving the town. I tried to get to Brenzett Corner, but quite in vain. There were no signposts; no one knew the way, and, unfortunately, I had not the one-inch Ordnance with me, the only map one can trust. As a result, I had four or five miles of a nightmare of a road, loose gravel with deep ruts, in which the car tried to skid, with a canal handy alongside for it to skid into. After two miles we saw a man by the roadside, and my wife said, "He does not look like an ordinary countryman, ask him the way." He was not ordinary; he was a mouthing imbecile, and could only make inarticulate noises. I do not wonder at it, living on that road! At last we came into a village, which turned out to be Appledore, and from here I found my way with difficulty and by devious roads to Ham Street, and so to Ashford. At Ham Street, and for miles each side of it, the roads were infested with sheep. There must have been a fair or something, for half a mile of road at Ham Street was solid with sheep, and some five or six times each side of it we had to pull up to allow one or two flocks to go by. It is to be observed that sheep will not, as a rule, get out of the way of a car till it actually brushes them. They are, however, better than cows, which have a habit of pretending to get out of the way and then unexpectedly turning round and standing still, facing one. The characteristics of other animals are interesting; hens always appear about to be run over, but never actually are. The barking dog, however, is very apt to fail to get out of the way. I believe owing to his calculating the speed of a car from that of horse-drawn carriages. We did actually only run over one dog on the tour, but he, fortunately, was a small one.

At Ashford we had a false alarm, thinking the water-pipe was broken, but it turned out to be only a tap open. We swept the fourteen miles from here into Canterbury in magnificent style, and arrived exactly three hours after leaving the scene of our accident. Considering the nightmare road after Rye, the flocks of sheep, devious byways from Appledore to Ham Street, and so forth, this was not bad time for forty-one miles, and looks almost as if we must have exceeded the legal time somewhere.

(To be continued.)

RUSSELL.

MR. JAMES A. O'GRADY, of Enfield, county Meath, Ireland, is now catering for the wants of motorists by keeping a stock of petrol.

A NOTICEABLE feature of the new cars at the Paris Salon was the very general adoption of new patterns of radiators. The Mercedes type is a very popular one, but it is also noticed that several new forms have been introduced in which the cooling of the water is assisted by means of a fan combined with the radiator.

Two Denver motorists, Mr. W. B. Felker and Mr. A. C. Yont, recently succeeded in climbing Pike's Peak, Colorado, in a Locomobile steam car. The feat has been attempted several times, but this is the first time anyone has reached the summit by motor-car. The two *chauffeurs* started at daybreak from Manitou for the summit. The distance is fourteen miles over the old carriage road, which is little used and out of repair. The grades are not very difficult, but the road is cut by gulleys and obstructed at frequent intervals by boulders and fallen timber. Axes and shovels were brought into use many times during the day to make the road passable, but the summit was finally attained. No accident was met with, and the travellers reached Manitou on their return late the same evening.

THE "SPEED KING" LIGHT CAR.

As briefly mentioned in a recent issue, we lately had an opportunity of testing the new 8 h.p. light car which has been put on the market by Messrs. Dennis Bros., Limited, of Guildford, and of which we are now able to publish illustrations. The frame of the vehicle is of strong tubular construction. In the fore part of this, under a bonnet, is set an 8 h.p. genuine De Dion single-cylinder motor. The water circulation is maintained by means of a Panhard type of pump and radiators. The latter are placed below the frame at the front end, while the water tank, which has a capacity sufficient for a run of 250 miles, is located under the bonnet. The motor

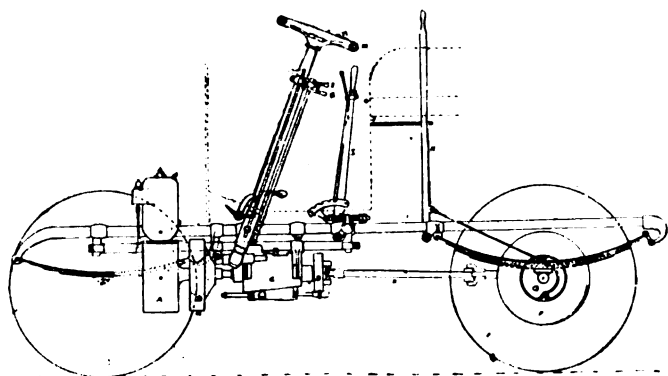


FIG. 1.—DIAGRAMMATIC ELEVATION.

is fitted with a centrifugal governor acting on the exhaust valve, while the carburettor employed is of the De Dion or Longuemare spray type.

Coming now to the transmission mechanism, it may first be mentioned that three speeds forward and a reverse motion are available. The forward speeds are controlled by a single lever, while the reverse is actuated by a pedal. The engine transmits its power through a pedal-operated friction clutch to the change-speed gear, which is of the Panhard type, a noticeable feature being that on the high speed the power of the motor is transmitted direct to the rear axle without the intervention of any spur-wheels. The change-speed gear is enclosed in an oil-containing box, and is connected to the rear live axle by a universally-jointed longitudinal shaft and bevel gearing, no chains or belts being used. A special stay is fitted to the rear axle, keeping the latter rigidly in position and preventing undue wear on the bevel gear used. Particular attention has been devoted to the question of braking

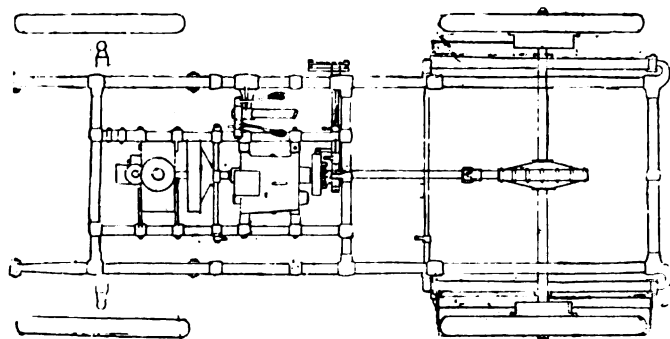


FIG. 2.—PLAN.

power, and to the control of the car in heavy traffic. The clutch pedal is connected with the governor in such a way that when depressed and the engine is disconnected from the transmission mechanism, all tendency for it to "race" is prevented. A second pedal, in addition to being connected with the clutch and governor, actuates a powerful double-acting band-brake on the counter-shaft. To the hubs of each of the rear road wheels a special form of expanding band brake is fitted, the braking surface

being entirely enclosed in, so that it is kept free of mud and dirt. The latter brakes are operated by a hand lever at the side of the car. Like the pedal brakes, the application of the hand brakes disconnects the clutch, and, by means of the governor, slows down the engine.

The lubricator, which is fitted to the dashboard, is provided with a three-way cock, one pipe leading to the change-speed gear case, one to the engine crank chamber, and one to the gear on the rear axle. The steering is controlled by an inclined hand wheel, in which is fitted the current interrupter. The road wheels are of the artillery type, 32in. in diameter, and are shod with Clipper 3in. or 3½in. pneumatic tires. The car, which has a long wheel base, weighs complete about 11 cwt., and can attain a speed of twenty-eight miles per hour. Having an independent frame, any type of carriage body—phaeton, *tonneau*, etc.—can be fitted. The vehicle we recently tested was fitted with a very roomy *tonneau*, glass front and detachable awning. On the high speed little if any noise, except the beat of the engine, was heard, while as to the hill-climbing capabilities of the vehicle, we cannot say more than that the steep hills in the neighbourhood of the Crystal Palace were mounted with ease. We may add that Messrs. Dennis are building a car on similar lines fitted with a 10 h.p. two-cylinder slow-speed engine.

WHEEL BASE LENGTH.

THE attempt to apply horse-drawn vehicle facts to motor-vehicle problems leads many constructors into faulty positions, remarks Mr. Chas. E. Duryea, the well-known American automobile builder. The fact that a horse can pull a heavier load if hitched close thereto is not denied, and is a fact, because the point of attachment is usually lower on the vehicle than the point of draught on the horse. In other words, the horse is so hitched that he partly lifts the vehicle, which lessens the draught, and this lifting effort increases his grip on the ground, which likewise increases his tractive ability. It is even true that mounting a rider on a horse's back will increase his pulling capacity, because it insures firmer foothold. With the motor-vehicle the short wheel base is an objection. If rear driven the tendency is to push the forward wheels under the obstacle instead of over, and the checking of movement due to the front wheels striking obstacles throws the weight forward and increases the difficulty with which the forward wheels rise over the obstacles. With a long wheel base these effects are less, and a greater proportion of the load may be carried on the rear wheels, leaving the front ones free to rise over the obstacles. These same conditions also demand, theoretically, a centre of gravity lower than the rear axle. The proportion of necessary increase of power to decrease the wheel base is hard to state, as the height of centre of gravity has much to do with it, and as the resiliency of the forward tires goes far to lessen the effect.

On the matter of side-skidding opinions differ. A heavy mass once started will continue its movement longer and against greater resistance than a light mass; so it sometimes seems that a vehicle heavily loaded on the rear wheels skids worse than one lightly loaded; but my belief is that heavily loaded rear wheels are not so liable to skid, and that a little care in driving will avoid most complaints from side-skidding. It is quite certain that a heavy load in front increases the liability of the rear wheels to slip, and when once started slipping they skid sideways easily. It is further evident that a short wheel base vehicle will swing around on a shorter arc in case of skidding, and will thus be more liable to upset than a longer vehicle, which describes a longer arc and requires more time to complete the same. This latter fact enables the driver to shift the steering so as to partly correct the skidding effect. All these facts point, considers Mr. Duryea, to the advantage of long wheel base, lightly loaded front wheels, and a quick, positive steering.

EARL RUSSELL has sent us an interesting account of an automobile tour he recently made in Sussex, the first part of which appears on another page of the current issue.

CONTINENTAL NOTES.

By "AUTOMAN."

THE great Paris Automobile Show closed its doors on Christmas Day immediately after the drawing of the winning numbers for the Tombola. I have given the readers of the *Journal* in the three last issues a short description of the novelties of the exhibition. It will not, however, be out of place, and I think it will be interesting for me to sum up the results and the impressions gathered from the show taken as a whole. To assist me in summing up, I shall make use of some statistics collected by the *Velo*. The first point that strikes me, and perhaps the most important, is the gross value of the exhibits, which reached nearly a quarter of a million sterling. This quarter of a million sovereigns is, of course, only the "sample card" of the trade, and, taking one exhibit with another, cannot represent more than a twentieth part of the stock manufactured or in course of manufacture. The stock, then, in France must be, allowing my hypothesis to be correct, at least five millions of pounds, and, if I am correct in estimating that this stock is turned over twice a

of the light cars up to ten or twelve horse-power. The speed of the motor tends, if anything, to diminish in this class of car, and the tubular frame is the most usual. In the heavy cars tube ignition is fast disappearing, being replaced by electric or electromagnetic; the latter form seems to be coming steadily to the front. The wood frame is still generally used, but the strengthening pieces are now fish plates properly and suitably constructed. The great feature in the heavy cars is the reduction in weight. This reduction, which has been going on by leaps and bounds, is not to the detriment of the strength, stability, or comfort of the car, but merely consists in the elimination of useless weight in the metal parts, which do not undergo any severe strains.

SMALL improvements in detail and finish are not wanting, and, lastly, the *tonneau* body is changing, and does not hold the field as securely as it did last year. Its back is being made much higher to keep out the dust and a third seat is being supplied. There are a great many "limousines" and also double phaetons.

IN the remarks and opinions I have made and expressed from time to time in the *Journal*, on the subject of a comparison of

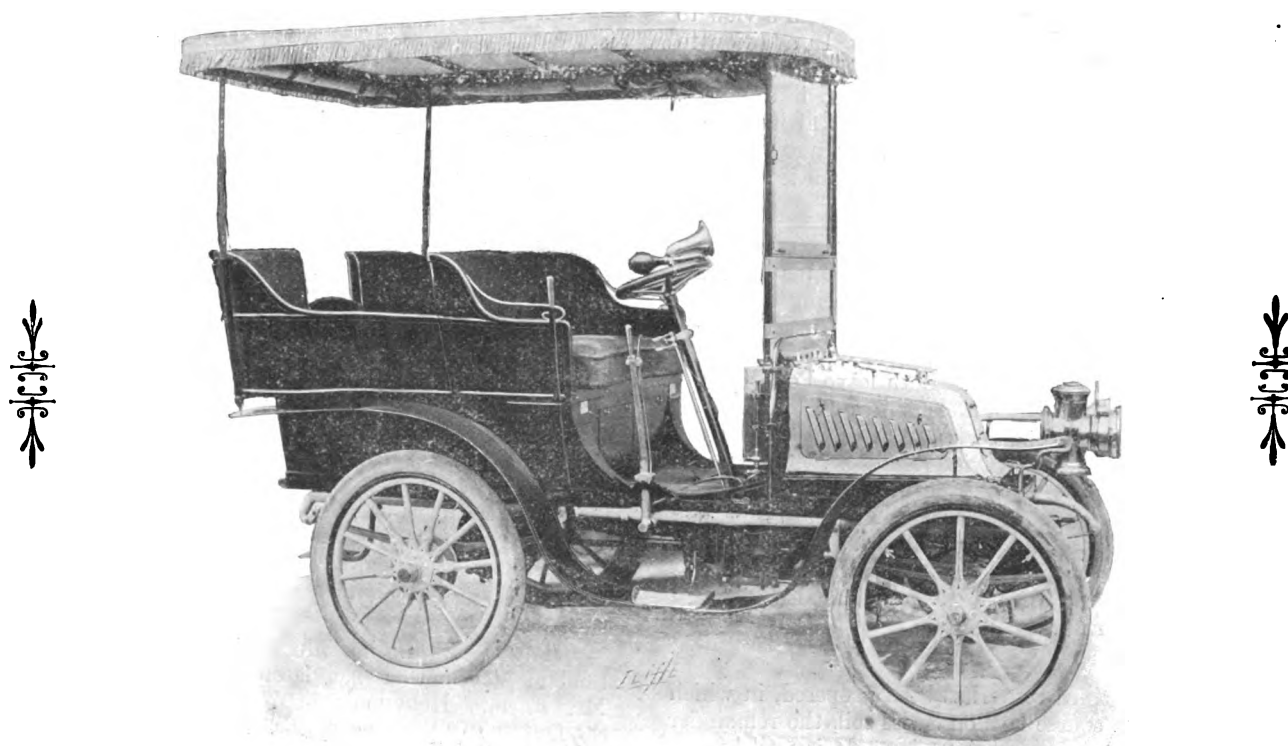


FIG. 3.—GENERAL VIEW OF THE "SPEED-KING" LIGHT CAR. (See page 794.)

year, the respectable figure of ten millions sterling would represent the trade in France.

LAST year there were more heavy cars and voiturettes, but this year the fashion has set in seriously for the "light car," which comes in between the two classes above-named, and which carries off the palm in numbers, as the following figures will show:—Heavy cars, 186; light cars, 230; voiturettes, 48. Motor-bicycles have increased from 29 to 81, whilst motor-tricycles have gone down from 45 to 21, quads following in the same direction. With regard to motive power, petrol and alcohol are far away ahead, five sixths of the total number being propelled by either one or both of these products. Electricity comes next, steam being last.

PRICES have, as a rule, been slightly reduced, but, on the other hand, as the light car is fast superseding the voiturette, the total sum expended by a purchaser is on the whole increased, the purchaser, of course, getting a superior article for his money. The universal or Cardan joint is still in favour for the majority

of the French and English motor-car industry, I have tried to make my object clear from the start, but in order that there may be no possible misunderstanding on this head, I would here repeat that my only object is to bring home to British capitalists and manufacturers, first, the undoubted fact that we are behindhand, and thereby losing a very large trade which is being carried on by our neighbours over the silver streak; and, second, the reason why we are losing this trade and the way in which we can get a big slice of it. In short, doing whatever lies within the power of my pen to bring the trade to our island.

BY the two letters which appeared on this subject in the last issue of the *Journal*, I take it that both Mr. H. A. Hector and Mr. S. F. Edge are in the main of my opinion, but desire quite rightly to call attention to points which give British cars the lead in several respects. Napier has undoubtedly struck out on good lines, and if the same go-ahead spirit animates the firm in the future we may soon be able to see the Napier considerably reduced in weight and able to compete successfully across the Channel. I am very glad to see that Mr. Edge agrees

with me on the head of international competitions, and I hope the New Year will see him taking a leading position in a great continental race, the sequel to which would undoubtedly be large export orders for his firm, and a step towards bringing the motor industry to our shores.

FROM many conversations which I have had on this topic, I find that a good number of automobilists are beginning to see the force of my arguments, and perhaps some of them may be induced to offer a big money prize to the British firm who can produce a car capable of winning the Gordon-Bennett or the Paris-Vienna race. It would be a patriotic action, and would bring, if successful, a really substantial increase to our engineering output and employment to thousands. There is yet time to do this before the 1902 season.

THE Government opposition to the "automobile week" at Nice is raising quite an agitation along the shores of the Mediterranean. In the first place, the Mayor has made special representations to the Ministry, and now every commune through which the racing cars would pass is taking steps with a view to the withdrawal by the Government of the veto. In addition to this quite a political campaign is being organised on the subject, and from what I have heard the races will be held in any case. If the Government remain firm in their present attitude, the races will be held on the other side of the frontier, and the large sums of money which it brings with it will pour into Italian instead of French pockets.

MEANTIME, the negotiations for the Paris-Vienna race are steadily proceeding, and the possible routes are being discussed. Dr. Stern, a member of the Committee of the Austrian Club, and himself the winner of the Semmering hill-climbing competition, proposes two alternative routes. Both leave Paris by way of Troyes, cross the Swiss frontier at Delemont, and touch Basle, but the first route recrosses the Swiss frontier at Sackingen, and again at Schaffhausen, leaving Switzerland for the second and last time at Singer, to enter Bavaria, from whence it proceeds *via* Stockach and Messkirch into Austria, arriving in Vienna *via* Salzburg and Linz. The second route only crosses into Switzerland once, at Delemont, and leaves it to enter into Austria at Constance, whence it gains Vienna through Innsbruck, Saint Johann, Salzburg, and Linz.

IN the meantime, a third route has been proposed, in which only twenty miles of the course lays on Swiss soil, the remainder being entirely French, Italian, and Austrian. It is well known that it will be difficult to obtain the necessary authority in Switzerland, and that, *par contre*, Italy will be only too glad to give consent. It strikes me forcibly, however, that the Swiss will soon find out on which side their bread is buttered, and make an outcry against the shortsighted authorities whose "Dogberryism" will drive so much money across the frontier; for, of course, money follows the whole course of the race, as anyone who witnessed the Paris-Berlin can testify.

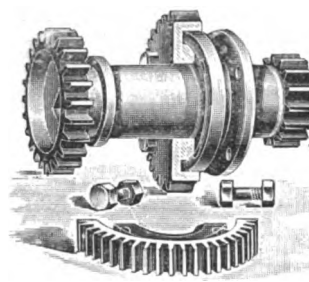
THE King of the Belgians went to Paris specially to visit the Automobile Show, and did the round of all the stands. Whilst visiting one of the stands of a contemporary the question of the Belgian road was mentioned, and His Majesty announced that Mr. Van Loo was actually considering the project, in conjunction with the Minister of Public Works, of a broad macadam road to connect the main road from Paris to the Belgian frontier direct with Ostend. It is obviously the object of this proposal to attract French automobilists to spend the summer at Ostend, and, moreover, as King Leopold himself has a villa there, it is easy to see how useful the road will be to him in the event of his wishing to visit Paris for a day or two. Truly the motor-car is becoming quite an important factor in life.

HERE AND THERE.

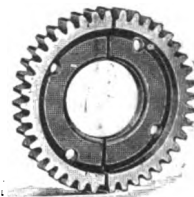


THE Fife Police Committee have asked the Head Constable to report as to the advisability of purchasing a motor-car for the use of the fire brigade.

USERS of Daimler and Panhard cars are well aware that the third speed is the one upon which the bulk of the wear occurs, and consequently requires renewing much sooner than the other gears on the change-speed gear sleeve. The first and second speeds on the sleeve rarely wear out, whilst for a few shillings the fourth-speed ring may be renewed. Hitherto, however, when



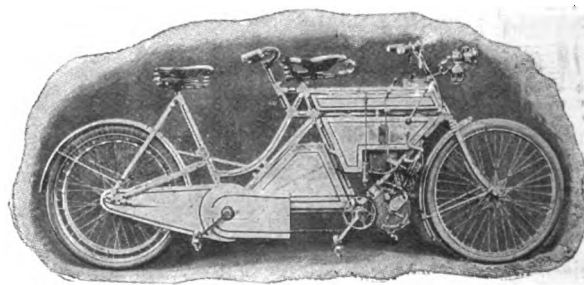
Daimler Gear Sleeve, showing method of fixing Third Speeds.



Loose Third-speed Ring for bolting to flange on Sleeve.

the third speed has worn out, the whole sleeve, costing about £8, has been thrown on the scrap heap. The above illustrations show the method introduced by Mr. Frank Morriss, of King's Lynn, of converting a Daimler gear sleeve to receive loose third-speed gear rings, and the loose third-speed half rings, which can be supplied at any time for fitting in the same way as a fourth speed after the sleeve has once been converted. It will be noticed that the old third-speed ring is turned away into a flange, of standard shape and size, with a protruding face or rim. The two halves of the ring are turned to dead size with a groove, which dovetails into this flange. This Mr. Morriss claims to be the vital part of the arrangement, as when the two half rings are bolted together a ring as perfect and strong as the former solid third-speed gear is obtained. Once the sleeve has been converted, any number of renewal third-speed rings can be supplied in the same way as fourth speeds. We commend the arrangement to the notice of public service companies especially, and to other users of Daimler and Panhard cars.

THE accompanying illustration shows the Phoenix motor-tandem bicycle that has lately been put on the market by Mr. J. Van Hooydonk, of 736, Holloway Road, London, N. So far as regards the motor, this is of the Minerva pattern, similar to that used on the Phoenix motor-bicycle, the cylinder being $2\frac{1}{2}$ in. in diameter by $2\frac{1}{4}$ in. stroke. The power is transmitted by a long belt to the rear wheel, the upper part of



the belt being guarded so that a lady can occupy the rear seat without danger. Another feature of the machine is a combined current breaker and exhaust valve lifter actuated by means of a Bowden wire. Automatic lubrication of the crank chamber is provided, and a sufficient supply of oil is carried for a run of no less than 800 miles. Large petrol tanks are also fitted, these having a capacity for a 200-mile run. The road wheels are 26 in. in diameter, and are fitted with 2 in. pneumatic tires.

THE liquidator of the Aberdeen District Motor Service Company has sold to an English gentleman the five motor-cars which were run by the company.

THE Vacuum Oil Company intimate that they have transferred their offices from Victoria Street to more commodious premises at York House, Norfolk Street, Strand, W.C.

THEIR works in Anchor Street, Chelmsford, have been sold to a firm of motor-car engineers by Messrs. Crompton and Co. The latter firm will carry on their operations in future at their new works in Writtle Street.

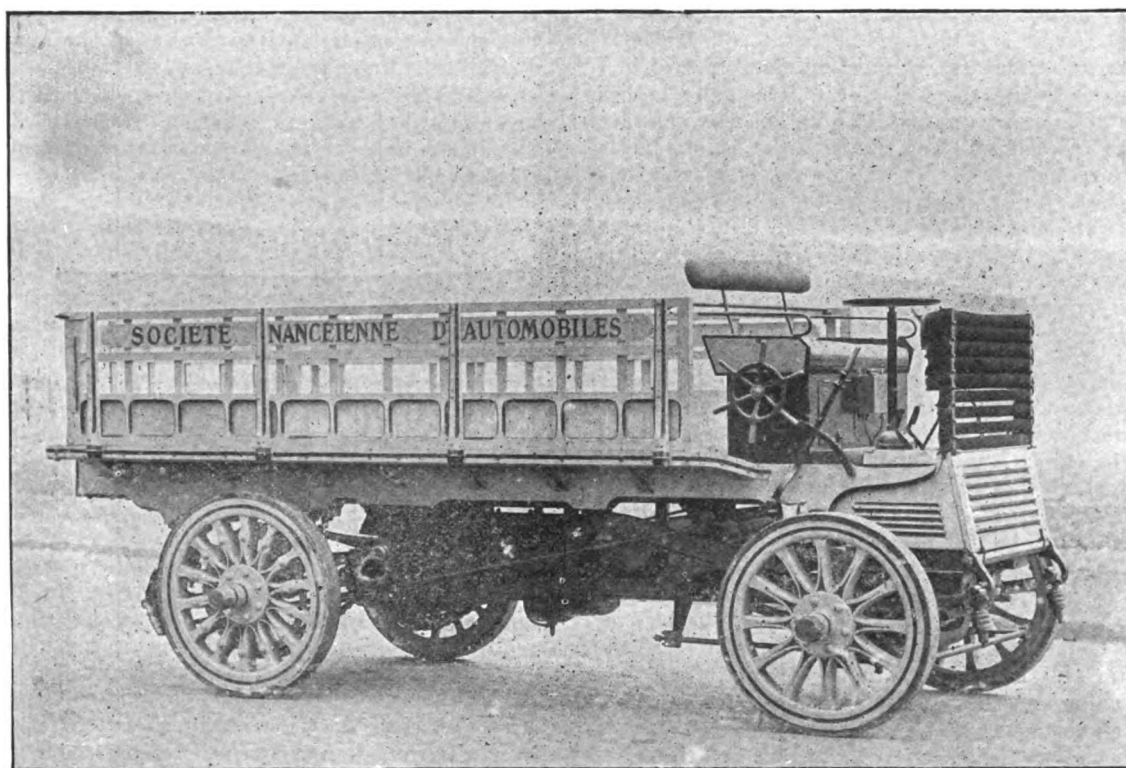
REFERRING to the comment in our last issue regarding motor-cars in Manchester, Messrs. Bennett and Carlisle, Ltd., of 239, Deansgate, Manchester, ask us to mention that they are the only representatives in Cottonopolis for the Locomobile steam cars.

THE Sirdar Rubber Company, of Duke Street, London, E.C., have sent us a little booklet showing sections of their solid rubber tires for motor-cars. Included in the list are a number of testi-

steepness of the hill, the driver lost control of the machine, which was overturned. The driver, a man named Ladds, received such injuries that he died whilst being conveyed to Kettering. His assistant escaped without injury.

THE opening lecture of the Winter Session of the Yorkshire Automobile Club is announced for Thursday, the 9th inst. at 8 p.m. Dr. Thresh, of Armley (vice-president), is to be the speaker, and the subject he has chosen to *thresh* out is "The Construction, Faults and Failures of Internal Combustion Engines Applicable to Automobiles." Tickets of admission are obtainable from the Committee. Members are earnestly desired to attend, and their friends are cordially invited.

At a recent meeting of the Tutbury District Council, the question was raised of an appeal to the County Council for notice boards to warn drivers of motor-cars against the danger of passing through Branstone at a high rate of speed, stated to be twenty or thirty miles an hour in some cases. It was decided that a letter be written to the Burton City Council, and also Superintendent Hicklin on the matter.



THE SOCIÉTÉ NANCÉIENNE'S ALCOHOL-MOTOR LORRY (SEE ISSUE DECEMBER 21ST, 1901).

[Le Chauffeur.

monials from users of these tires, expressing their satisfaction with the same.

THE 12 h.p. car exhibited by Messrs. Panhard and Levassor, of 14, Regent Street, S.W., at the Paris Exhibition, has been purchased by the Duke of Sutherland. This carriage, which is of the 1902 pattern, has a single speed change lever and is fitted with a body of an entirely new design, built especially by Messrs. Laboulet and Cie, of Paris.

MESSRS. R. CUNDALL AND SONS, Limited, Engineers, Shipley, Yorks, inform us that in consequence of the success of their stationary oil engines, and after much experimenting, they are about to put a heavy oil car on the market. The engine will be of the slow-speed governed twin-cylinder horizontal type, with electric ignition. At 850 revolutions per minute the engine will develop 7 h.p.

A MOTOR-WAGON owned by Messrs. Wallis, Burton Latimer Mills, Northamptonshire, and used for conveying heavy loads of flour, was being driven down Rockingham Hill on Friday of last week, when, owing to the slippery state of the road and the

GOURDIE, the young man who is charged with killing the boy Cross and injuring several other persons by running them down with a motor-car in High Street, Perth, last November, is to be brought up at the Circuit Court at Perth on the 7th inst. Mr. Arthur Dewar, advocate, Edinburgh, has, it is understood, been retained for the defence. As there are about thirty witnesses for the prosecution, and a large number for the defence, the trial is likely to be a long one.

THE Committee of the Automobile Club announce that a meeting of representatives of manufacturers and sellers of automobile vehicles will be held at the Automobile Club, 4, Whitehall Court, London, S.W., on Wednesday, January 22nd, at three o'clock, to confer with the Committee of the Club concerning:— (1) A trial of automobile vehicles in 1902; (2) a proposed trial of motor vans and delivery carts; (3) the date of the Automobile Exhibition after the exhibition of April, 1902. The Committee ask, in the event of any maker or seller of motor vehicles not receiving an official invitation to this meeting, that this announcement will be accepted as an equivalent.

FLOTSAM AND JETSAM.

By "FLANEUR."

TO a very large extent I can endorse the letter signed "W. J. Barnikel," which was published in the last issue of this journal on the subject of the Motor Union. That that body is accomplishing the feat of "hiding its light under a bushel" with conspicuous success I am not prepared to deny, but I am not prepared to accept Mr. W. J. Barnikel's inference that it is the duty of this journal or of myself as an individual to do the work which legitimately appertains to the Union officials. Nor does it seem fair, moreover, to lay the whole blame upon their shoulders. The original paragraph to which Mr. Barnikel refers was a criticism of the aloofness of the somewhat substantial proportion, among the entrants for the Southsea run, of those who neither belonged to the Automobile Club nor the Motor Union, and his contention is that these abstentions, leaving the Club out of the question, are due to ignorance of the very existence of the latter body. There are "hundreds of your readers," he says, "who know nothing about it."

It is the comprehensiveness of this estimate to which I must take exception. I have the strongest doubts as to whether one in ten of the anniversary tourists in question was unaware of the existence of the Union. The ranks of the automobilists are receiving new recruits at a very rapid rate, it is true, but the majority of those who participated in the anniversary run must have owned cars long enough to have been fully cognisant of the foundation of the Union, and to have read the prospectus of its projected operations, which was published in the automobile journals, and the report of the preliminary meeting.

MOTOR-CARS have not yet become so commonplace that men can purchase them offhand round the corner in as matter-of-fact a manner as though they were buying a portmanteau over a counter; to some extent every existing *chauffeur* knows what is going on in the automobile world, and must be an exceptionally self-confident and an exceptionally lucky individual if he can drive his car, year in and year out, without feeling his dependence at times upon other automobilists. Hence, while it may readily be admitted that there are automobile tiros who as yet know nothing of either Club or Union, the bliss of perfect ignorance could hardly be proclaimed by the Southsea tourists, and I am obliged to maintain the opinion that they forebore from joining the organisations named out of sheer laziness and an ignoble willingness to profit by the labours of others without themselves incurring either trouble or expense.

At the same time, I should be sorry to let slip any opportunity for furthering a good cause, and, if there be any reader of this journal who is really unaware of the existence or functions of the Motor Union, let it be stated herewith that that body was formed a few months ago mainly for two objects. The first was to relieve the Automobile Club, already fully engaged in good work in divers directions, of the labour of taking up legal cases in which automobilists were the plaintiffs or the defendants, a department in which there is much to do while police aggressiveness, magisterial stupidity, and horse-owners' malice are so discreditably rampant. An enumeration of the leading examples of successfully fought actions, or of monetary awards to members in respect of the fines or costs which they had incurred, was circulated to the guests at the annual dinner of the Automobile Club on the 14th of November last; I am not aware as to whether the members of the Motor Union as such received a similar synopsis.

In the second place, the Union was founded to bring within the fold of an organised body all those automobilists who were

unable or unwilling to become members of the Automobile Club. The latter are *ipso facto* members of the Union, and 7s. 6d. per head is paid out of their subscriptions to the Union funds, but members of the Union alone pay a guinea annually.

DISMISSING, however, as a matter of detail that will right itself, the mere question of whether or not the Union has been sufficiently "boomed," there is no room for doubt as to the desirability, nay, duty, of every automobilist to belong to it and assist in furthering its interests. It has always appeared singular to me that the average Englishman should be so terribly reluctant to ally himself with any concern that is formed for the corporate good, and only pay out his shillings or pounds to what will bring him a direct return. To adduce a striking example I may quote the case of the Roads Improvement Association, a body which deserves the support of every user of a motor-car, and equally of every cyclist, horse-owner, or even pedestrian. Yet its membership can probably be counted by hundreds only instead of tens of thousands. Road-users are now confronted with prospective evils in the shape of encroachments in every direction by tramway extensions, only made possible by a nefarious and never contemplated perversion of the Light Railways Act. In fighting these projects alone the Association could usefully spend thousands annually, added to which there is a comprehensive scheme of highway reform to be carried through, without which we shall never obtain scientifically-made and decently-maintained highways.

If properly supported the Association could hammer home the little-known fact that, narrow as some of our roads are, and overhung by buildings which would be costly to remove, our trunk roads were designed to be maintained across their whole width, whereas for scores and scores of miles one sees them bordered with grass. In the anti-railway days coaches used to be driven six abreast along the Brighton Road; the same could be done now without any demolition of bricks and mortar, but simply by removing the grass, and maintaining the entire available surface. There is a practically unlimited field before the Roads Improvement Association, and I would strenuously exhort every reader of these lines to enrol himself as a member, and send an annual subscription—it is little enough—of five shillings to the honorary secretary, Mr. W. Rees Jeffreys, at 45, Parliament Street, S.W. I may add that the Association really means business, and does not propose to drag out a supine existence, feebly bleating for an unobtainable Utopia; while the fact that among those who are actively engaged in furthering its objects are the Hon. John Scott Montagu, M.P., Mr. W. Worby Beaumont, and Colonel Crompton, R.E., should sufficiently commend it to the sympathies of automobilists.

Two correspondents have very properly called attention to a recent comment of mine on the subject of turning corners with a car, and the lifting of the off wheels at high speed. Whatever my other faults I hope that unreadiness to own myself in error is not one of them, and I frankly and freely acknowledge that my *obiter scriptum* was quite wrong. Perhaps the kind readers who have pointed out the lapse will accept my apologies, and charitably attribute it to the exigencies of the occasion. I cannot plead Christmas revels, or the effects of a Channel passage, but if I set the inaccurate comment down to haste, born of the desire to fly to Paris and the show without leaving arrears behind, I shall have named the actual cause of mine offending. *Humanum est errare*—you know the rest.

WE are informed by Messrs. D. Napier and Sons, Vine Street, Lambeth, S.E., that they are prepared to undertake repairs to motor-cars of all kinds. This should be welcome news to owners of automobiles who have experienced difficulty in getting repairs done by skilful mechanics.

STANDARDISATION IN MOTOR-CAR BUILDING.

THE stock answer to the demand for low-priced motor-cars is that types are not yet sufficiently fixed for their manufacture in such numbers as to ensure economy in production to the extent which has been attained in other branches of mechanical work, a statement true for the most part, and leading to a general aspiring towards "standardisation." This is, indeed, a word to conjure with in these days, and one accepted by many as a full, perfect, and sufficient explanation of American and German manufacturing success, and the panacea to restore our own precarious position in the same branch of industry. But, like most expressions useful in controversy, it owes much of its virtue to inexact definition, and, in connection with the present subject, offers at least two aspects which may be roughly distinguished as that of the manufacturer and that of the user, though naturally progress of any kind should affect both. The former of these involves the evolution of a type of machine sufficiently near perfection not to be liable to sudden supersession or changes needing important structural alterations, a good instance of the kind appearing in the modern bicycle. Here the result of a standard type has been to evolve, along with a certain number of bicycle firms, others whose business is specialised into the production of tubes, chains, bearings, and other components, and an immense number of local makers whose work consists solely in assembling the same. The only case in automobile work showing any parallelism is that of the American steam car, and though this is not without merit, it is at least questionable whether improvement has not been sacrificed to permanence of pattern, to demand which of the motor-car at this stage is somewhat premature, though the tendency to unification of type among cars in general gives promise of its approach in the future. When it arrives, the industry of assembling cars from parts supplied by big firms will probably receive a great impetus, though whether this is a desirable result is perhaps questionable.

The other aspect, which may be defined as the standardisation of parts, as opposed to that of design, is one which admits even now of partial realisation, and appeals more immediately to the user. The great original step in this direction, namely, the Whitworth thread, has benefited him to an extent which is not easily realised. It "comes natural" to hunt for a nut in a country blacksmith's shop in the full expectation of finding one to suit, or at least a tap to match, and what the motorist's troubles would have been with the chaos of screws existing in pre-standard days lies beyond his experience. Even here, however, the standard may have its disadvantages; a finer thread in some motor parts, especially where adjustment is necessary, would have points in its favour, and the writer has occasionally used such in defiance of future trouble in replacing studs and nuts that *would* work loose in spite of all efforts to lock them. Chains, fortunately, are fairly uniform, chiefly owing to their production having been for a time a practical monopoly, and the popularity of the tricycle has led to such a wide adoption of the De Dion ignition plug as might well be universal, most varieties being obtainable in this thread. It is to be regretted that nuts and bolt-heads have not, as regards their external sizes, yet fallen into standard line, most cars needing an absurd multiplicity of spanners, but beyond these and the lighter types of ball-bearings, it is difficult to suggest as yet any further practicable uniformity. The principle of interchangeability of parts, however, or a strict adherence to standard within the limits of one factory and one year's production of cars, might be much better observed, though it involves an adherence to gauge and template not always realised by even skilled workmen in this country, and until progress becomes slow enough for the principle of standardisation to extend to engines, gearing, and frames generally, the approach to it within these limits will have to suffice the motorist, and he will not be unreasonable in demanding it.

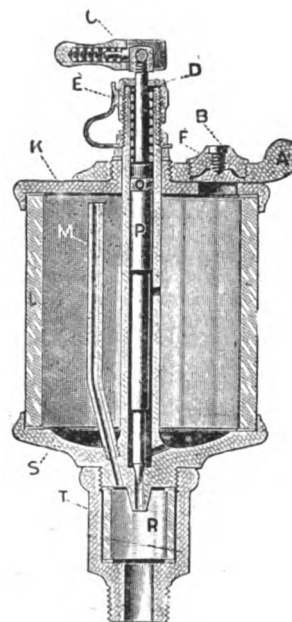
R. W. B.

It is on Wednesday, the 12th February—not the 13th—that the Lord Chief Justice Clerk of Scotland will read a paper on "Reminiscences" at the Automobile Club.

THE PARAGON SIGHT-FEED LUBRICATOR.

THE lubricator shown by the accompanying sectional drawing has been specially designed for use with petroleum spirit-motors, and has a number of advantageous features, among which should be mentioned its compactness. The filling arrangement consists of a screw-down slide filler. Referring to the illustration it will be seen that the slide A screws down on and around the lid of the cup, and has a loose plug which covers the filling hole when the slide is swung over to a closed position. The loose plug is so arranged that the wear on same can be adjusted by turning down the screw B. This construction makes it possible to secure a large filling hole—a very desirable feature.

The feed can be put on or off by raising or lowering the cam lever C. The rate of feed can be adjusted by turning the nut D, which is prevented from loosening by a spring E. By this arrangement the feed can be set and turned on or off without disturbing the rate of flow. The cup is thoroughly packed both around the stem and at the top and bottom of body and sight feed glasses, therefore cannot, it is claimed, become leaky. The whole cup is secured together by a special lock-nut construction, which is said to make it impossible for the cup to jar apart.



through the shaking of the engine, and also to dispense with the annoyance of oil leaks. The sight-feed glass R is large, and can readily be cleaned by unscrewing the upper part of the cup from the base piece. This lubricator is manufactured by the Lunkensheimer Company, of Cincinnati, Ohio.

THE Government of Porto Rico has ordered two automobiles for the use of the Public Works Department.

DEANS AND Co., LTD., has been registered with a capital of £5,000 in £1 shares, to take over the business of cycle and motor manufacturers and repairers, etc., carried on at Selby or elsewhere as Deans and Co. Registered office: The Holmes, Selby, Yorkshire.

THE Sussex Automobile Company, Limited, has been registered with a capital of £4,000 in £1 shares. Object, to acquire from H. C. Harris and W. L. Duck the business of agents and factors, makers and repairers of automobiles and accessories now carried on by them at 163, Western Road and Castle Street, Brighton, as the Sussex Automobile Company, and to carry on the said business. The first directors (to number not less than two nor more than five) are C. Harris (chairman) and W. L. Duck. Registered office, 163, Western Road, Brighton.

CORRESPONDENCE.

THE WEIGHT OF MOTOR-CAR BODIES.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Your article in a recent issue on the question of durability of motor-carriages and the excessive weight in the past of English coach-building, has, I venture to think, no difficulty, so far as English manufacturers are concerned, for the future. Less than two years ago the carriage bodies which I purchased, and had made for me, in England weighed nearly three hundredweight. To-day we are getting most beautiful designed, roomy and comfortable bodies of every description, luxuriously upholstered and sprung, the largest of which, to hold four people, weighs under 100 lbs. This result has not been achieved in one leap, but by continual improvement in detail, and by making the body entirely of aluminium, not a particle of wood being used in its construction. A new type of workman had to be employed and trained in making this type of body, but the result has been well worth the expenditure of time and money, as it means a reduction of over 200 lbs. in weight on a large motor-carriage.

Then, again, we come to the frame. Eighteen months ago we had to get a channel steel section, cut it into length and bolt it together, all of which meant weight. Now we have greatly improved material and a saving of nearly one hundredweight in the channel steel frame alone, owing to the better methods of construction, doing away with all joints in the frame, and at the same time a more suitable material. In the wheels the same happy state of affairs exists, a saving of 25 per cent. has been effected in the weight without any reduction in strength, owing to our having had time to get very much finer wood more suitable for the work it has to do.

I just mention these few points, but throughout the whole, at any rate of the "Napier" motor-carriage, improvements of this sort have been going on continuously since their first great success in the thousand miles competition organised by the Automobile Club. If the matter is of interest to your readers I shall be pleased to detail the various parts in which weight has been saved, and how it has been saved, at a latter date.—Yours truly,

S. F. EDGE.

MOTOR-BICYCLES FOR 1902.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I am pleased to learn that I misconceived Mr. Teschemaker's attitude towards motor-cycling, that is to say, his attitude of three weeks ago, for I now observe that he appears to forget what he then wrote against it, as not one phrase in his previous tirade can by any possible means be read to convey what he now admits, that one "will get much enjoyment out of it." But if I have misconceived Mr. Teschemaker, I must this week return the compliment, for most assuredly I never tried to upset the point that a bicycle-motor will not usefully develop more power than its belt will transmit. To start with, this point was never made in his letter, and what I *did* imply was, that catching hold of the large pulley and making the belt slip on the small one, is not a fair test of the belt's capacity to transmit power, from the small, to the large, and that was Mr. Teschemaker's test and method of applying it in the sentence I criticised. His new reading of the previous letter turns an obscure point into an obvious fact, which I should no more try to upset than I should try to push a jibbing Panhard up Ben Nevis.

I trust that Mr. Teschemaker will get much pleasure out of the new motor-cycle he has ordered, and that he will write and tell us his experiences of it in due course. May I inquire if he has ever ridden a Wolfmuller or a Pennington? They were both rear driven direct by horizontal cylinders on to small wheels, and both "proved themselves," which, as Mr. Teschemaker says—and here I beg to agree with him—the Holden has yet to do. It certainly is a well-made and carefully-thought-out machine, and that is half the battle. There still remains, unfortunately, the other half.—Yours truly,

A. E. S. CRAIG.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Being the possessor of a Werner 1900-pattern motocycle I have been reading with much interest the many letters which have appeared in your columns on the subject of motor-bicycles, and the Werner in particular. As I am intending to purchase another motor-bicycle I have studied the new type Werner, and find that, practically, every fault in the front driver of which complaint was made has been remedied in the new.

I have particularly noted the following improvements, viz., carburettor, lubrication, flat-belt drive, absence of side slip, and general finish. The carburettor is now a simple automatic spray carburettor, no float being used. A means of lubricating the engine while running is provided, and a supply of oil for 200 miles can be carried. Regarding the drive, particular emphasis is laid upon the fact that in practice, and after trying many other types, the flat belt fitted to the new Werner has proved the most satisfactory. Side slip is said to be felt less than on an ordinary safety, owing to the length of wheel base, weight being low down and properly distributed between the wheels, and, what is most important, rear-driving; also tires with vulcanised non-slipping treads, made specially by the Dunlop Company, are fitted.

Contrary to a remark made by one of your correspondents (Mr. Fawcett, I believe), I am told that the new Werner is even faster than the old; the why and wherefore of this is not difficult to understand—a larger engine, spray carburettor, and more effective belt being fitted. I am also assured that the finish of the 1902 machines will be of a higher standard, as they

are being prepared specially for the English market. I hope that the correspondence in your columns re motor-bicycles will continue, as I am sure it will be of interest to all motorists and those intending to take up this really exhilarating pastime.—Yours faithfully,

J. L. PITCHER.

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TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Your correspondent, "Electrical Engineer," wishes to know what the "regulator" is as applied to my Werner (1900). Allow me to say it is simply an ordinary throttle valve fixed in the supply-pipe just before the mixture enters the explosion-chamber. In the 1901 pattern Messrs. Werner have arranged it in a very neat form; mine, which was made soon after I bought the machine, is adjusted by a wheel and screw in such a way that the full power can be applied instantaneously if required. I shall be pleased to let "Electrical Engineer" see my machine should he like to make an appointment any time after January 10th, at 4, Oxford Road, Ealing.—Yours truly,

T. FREDK. HUNT.

MOTOR-CARS FOR THE TROPICS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—In further reference to my letter published in yours of December 21st, I should like, with your kind permission, to make a few further remarks, as from what I see in the same issue I think they may be useful to your readers.

On page 768 it is stated that "Dr. Boverton Redwood expressed the opinion" ending with the following: "Experiments, however, proved that no such spark would ignite petroleum or the vapour rising from it." Now, from what I have heard of Dr. Boverton Redwood, I can only come to the conclusion that he has been wrongly reported, or that great ignorance on the subject must undoubtedly prevail even now in England.

I made a long series of experiments over sixteen years ago on this subject. I found later that I might have saved myself all this trouble by buying a book upon the subject which I saw later, as the knowledge was common property. However, personal experiments always teach one more, and the knowledge thus learned sticks to one. I used vapour of gasoline, benzoline, bisulphide of carbon, alcohol, etc. I used an electric spark from an induction coil giving $\frac{1}{2}$ in. in air; also from a frictional electric machine, and white-hot spiral of platinum (both free and also wound round a porcelain bar). I used all richnesses of vapour at atmospheric pressure, and I never got an explosion till the mixture was compressed, and then only when gas and air were in correct proportions. (I am writing 8,000 miles from my workshop and notebooks, but I think I got one explosion from a very hot flaming platinum on the point of melting.) An open flame I found, on the contrary, will explode at atmospheric pressure and almost any admixture. Further, I found that compression alone will, when carried far enough, explode a mixture spontaneously. Years later, when erecting Hornsby-Akroyd oil engines, I found this principle employed, and after I had erected a large number I tried it again on petrol, and found it worked all right. I think people are deceived by their acquaintance with coal gas, which ignites easily from a spark at atmospheric pressure. Pure hydrocarbon gas will not. If you doubt me try it by means of the usual gas lighter (frictional, giving a $\frac{3}{4}$ in. spark).

I went very fully into all this many years ago. I made a machine for making gas from any hydrocarbon, sufficient to supply a 3 in. pipe continuously. I had seven hundredweight of iron weights driving a large fan under water, supplying air to the carburettor; the weights drove clock-work, and had a fall of 20 feet. Gasoline came out best of all, and cost me 12s. 6d. per 1,000 feet, and drove a 5-h.p. engine well. I afterwards dropped it all, and used the vapour direct from a carburettor as everyone nowadays does. When I have secured a patent—in a short time I hope—I will tell you something else I found out, not at present in use.—Yours faithfully,

F. H. H.

THE "ALLUMEUR ELECTRO-CATALYTIQUE."

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—The allusion by "Automan" in last week's *Journal* to the above ingenious invention has struck me a good deal, and its introduction to the market will, no doubt, be watched for with interest by motorists in this country. If a success, it should prove invaluable as a substitute for tube ignition, and enable one at least to get home, in the event of the ordinary electric ignition going wrong. Inability to advance or retard the sparking would be a disadvantage, but otherwise the idea sounds very promising.—Yours faithfully,

S. P. ALEXANDER, M.D., M.R.C.S.

A QUERY RE STEAM-CARS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—The answers to my query re exhaust steam showing from steam-cars are disappointing. The circumstances under which the car will run satisfactorily and keep within the law as to emitting steam are, according to "Condenser," that the air must be sufficiently cool to condense the exhaust steam, which on a hot summer's day is not to be met with, when the thermometer stands between 70 and 80 deg. in the shade.

"Chauffeur," in your issue of December 21st, admits that on a hill the condensers fail to condense all the steam, and as I live in the switch-back

county of Devon I should be in a chronic state of breaking the law, and being "run in" by the intelligent country police. I intend having a motor-car as soon as I can decide which sort. I lean to the steam-car because it is practically noiseless, and has little vibration, and one can stop and converse with a friend without having to raise one's voice or be shaken to pieces as with a petrol car, but with the latter one need not appear before the county bench unless one voluntarily breaks the law by excessive speed, but the steam-car breaks the law for one by the emission of steam on hills, and in cool or damp weather. In nearly all the photographs I have seen of running steam-cars the steam is visible. I grant the steam-car is the most comfortable in a level country and in towns, but for touring in a hilly country I am afraid it is a failure.—Yours truly,

NAVAL ENGINEER.

THE MOTOR UNION.

To the Editor of *The Motor-Car Journal*.

SIR,—Surprise has been expressed that the Motor Union has not been advertised. It has been felt wise that, before taking steps to make the Union generally known to the public, the Union should be able to show a report of work done, which would satisfy automobilists generally of its utility. I am directed to ask that you will kindly allow me to point out to your readers the following few particulars concerning the Motor Union:—

- (1) The Motor Union absorbed the Motor Vehicle Users Defence Association, which had done most useful work.
- (2) All members of the Automobile Club and its affiliated clubs are *ipso facto* members of the Motor Union.
- (3) All automobilists may become members of the Motor Union without election on payment of a subscription of £1 ls. per annum.
- (4) The Union does not attempt to defend prosecutions for furious driving unless it is abundantly clear that the prosecution is vexatious and without cause.
- (5) But the Union specially devotes itself to fighting cases in which great principles affecting automobilism generally are concerned.
- (6) At the same time, it renders, and is rendering, valuable advice to motorists who have had actions brought against them.

The following are a few of the principal cases which have recently been fought by the Motor Union:—

Steam-cars.—Mr. Arthur Sharpe was summoned under the following three heads:—(1) For working a locomotive without a licence; (2) for travelling at more than four miles an hour; (3) for failing to employ two persons to attend on the locomotive. The case was taken up by the Motor Union, with the result that the three charges were dismissed. If this case had failed it would have rendered steam-cars liable under the Traction Engine Act upon a temporary failure to conform to the Light Locomotives Act, and would have almost put an end to the use of steam-cars in this kingdom.

Storage of Petrol.—The appeal defended by the Union on behalf of Messrs. Napier and Sons established the fact that manufacturers, merchants, and agents of motor-cars may store petrol, or may use or keep the same on their premises for use, and for the purpose of running their cars, without a licence. If this appeal had not been defeated by the Motor Union power would have been given to local authorities throughout the country to refuse to grant licences to store petrol and otherwise to hamper manufacturers of motor-vehicles. The case was, therefore, of vital importance.

Damage to Vehicles.—The Hon. Leopold Canning's case was one in which a claim was made for damage to a milkcart. By the timely intervention of the Union the case was abandoned. In thanking the Union for their prompt action, Mr. Canning wrote:—"When the solicitors of this man found that I had the whole of the Automobile Club and the Motor Union behind me . . . their plans were completely frustrated, and when I showed them the letter in which you had promised to contribute not less than five guineas the case fell through at once."

A Collision Case.—In a recent case of collision at Leicester, a member of the Union wrote for advice which was at once given, and as a result the member in a letter of thanks says:—"You will no doubt be pleased to hear that through it I have been able to make a satisfactory settlement."

But the most important work which has been carried on by the Union in conjunction with the Automobile Club is the legislative work, viz., the attempt to bring about a change in the law affecting automobiles. A committee composed of very influential gentlemen is now sitting regularly with a view of preparing a Bill, and it is thought probable that this will be introduced into Parliament next session. It will be seen from the above short statement that the Union is by no means dead, but is an active, and, it is believed, extremely useful body. It is intended to make the purpose and work of the Union fully known at an early date. In the meantime, automobilists are reminded that they may join this body at once by sending one guinea to the Secretary of the Motor Union, Automobile Club, 4, Whitehall Court, S.W.—Yours truly,

C. JOHNSON,
Secretary.

WE hear that the New Orleans Motor Company, of Twickenham, are at work on a new four-cylinder car.

THE Belgian Automobile Club is considering a proposal to organise a 500-kilometre tour of Luxembourg during the coming season.

EDINBURGH AUTOCAR COMPANY (LIMITED).

A SPECIAL meeting of the shareholders of the Edinburgh Autocar Company (Limited) was held last week for the purpose of considering a resolution for the winding up of the company. At a recent meeting it was agreed that the directors should issue a prospectus asking for additional capital of £5,000, failing the raising of which the company should be wound up. The Chairman said the directors had gone fully into the matter of raising the capital. They issued a prospectus as widely as they thought advisable, and the result had not been what they expected. At least they had not got the £5,000, and they now awaited the shareholders' orders to proceed with the appointment of a liquidator to wind up the concern. They were at present working with six or seven cars, and the company had not been called upon to draw on the capital for ordinary expenses. It was no longer possible, however, to keep going with the small capital they had, and it would not be fair to any parties to continue the concern. He moved that the company be formally wound up, and that Mr. W. A. Middleton, C.A., be appointed liquidator. Mr. Robert McDonald seconded. In answer to a shareholder, the Chairman said they would see that the shareholders got every information possible. The motion was unanimously carried.

AUTOCAR SUPPLIES, LTD.

IN the Companies Winding-up Court, Mr. Justice Wright again heard an application arising out of a summons by the Autocar Supplies, Ltd., of Great Russell Street, for possession of the premises. Mr. Gore-Browne said the matter formerly stood over in order to see whether Mr. Selbach made an offer to the company by the previous day. Mr. Herbert Reed, K.C., with whom was Mr. Ford, said Mr. Selbach only returned from Paris on Friday the 20th ult. The Official Receiver said he had an offer of £580. Mr. Selbach was prepared to pay £550—10 per cent.—at once, and the balance within ten days. The Official Receiver accepted the offer, his Lordship intimating that unless Mr. Selbach completed the offer he had made he must go out of the premises.

THE MOTOR-CAR.

A song to the motor-car,
The wonderful, swift motor-car!
So stealthily gliding,
Slower traffic deriding,
'Tis a rollicking, gay motor-car!

A song to the motor-car,
The excitingly gay motor-car!
There's exhilaration
And wild exultation
In the rush of the fast motor-car!

A song to the motor-car,
The nerve-trying motor-car!
Dust clouds when 'tis light,
Eyes of fire when 'tis night—
Awe-inspiring's the motor-car!

A song to the motor-car,
The rushing Juggernaut car!
All dogs should have dread,
Lest like pan-cakes they're spread
On the track of the fast motor-car!

A song to the motor-car,
The cautious, though swift, motor-car!
Little children to shun
On its path when they run
Is a rule with the swift motor-car!

Brain and heart in the motor-car
Have had part in the motor-car.
The most patient skill,
Strong muscle and will,
Have evolved the fine, swift motor-car!

Then three cheers for the motor-car,
The time-saving, gay motor-car!
Soon all visits we'll pay,
Soon we'll shop day by day,
In our elegant, swift motor-car!

ALICE.

FURIOUS DRIVING CASES.

AT Perth, Frederick Jenkins, a motor-car driver, in the employment of Captain Slavenger, was charged with having, on 1st December, (1) on the public road leading from Perth to Coupar Angus, and at a part thereof in Scoone parish between the third milestone from Perth and Kinneir's Inn, driven a motor-car at a greater speed than twelve miles an hour; (2) and on said road, between the first and second milestones from Perth to Scoone, driven a car at a speed of fifteen miles an hour. Accused denied the charge. Two police constables, in the course of evidence, stated that they were stationed at the first and second milestones leading to Scoone, and they kept a note of the time the accused took to travel the mile, which

was a few seconds less than five minutes. Accordingly Jenkins had been travelling at the rate of over twelve miles an hour. Sheriff Sym, in deciding the case, said there were many instances on the roads in the neighbourhood where the pace should not nearly approach even twelve miles an hour. The only meaning of the words "twelve miles an hour" in the regulations was that in no case was that to be exceeded. For the first offence accused would have to pay a fine of £2 10s. On the second charge he would dismiss accused with an admonition.

At Edinburgh, Bailie Waterston gave judgment in the charge against Alexander Rose, a motor-car driver, who was accused of having on Saturday, 23rd November, driven a motor-car in Atholl Crescent, Atholl Place, and West Maitland Street in a furious and reckless manner. Evidence was heard at a previous sitting of the court. The magistrate said that taking the whole evidence into consideration, and also the previous good character of the accused, he found the charge not proven.

At Enfield Petty Sessions J. D. Hill, of Portland Mansions, Baker Street, London, W., was fined 10s., and costs, with the alternative of seven days' imprisonment, for furiously driving a motor-car to the common danger at Botany Bay, Enfield. It was alleged that he drove at a speed of between twenty and thirty miles an hour, a statement which he characterised as a ridiculous fabrication. He was driving at the rate of twelve miles an hour, he said, and the highest possible speed of the car was only sixteen miles an hour.

AN INTERESTING POINT OF LAW.

At Cullompton last week, Messrs. Fox Bros. and Co., of Wellington, were summoned for, being the owners of a locomotive, they did not cause it to be instantly stopped on one William Trott, who was driving in an opposite direction, holding up his hand as a signal. Mr. W. T. Booker (Wellington), who defended, contended that the offence was covered by the Act of 1865, whereas this was a motor-car used by Fox Bros. to convey wool between Wellington, Uffculme, Cullompton, and other places, and as with its vehicle it weighed less than four tons unladen, it came under the Light Locomotives Act, 1896, which exempted this offence as applied to such vehicles. In reply to the Bench, Mr. Booker added that the engine and vehicle were all on one platform, and he contended that it was not necessary to build the motor and vehicle separately, and link them together for use. The Bench read the Act as meaning that the vehicle must not weigh over three tons unladen to be regarded as a light locomotive. They decided that, inasmuch as the mechanical part of the engine and the trolley were all one vehicle in this case and weighed over three tons, the motor did not come under the Light Locomotives Act, 1896. They would state a case if necessary, as the point was an interesting one that ought, perhaps, to be cleared up. They also expressed a wish to hear the evidence.

W. Trott, farmer, Uffculme, said he met the motor-car in Commercial Road, Uffculme, on November 26th, and held up his hand at one hundred yards distance and again at fifty, also shouted, but no notice was taken by the driver of the car. Witness's horse swerved, and he narrowly escaped an accident. On every previous occasion he had met the car the driver had pulled up when requested.

Bennett and Curtis, the driver and stoker respectively of the motor-car, swore that the speed of the car was slackened at one hundred yards, as they saw Trott's horse was restive, although they did not see him hold up his hand, and at fifty yards from the horse the car was stopped dead. The engine was kept running, however, as that was sometimes necessary to keep down steam or pump water into the boiler. The magistrates said the fact that the engine was kept running perhaps accounted for the discrepancy in the evidence. The witnesses added that Trott backed into the carriage drive at their request, as the road was narrow, and they thanked him for doing so. The magistrates said, in view of the conflict of evidence (each party perhaps believing he was right), they would give the defendants the benefit of the doubt and dismiss the case. Mr. Booker asked whether, in view of the magistrates' reading of the law, the car must in future travel only four miles an hour, and have a third person to give assistance. Mr. Hepburn said a reduction in weight would meet the case, and bring the car within the Light Locomotives Act.

RESPONSIBILITY OF MOTOR-CAR DRIVERS.

In the Southampton County Court, E. W. Balne, of the Grapes Hotel, Southampton, sued F. Baker and Son, merchants, Northam Road, Southampton, from whom he claimed £1 in respect of damages to his motor-car, alleged to have been sustained whilst the car was standing in Castle Lane, Southampton, on Wednesday, September 18th, as the result of defendant's carman trying to pass the car with a horse attached to a coal cart. Mr. Godwin appeared for plaintiff. Plaintiff's evidence was to the effect that on the day referred to he left his motor-car standing outside the office of Messrs. Paris, Smith, and Randall, and that a coal cart belonging to defendants collided with the car and broke the splashboard off. Albert Lowe, clerk in the employ of Messrs. Paris, Smith, and Randall, said he moved the motor-car to allow the coal cart to pass, and left plenty of room for that purpose. The driver of the cart tried to drive his horse and cart past the car instead of leading the horse, and the cart collided with the car. The driver of the cart, for the defendants, said he had waited some minutes for someone to move the motor-car. He was careful in trying to

pass the car, but there was not room. His Honour said he did not think the owner of the motor-car had any right to leave it where he did unattended, and gave judgment for the defendants with costs.

MORE ABOUT A SPITTELEGATE PROSECUTION.

At the Spittlegate (Grantham) Petty Sessions, Mr. C. E. W. Lucas, on behalf of Mr. S. Harvey, nurseryman, of Nottingham, who was some weeks ago fined £5 and costs for furiously driving a motor-car on the Great North Road, again applied for a summons for perjury against Police-constable Bean. Sir Hugh Cholmeley, Bart., said the magistrates had given the application their careful consideration, and they came to the unanimous conclusion that that was a case in which they ought not to issue a summons against Police-constable Bean, and the application would be refused. Mr. Lucas said it was very unusual for a Bench to refuse a summons, and he would have to take instructions from his client as to further proceedings. Mr. Harvey said he could carry the matter further, and he would do so.

THROUGH A SHOP WINDOW.

At Westminster Police Court, Charles Robinson, motor-car driver, was charged with being drunk at Parkside, Knightsbridge, while in charge of a light locomotive. A charge of obstructing the police was preferred against Reynolds Barker, clerk, who gave an address at Chiswick. The police evidence was to the effect that the two men were in the motor-car early on Sunday morning, and that proceeding along Knightsbridge the machine was recklessly driven. Someone shouted, and the motor-car then ran on to the pavement and into the front of a shop window, which was smashed. Both the prisoners were evidently under the influence of drink, and wanted to drive off. When Robinson was taken into custody the other prisoner tried to get him away and asserted that the police were exceeding their duty. Mr. Dutton, who defended, said the fact was the motor skidded on the wet pavement. The prisoners had behaved foolishly, and of course the damage done would have to be paid for. Mr. Horace Smith said the conduct of the prisoners was most dangerous, and he fined each of them 40s.

On Tuesday, Mr. Gwilym Evans, the presiding magistrate at the Llanelly Police Court, warned motor-car owners against furious driving.

The rewards mentioned in our last issue with regard to the War Office motor-lorry trials, were somewhat premature. The Committee has not yet issued its report on the tests, and it may be some little time are it makes its appearance.

For the information of riders, the Chater Lea Manufacturing Company, of Golden Lane, E.C., have issued a leaflet giving particulars of their motor-bicycle fittings, with an illustration showing the machine built up. All the parts have been specially strengthened in view of increased strains and vibration, and they are in many respects similar to the firm's well-known tandem bicycle parts.

MR. H. J. BRETHERTON, a London engineer, recently wrote to the Winchcombe Rural District Council offering to run a motor-wagon or light traction engine from Cheltenham to Winchcombe if he could be assured of the support of the local inhabitants. The Council declined to assist in the matter. Electric trams are at present running along the greater part of the road to which Mr. Bretherton refers.

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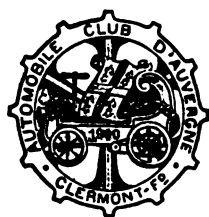
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COMMENTS.



ENTRIES for the Gordon - Bennett Cup closed at midnight on the last day of the old year, and up to a late hour it looked as though no challenger would attempt to wrest the coveted trophy from its French holder. Literally at the eleventh hour the Automobile Club of France received a wire from the A.C.G.B.I. entering for the race. The contest will therefore lie between England and France.

It will be remembered that Mr. S. F. Edge's 50 h.p. Napier, which was entered for the event last year, was, though it ran in the Paris-Bordeaux, per force of circumstances withdrawn at the last moment. A condition of the Cup is that every part of the car competing must have been made in the country which it represents. Unfortunately, Mr. Edge was compelled to exchange his British tires, damaged on the road between Boulogne and Paris, for a set of foreign manufacture. As stated in our last issue, the firm who will endeavour to wrest the Cup from France is the Wolseley Tool and Motor-Car Company, Limited.

Maidenhead Bridge Tolls.

AN extensively-signed petition from Berks and Bucks has been presented to the Charity Commissioners against the alleged right of the Maidenhead Corporation to levy tolls over Maidenhead Bridge. The petitioners urge that when the bridge was built, in 1772, tolls were created for the maintenance and repayment of loans, and that the Corporation are now in receipt of yearly rents which are more than sufficient for maintenance purposes. They also contend that the funds received by the Maidenhead Corporation are charitable funds, and that the Corporation ceased to have a right to administer them in 1836, when their administration should have passed to trustees appointed by the Lord Chancellor.

The Dust Nuisance.

As previously announced, the Automobile Club recently offered a prize of 100 guineas and a diploma for a practical method of removing or alleviating the nuisance of dust arising, to the annoyance of other users of the road, from motor-vehicles fitted with pneumatic tires. At a meeting of the Club Committee, held on November 7th last, a report was submitted as to the devices submitted in competition for the prize. It has been decided that, as the report was to the effect that none of the devices submitted were satisfactory, the period for the submission of devices for competition for the prize shall be extended to Monday, 2nd June next. It is thought that this extension will give an opportunity to those submitting devices to make experiments during the dusty weather.

Electromobilism in 1901.

IN the current issue of the *Electrical Times* appears an article from the pen of Mr. Theodore G. Chambers on "A Review of Electromobilism in 1901." After reviewing the progress made with electrical vehicles on the Continent and in America,

Mr. Chambers remarks that "as to the prospects of the future, it may be definitely stated that the experimental stages have been passed. Electromobilism in England has suffered from several adverse influences. The premature birth and early failure of various electric carriage and omnibus companies before sufficient experience had been gained, together with the placing of inefficient carriages on the market, estranged both capitalist and purchaser. Efficient electromobiles of English construction can now, however, be placed upon the market at prices ranging from £250 to £400; constructed to run from 35 to 70 miles on one charge, economical in running and cheap to maintain. The accumulator of to-day, without claiming to be perfect, is a sound commercial article, with a known life and a known and reasonable cost of upkeep. There is already a large demand for electric cars for both town and country use. With the extension of light electric railways a large field is opened up for electromobile 'feeders' where permanent ways are impracticable. The future is full of possibilities, and there is no valid reason why English capital and English brains should not combine to found a permanent and lucrative industry."

A Good Start.

WHATEVER other people may have done, the proprietors of the Carlton Hotel have begun the New Year well. On January 1st a day and night service of electric motor-cars furnished by the City and Suburban Electric Vehicle Company was inaugurated, and as Lady Brassey was the first to employ one of the new vehicles, her ladyship may be regarded as having unofficially started the service. Unlike the cabs which plied for hire on the streets of London some three years ago, the Carlton landaulettes are essentially light and neat in appearance, and may be recognised by their colouring—black and pale yellow. Electricity as a motive power has, from its many obvious advantages where only short journeys are anticipated, found favour with English ladies from the Queen downwards. Experience of this most pleasing form of locomotion gained whilst enjoying the hospitality of the Carlton should do much to further the cause in England.

The Nice Week.

IN spite of reports to the contrary, the Nice automobile week will be held as usual. In reply to a telegraphic inquiry despatched from the Automobile Club the following has been received:—"The automobile week will take place from April 6th to 17th, with the mile race, the La Turbie race, a tour from Paris to Nice, and a trial of heavy vehicles from Paris to Monte Carlo.—SAUVAN, Mayor of Nice."

The Reading Automobile Club.

THE annual meeting of the Reading Automobile Club was held at the Club premises on Friday, the 3rd inst. The chair was taken by the president, Dr. Major, and a large number of members attended. The treasurer's report for 1901 was presented by Mr. H. Callas and approved by the members. The following gentlemen were elected officers for 1902:—President, Dr. Claude A. P. Truman; Vice-Presidents, the Mayor of Reading (Mr. A. H. Bull), Sir Charles Russell, Bart., Messrs. Arthur Russell, Alfred Harmsworth, Charles E. Keyser, W. H. Taylor, Dr. A. C. Major; Hon. Treasurer, Mr. G. Loftus Brigham; Hon. Secretary, Mr. J. Paxton Petty. The members of the old executive committee were all re-elected for another year, and two new members were added. Dr. A. C. Major was awarded the Club Challenge Cup for 1901, having gained the highest number of marks on the various Club runs held during the past year. The Club is certainly to be congratulated on the great increase in membership it has attained during the past year, and also upon its financial position, which, as gathered from the treasurer's report, is extremely satisfactory, showing a substantial balance on the year's working.



A WINTY PROSPECT.

(Allgemeine Automobil Zeitung.)

The War Office Motor-Lorry Trials.

THE results of the competitive trials with self-propelled lorries designed for military purposes, which took place at Aldershot last month, have now been announced. It will be remembered that the Secretary of State for War offered a series of three premiums of the value of £500, £250, and £100 respectively for the three mechanically-propelled wagons deemed most suitable for the transport of the supplies, stores, and necessities of a column of troops in the field. The total number of lorries entered for the trials was but eleven. From one cause or another this number was afterwards considerably reduced, and when the Judges finally assembled at Aldershot for the purpose of conducting the tests only five were submitted to their notice. This was certainly somewhat disappointing, but fortunately there is compensation in the fact that the Mechanical Transport Committee are in the main satisfied with the performances of at least two of the vehicles submitted to them, and have recommended their purchase by the War Department. The first prize of £500 is awarded to the lorry, official No. 6—makers, the Thornycroft Steam Wagon Company (Limited), Steam Wagon Works, Homefield, Chiswick. The second prize of £250 goes to the lorry, official No. 3—makers, Messrs. Edwin Foden and Co. (Limited), Elworth Works, Sandbach. The third prize of £100 is secured by the lorry, official No. 5—makers, the Straker Steam Vehicle Company (Limited), 9, Bush Lane, London, E.C. As already indicated, the War Office has also purchased the lorries to which the first and second prizes have been awarded, for army use, and they will in all probability be at once despatched to South Africa for further trial.

Motor-Car Driving School.

THE difficulty of obtaining trained and reliable *mecaniciens* is one which grows with the ever-increasing number of motor-car owners. A suggestion recently made by the Secretary of the Automobile Club is one which, if put into practice, should go far towards meeting the difficulty. It is that the Club should open a school and teach driving, not only to members, but to their servants and others who might be desirous of qualifying for posts as drivers, certified as efficient by the Club. The Committee approved generally of the suggestion, and referred the matter to the Standing Committee, who will report on the working of the scheme. There can be little doubt that such a school would be well patronised by members anxious to drive their own cars, as well as their servants, and in the event of its being opened, let us hope, by a steady succession of young men wishing to qualify for well-paid situations as professional drivers.

The New Four-Cylinder New Orleans Car.

IN our last issue, we mentioned that the New Orleans Motor Company (Limited) were introducing a new four-cylindered light car, and on Saturday we had the pleasure of a run on it to Brighton. There was a stiff head wind, the roads were very heavy and greasy, and the latter portion of the journey was made in the rain—so the opportunity was a fine one for testing the capability of a new car. The present vehicle is an experimental one, and has only three speeds, but the car when exhibited at the Automobile Club Show will have four speeds, with an engine developing about 14 h.p. It is a very speedy car on the level, while up hill it is a little wonder, "cutting out" on the top speed on most of the hills. The regulation is obtained by an ingenious contrivance, enabling the driver to dispense with the use of the brakes. This was particularly appreciated on Reigate Hill, which was in a dangerously greasy state. We may mention, in conclusion, that no adjustment was necessary either on the outward or homeward journeys.

Motor-Bicycles.

MR. MERVYN O'GORMAN writes to the *Speaker* in praise of the motor-bicycle which runs only in one track as compared with the three of the motor-tricycle, and has a freedom from smell which constitutes a great point in its favour. The charge of petrol required by a motor-bicycle is so small that though Mr. O'Gorman has frequently taken a number of lady friends in tow behind his bicycle he has never had any complaint of a smell of oil, except perhaps on an exceptionally lengthy hill. And then comes a series of confessions. "As a cyclist," says Mr. O'Gorman, "I find no restriction to my moving at twenty-seven miles per hour in the open, and I am quite willing to be punished if I ride at eight miles an hour through the crowded and tortuous village of Uxbridge, for there such riding may fairly be called furious and to the common danger. In fact, I rejoice in the freedom of moving at thirty-five miles an hour along the Oxford road, down the long straight stretches where there are no cross-roads nor bye-roads, nor any traffic."

The Motor-Car Question.

As already mentioned in these columns, there is an interesting article under this title from the pen of Mr. Alfred C. Harmsworth in the current issue of the *Badminton Magazine*. "Speaking as a magistrate," the author remarks, "I am well aware of the valuable nature of the work done by our British unpaid judges, but it would be better for the commercial prosperity of England, threatened as it is on every side, if some of them evinced a little more patriotism by studying the motor-car question before attempting to drive another trade permanently into the hands of the foreigners. I admit that it is not by any means pleasant when driving a young and spirited horse to come suddenly face to face with a noisy engine filled with people dressed in the costume of submarine divers. It is equally unpleasant to be

approached from behind by one of these infernal machines, whose advent is heralded by a raucous and most annoying horn. It is an experience with which I am well acquainted, and as a result I have gone to the very slight trouble of breaking my horses to several sizes and shapes of motor-cars. As a rule, half an hour's careful work, accompanied by kindness and by carrots, will accustom any horse to the noisiest motor in existence, more especially if the people in the motor-car speak to the horse. Unfortunately, many drivers of horses will not take the trouble. It would be well, I think, if the County Councils of England instead of ruining British motor-car manufacturers would provide their road surveyors and others with good motor-cars which could be used, among other purposes, for the training of horses in localities, for a small payment."

Motor-Cycling.

THAT 1902 is likely to see an enormous extension of the use of motor-bicycles there is now not the least doubt. For some time past new motor-bicycles have been making their appearance at a rapid rate, and that considerable interest is taken in them is shown by the many letters we have received from readers asking for further information. From the first number of the *Motor-Car Journal* the motor-cycle has received due consideration, and latterly a large part of our space has been devoted to the subject of motor-bicycles. The correspondence at present taking place in our columns has attracted attention not only at home, but also on the Continent, and shows in a striking manner what a large measure of interest is being taken in the question of motor-cycling, or rather motor-bicycling. While there are many who consider that the disadvantages of the motor-bicycle outweigh its advantages, yet even in its present form a good deal of pleasure, not to speak of useful information, can be got out of the little automobile. That there is still room for considerable improvement is freely admitted, and with so many minds at work progress is sure to be rapid. It will be our object in the future, as it has been in the past, to keep readers fully posted as to the improvements effected in existing types of motor-bicycles, and also as regards any new models that may make their appearance. Our correspondence columns will always be open for the discussion of interesting matters connected with the motor-bicycle and with the pastime of motor-bicycling, and it is to be hoped that advantage will be taken of this opportunity of interchanging ideas on the subject.

Licences Wanted.

FROM several quarters we learn that the Inland Revenue authorities are beginning to appreciate the popularity of motor-cars, and they are looking more vigorously than of yore after the licences. One cannot take a walk without seeing an automobile of some sort or other, and apparently this fact has awakened the authorities to the value of motor-cars for revenue purposes. One thing leads to another, and the fact that motor-cars are becoming more numerous seems to have led to the discovery that many motorists have mechanics in their entire service, with the result that many owners of cars have lately received demands for 15s.—the tax payable in respect of male servants. There is little doubt that motor-cars will loom largely in revenue returns in the future—why then do our local authorities harass and worry those engaged in a pastime that is proving so profitable to the country, to say nothing of the value of the industry.

More Taxation for Motorists.

At a meeting of the Ashby-de-la-Zouch District Council a letter was read from the Lutterworth Rural District Council stating that they had passed a resolution to draw the attention of the Chancellor of the Exchequer to the more adequate taxation of motor-carriages, motor-cycles, etc., and asking that

that part of the tax be allowed for keeping up the roads in the various districts. The Chairman said it was thought by many that the owners of motor-carriages should contribute to the making up of the roads, and a resolution was adopted, approving of the Lutterworth resolution. Why motor-cars should contribute to the cost of the maintenance of the roads we do not understand. They certainly do little to injure the surface of the highways—especially when compared with ordinary horse-drawn vehicles.

An Automobile Tour in Caucasia.

THE Grand Duke Nicolas Michailovitch of Russia, who is an ardent motorist, has lately made an automobile tour of Caucasia in a 10 h.p. Mors car, covering altogether about 1,200 versts. The Grand Duke reports that few motorists have any idea of the poor roads and the steep ascents and descents to be met with in Caucasia, not to speak of the miles and miles of uninhabited country. Before starting on the tour a number of day trips were made from Borjom. The population is a mixture of Georgians and Armenians (Christians) and Kurds and Turks (Mahomedans). At first the arrival of the motor-car was the signal for the natives to take to their heels, but little by little they got used to the "Devil's car," as they call it, and before many weeks were over the young Kurds were



rather too much *en evidence* whenever the car was pulled up. Our illustration from *La France Automobile* shows the vehicle with a crowd of interested spectators at Akhalzieh, about forty-five versts from Borjom.

A New Garage.

AUTOMOBILISTS who have a place of business in the City will welcome a new departure of which Mr. C. Harrington Moore informs us. He proposes to establish a garage within three minutes' walk of the Bank of England itself, and now the City man will be able to take full advantage of his week-ends, driving straight away from his office on Saturday instead of going home to fetch his car, or at best to the existing club garage at Westminster; while in many cases it may make the difference of returning on Monday morning from the coast instead of on Sunday night. The premises have already been secured, and are situated at the City end of Queen Victoria Street. They are therefore approachable by the Embankment from the west, and by the Southwark Bridge from the south. Apart from week-end jaunts, moreover, the suburban automobilist may now drive to the City daily and be able to leave his

car where it will be properly attended to until evening, and where also he can obtain petrol, oil, or any other requisites, which are things unknown at a mews, even if such a place could be found within the City precincts where the owner or lessee would be willing to house a motor-vehicle. The Westminster garage has proved a great success, and it is only reasonable to suppose that the new venture will prove equally advantageous to the automobilist community.

Important Speed and Brake Trials.

As announced in a recent issue, with a view of obtaining records of the space within which motor-vehicles can be stopped when driven at high speeds, a trial of brakes will be held by the Automobile Club to-day, the 11th inst. The trial will take place on a private road in Welbeck Park, which has been placed at the disposal of the Club for this purpose by the Duke of Portland. There is nothing which is likely to prove a more effective weapon in the hands of those who speak in Parliament in favour of the revision of the law than indisputable statistics as to the distance in which a motor-vehicle travelling at a good speed may be pulled up. It may be taken for granted that the sudden and strenuous application of the brakes when the vehicle is travelling at a high speed is not calculated to do good to the vehicle, and must of necessity damage the tires, but it is considered that in view of the importance of the question members would probably be willing to fit their vehicles with old tires for the occasion. The event should also be interesting from a sporting point of view, as it is proposed to time the cars over a measured distance (possibly a mile with a flying start), in both directions, the road being not quite horizontal. Additional records of the speed of the cars over the last 100 yards of the run will also be kept, so that the true speed of the cars at the end of the run may be ascertained. The brakes will be applied on passing the finishing post, and the timing of the last 100 yards will probably be effected by electricity. The results should be of value to manufacturers, as proving to the public the efficiency of the brakes fitted to their cars. As the trials take place on a private road, the speeds may be published. They are held at this period of the year as the evidence is required at once in connection with the proposed revision of the law. Members who are willing to enter vehicles are requested to communicate at once with the Club secretary. The following have already entered cars:—Mr. Mark Mayhew, 7 h.p. Panhard; Mr. A. Harmsworth, 6 h.p. Daimler; Mr. C. Jarrott, 16 h.p. Panhard; Mr. C. Friswell, 8 h.p. Peugeot; Mr. Victor Hart, 12 h.p. "Teras"; Mr. S. F. Edge, Napier car; the Daimler Company's 18 h.p. car; Mr. Stanton's 24 h.p. Daimler; Motor Manufacturing Company's 12 h.p. car.

Something Wanted.

THE experience of a gentleman who left his car unattended in High Street, Hampstead, whilst he entered a shop one evening this week, points to the desirability of some system by which the starting device can be locked when the car is at rest. The owner of the car in question had only been absent about three minutes when a little urchin went up to the vehicle and pulled a lever, with the result that the vehicle started off at a terrific pace down Haverstock-hill. When some 150 yards from the starting point the runaway collided with a truck at the side of the road, which the force of the impact overturned. Continuing its career the vehicle gained the steep incline of the hill, where it came to grief. A brewer's dray was delivering at a house when the motor-car, which was swaying to and fro, struck the side of it and completely overturned, rolling a distance of twenty yards down the hill. The fugitive, which had travelled a distance of nearly a mile without doing any personal damage, was smashed to pieces. A simple device to prevent such a catastrophe, to say nothing of the "lifting" of cars, if it does not already exist, should command a ready sale.

Fresh Fields and Pastures New.

A NEW sphere of utility is, according to the *Pall Mall Gazette*, to be opened up to the motor-car, in South American exploration. A well-known Spanish automobilist is reported to be organising an expedition to survey the northern boundary of Patagonia and Argentina, per automobile as far as possible, starting from Buenos Ayres, and following the Rio Negro to Lake Nuhuel-huapi, thence along the line of the Andes to the volcano of Louquimay, and on to the Chilian port of Valdivia, a total distance of somewhat over a thousand miles. Details as to the nature of the automobiles to be employed, or the extent to which they are expected to prove useful, are lacking, and it might be imagined that a few of the traditional Patagonians would be of service on occasions behind them, if one may judge by the nature of the country, which would be excellent for the testing—perhaps in more ways than one—of military lorries. At any rate, we wish the enterprising Spaniard success in his "thousand miles trial," which few of the drivers in the last one would care to tackle.

MR. MARK FOY, of Sydney, N.S.W., and his 10-h.p. Panhard car created some excitement by driving out to the Melbourne Cup with a number of his friends aboard. The car was driven across from Sydney to Melbourne the week previous to the Cup, and made good progress.

EARL RUSSELL, whose account of an automobile tour in Sussex is concluded in the present issue, made a claim on Wednesday against the Aldershot District Council for damages sustained to his motor-car. His lordship some time ago was driving along the Farnborough Road, which was then under repair, and he alleged that its unsatisfactory condition was the absolute cause of his colliding with a steam roller at work there. The Council considered that they were not to blame, and decided to contest Earl Russell's claim for damages.

ALREADY the Automobile Club's annual exhibition, which will be held at the Agricultural Hall in April next, promises to be a great success, second, in fact, only to the recent exhibition in Paris. More than 200 firms, including the cream of the Continental trade, have already booked space. Amongst the latest additions to the list of exhibitors are the Delahaye Company, the Georges Richard Company, Messrs. Gillet, Forest et Cie., Messrs. De Dietrich et Cie., M. Chaboche, Rochet-Petit, Messrs. Turgan and Foy, Société du Moteur Supra, Madame Longuemare, Messrs. Rupy et Cie., Messrs. Lejeune et Cie., L'Allumeur Electro-Catalytique, Spyker Bros. (of Amsterdam), and the Trompenburg Manufacturing Company, etc.

THE Fournier-Searchmont Automobile Company of Saratoga Springs was incorporated at Albany, N.Y., on December 16th, with a capital of £400,000, to manufacture motor-cars and other vehicles. *Automobile Topics* states that the incorporation of the Fournier-Searchmont Company means the formation of a new automobile manufacturing company in which Mr. Foxhall P. Keene as president, Mr. E. B. Gallagher, of the Searchmont Motor Company of Philadelphia, and M. Henry Fournier as mechanical directors, will be the leading spirits. The company will manufacture vehicles embodying such modifications of the leading French types as M. Fournier's familiarity with the subject indicates as advisable, and is said to start its career with 450 orders on its books.

FOR some time past we have been making a trial of a new lubricating oil for petroleum spirit motors, known as "Filtrate," that is being put on the market by Messrs. Edward Joy and Sons, of Junction Street, Hunslet Lane, Leeds. The oiling of a motor cylinder is, as is well known, one of the most difficult feats of lubrication known, owing, among other things, to the high temperature at which the oil is required to work. We have found "Filtrate" to answer its purpose exceedingly well; its fine viscosity seems to be well retained even in the most extreme heat. It has no tendency to char in the cylinder nor to "gum." The oil has a fine body, and, being filtered, is entirely free from grit.

SIX DAYS IN SUSSEX.

(Concluded from page 793.)

WE had lost the afternoon in Canterbury which we intended to have, but we did our duty by the cathedral next morning, and were conducted over everything till we were thoroughly tired out. We had the accumulators charged at Canterbury, but I do not recommend it, as the extortionate cycle agent wanted 4s., and actually insisted upon 3s. 6d. for the sixpenny-worth of current put into them. I could not get him to take my view that 400 per cent. was a fair profit, even allowing for trade charges. We started in the afternoon along the London Road, with its switchback surface, to Rochester without incident, but not very fast, though fast enough to cover the engineer from head to foot in a thick coating of white dust. The difficulty in arriving at Rochester is to know when you have arrived, and to ascertain

slipping occasionally, which I afterwards discovered to be due to the change speed lever being a little out of place. Soon afterwards it was apparent that there was something wrong with the water circulation, so, being tired and wet, we stopped at Southborough for lunch, and had some of the mud washed off the car. After some time my engineer discovered that the split pin in the centrifugal pump was missing, and it was, therefore, not revolving. As for some reason there is no stop-cock on the water tank, repairing this meant losing all our water. He put a new split pin in, and troubled himself no further about the one that was missing, connected up the pipe, and laboriously filled up the tank with water. It still would not circulate, and on taking the pipe down, it was found choked up with the broken pin. Then at last all was right, and we went on to Tunbridge Wells. Here it took a great many enquiries before we were properly directed to the High Street, and even then we could only raise two gallons of petrol in the whole town. We started off about 4 p.m. to East



OFF FOR A SPIN.

(La France Automobile.

which of the several towns nestling together by the Medway you are actually in at any moment. However, we were soon safely at the Bull, a hostelry as old-fashioned as its name implies, where our bedroom held some articles of Dickens bought from the sale at Gad's Hill. We explored the cathedral—which is not much—that evening, and went on to the castle and gardens, which are beautiful. The view of the Medway, however, which should be very fine, is entirely spoiled by the hideous railway bridge.

The next morning before we were up the sound of torrents of rain made us fear seriously for the day. At ten o'clock it was still raining hard, but we decided to start in spite of it, and crossed the Medway, turned to the left through Snodland, West Malling, and Hadlow to Tonbridge. The roads were not wide, but had good surface, and the motor was going well, although the rain fell incessantly and made it heavy travelling up hills. The car climbed up well out of Tonbridge, though I was troubled by the gear

Grinstead, and had the usual difficulty in finding the road at the beginning. About three miles from Tunbridge Wells there were several branches, and each was duly signposted, but the trouble was that the directions on the signposts were to small unknown places, which did not help one to decide which was the way to East Grinstead. The road was narrow, and would have had a good surface in dry weather, but the rain having abated a little now, it was greasy and dangerous. In the narrowest part we had a new and special trouble with donkeys. One was loose and the other was anchored by about 15 feet of chain to a wooden clog. At first I thought I had safely passed them, but with infernal ingenuity they succeeded in getting ahead of the car again while I was avoiding fouling the anchor chain, which they had already once drawn across and under the car. Having got ahead, they remained there for the best part of two miles, although there was an ample green margin at the side of the road for them to turn

into, and I only shook them off at last by driving them as hard as I could and tooting my horn at them till they were tired out. When we reached East Grinstead, at 5.45 p.m., we were too dispirited to push on to our proper destination at Horsham, so we stayed there for the night. To my agreeable surprise, I managed to get Pratt's motor spirit from Bridgland, an iron-monger in the town. Needless to say, there was nothing to see at East Grinstead, but we had the pleasure of the town band performing outside during our dinner.

Next morning was finer, though lowering, and we started about 9.30. The road to Crawley we found a little tricky, but after that it was easy enough to Horsham. During the heavy rain on the preceding day I had not been troubled with side-slip, but the roads were now very greasy, and my 90 mm. pneumatic tires were slipping badly, and speed had to be kept very low. As it was, I twice doubted whether the car would go round a corner or would prefer to skate sideways into the ditch, and finally on a hill, where, fortunately, the road was broader, she did turn completely round. Had I not had the speed down to about six or eight miles an hour, it might have been a very nasty accident; as it was it was startling. We went through Horsham without stopping, turned up the London road, and took the curious left-hand swing that leads to Billingshurst and Pulborough, the running being good on this part. Although it was early, we decided to lunch and try to get petrol in Pulborough, attracted by a magnificent notice-board about engineers and motor-car manufacturers. The engineer walked the 600 yards to the shop, which he reported to be a small shed, and said that he had seen a woman, whose husband was connected with the business, who told him we could have no petrol, and that they would open on Sunday for no one. The landlord, however, directed us to the house of a partner, whose wife gave us the keys, and so to our great satisfaction we got our two gallons of petrol, even on the Sunday.

At Pulborough we dropped the engineer, and found the roads much better, and the car going well. We ran by rather small roads through pretty country by Petworth, and through Cowdray Park to Midhurst; then along the Chichester Road up Cocking Hill in fine style, and nearly to Havant, where we swung back through Chilgrove, and up Chilgrove Hill to our stables at North Marden. Twenty-six miles non-stop in 1h. 50min., and a very pleasant conclusion to our tour.

I may perhaps be permitted to conclude with a few general observations. First as to the car. Five hours by the roadside and three hours at Southborough in the rain may seem a good deal, but most of the first trouble was due to ignorance on our part, and most of the second to stupidity. At the same time, it is true that the pin of the circulating pump should not break, nor nuts and bolts come out of the gear wheels; still more true is it that it would be well if motor-car builders designed their machinery with some regard to the possibility of getting nuts on and off, and fitted a gearcase whose top could be taken off without first removing the top of the car. What would be thought of a locomotive in which the engine driver could not tighten a loose cross-head without first dismounting his boiler! In designing cars, the motto seems to be, "Inaccessibility, be thou my god!" It is a fine long word, but it has no other merits on the road. A little attention to detail would obviate a great many of the needless hindrances to small repairs. Still, when all is said, this car, in which the gear was loose, the steering loose, and the ignition wires almost bare of cover, took us without overhauling an average of forty miles a day in all kinds of weather, and over all kinds of roads and hills. No horse could do as much.

Next as to manners on the road. We had a funny experience our first day. Running into Worthing, I was approaching very quietly on a broad road behind a phaeton with a pair of horses. I had just cut my engine off in order to glide by silently, when as I drew up alongside, the driver, a young man with too good a conceit of himself, turned round and said, "Where are your manners?" The question seemed to have no relation to anything that was happening, so I supposed he feared that his horses

were frightened, and that the irrelevance of the question was due to nervousness. However, no sooner did I drop back than he at once pulled to the offside of a perfectly empty road and deliberately obstructed my passage. Upon this I informed him that I should summon him if he persisted in this course, and he thereupon gave way. It appeared after all that manners were in question, and my only regret is that I do not know the name of the ill-bred young cub. His was the only instance of discourtesy I met with. Of the frightened horses nearly two out of three were more upset by their driver's nervousness than by their own. It frequently happens that horses will go by quietly enough if you approach and pass them silently while the driver continues steadily on his course. One who, as I do, drives and rides horses as well as drive a motor-car, is generally able to judge of this with certainty, but drivers of horses should remember that when once they hold up their hand they deprive you of all option, and you must stop, whether it is wise or unwise. In one case a horse that would have passed quite quietly was thoroughly alarmed by my being thus compelled to stop when within twenty yards of it. There are some wild brutes that should not be allowed out on the road at all, as they are more dangerous and uncertain than a hundred motor-cars. There can be no doubt that had good roads and motor-cars come first, no horse would ever have been allowed on a main road without a certificate of proper behaviour.

Is it not time the Automobile Club began making some hotel arrangements like the C.T.C.? A uniform charge of 1s. a night for stabling cars is the first arrangement that might reasonably be made. The Royal Hotel Mews at Worthing charged me 2s., which I consider excessive when nothing whatever was done to the car by the ostlers. To some extent owners can improve things now by bargaining beforehand, and insisting on being charged proper prices. I am told that at country inns it is the regular practice to charge a *chauffeur* more than the general public. I endeavoured to get a tariff of £1 for dinner, bed, and breakfast for three of us, one counting at servant's rates, of course. I did not, however, get quite this at fashionable resorts like Worthing and Hastings with a *table d'hôte* dinner, but I obtained reasonable compromises, especially from the Palace Hotel at Hastings. The Dorset Arms at East Grinstead informed me that they never put up outdoor servants; they had a tariff I could look at if I liked; they entertained no bargains and no reductions. We found the Commercial Hotel opposite reasonable and quite sufficient for our needs. Still, all this individual bargaining is a bore, especially at the end of a day, and it would be a great convenience if there could be a hotel indicated in each town to which one could go at once at a fixed tariff. I would suggest, say, 10s. for owner's dinner, bed, and breakfast, and the stabling of the car; 6s. more for wife, and 8s. for each additional person occupying a separate room. If something could be done on these lines before next summer, it would be a distinct boon, and I hope these hints may bear fruit.

RUSSELL.

IN reply to several correspondents, we may mention that the address of M. A. Wydts, the inventor of the Allumeur Electro-Catalytique, illustrated and described in our issue of December 28th, is 87, Avenue Gambetta, Paris (20).

THE Prince of Monaco has just issued a decree considerably affecting motorists on the Riviera. The order enacts, among other details, that the owner of a car shall be furnished with the certificate provided by law for owners of motor-cars in France. Every driver of a motor-car must possess a certificate of efficiency. But a declaration by the authorities of his own country and place of residence will be accepted as valid. The maximum speed allowed is put at 6½ miles an hour, to be slackened to walking-pace when descending a hill. All motor-car racing is forbidden in the principality. In the old town of Monaco motor-cars are entirely tabooed. Exception will, however, be made on fete days, when they will be allowed on the square in front of the palace. Every motor driver is to stop at once when so requested by the police.

THE DECAUVILLE 10 H.P. CAR.

FOR the 1902 season the Decauville Company will make a specialty of 10 h.p. cars, of which two illustrations are given herewith. It will come under the light car category, inasmuch as the weight comes out at between 11 and 12 cwt. The engine comprises two vertical cylinders 110 mm. diameter by

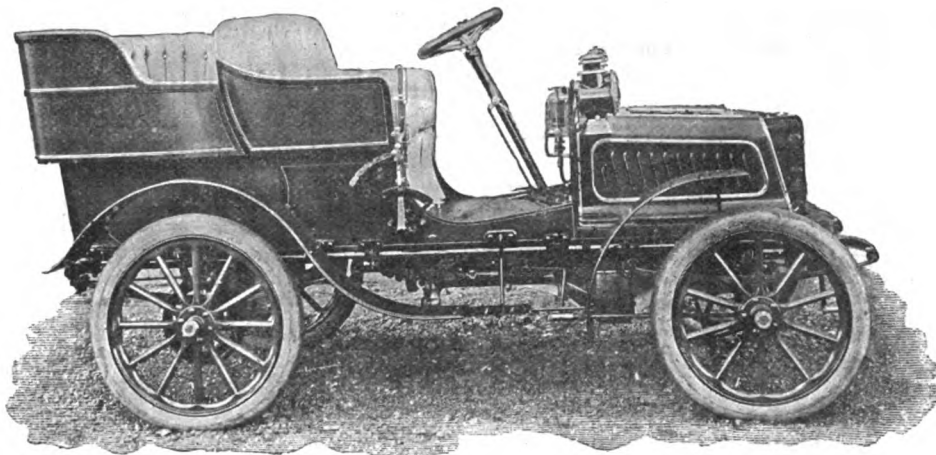


FIG. 1.—THE DECAUVILLE 10 H.P. TONNEAU.

110 mm. stroke, and at a speed of 1,000 revolutions per minute develops 10 h.p. A governor is provided, as also an accelerator, while the ignition is on the magneto-electric system. Particular attention has been devoted to the question of lubricating the various moving parts. Four forward speeds—from twelve to fifty-five kilometres per hour with the engine running at 1,000 revolutions—and a reverse motion are provided. The change-speed gear box is combined with the crank case, and an important feature is the fact that, when on the high-speed gear, the power of the engine is transmitted direct without the intervention of any spur wheels. From the gear box a universally-jointed shaft and bevel gearing convey the power to the rear live axle. The lubrication of the five principal bearings of the crank shaft and live axle is accomplished by means of rings similar to those in use on large dynamos, and the cranks themselves are centrifugally lubricated. The rear part of the *tonneau* is made detachable, so that the car can quickly be converted into a double phaeton or a simple two-seated vehicle, as shown in Fig. 2. We may add that the Motor-Car Co., Ltd., are the agents for the Decauville cars in this country.

THE *Golden Penny* has lately started a weekly column of motor-car notes and news.

AN electric motor is to furnish the propelling power of the fishing boat *Pioneer*, which has just been built at Lowestoft.

At the West Hartlepool Police Court a man charged with working a pony in an unfit state has expressed his willingness to buy a motor-car in place of the animal.

A MAN may learn to drive a motor-car in two days, but much experience may be necessary to enable him to re-start it when it has stopped without apparent cause.

THE New York Tire Company are about to vacate the Thavies Inn offices for larger premises on Snow Hill, E.C., where it is proposed to hold a large stock and to put down a vulcanising plant.

ACCORDING to an imaginative American reporter, motor quadrilles are the latest thing in fashionable dances, each lady and gentleman going through the figures in a smart little motor-car. Why not dancing in dirigible balloons, or waltzing in submarine boats?

CONTINENTAL NOTES.

BY "AUTOMAN."

THE self-propelled vehicle is really ubiquitous. It pushes itself into almost every form of modern life. It now appears regularly in literature, and has captured the novelist, the playwright, and the caricaturist. The theatre, music-hall, and circus have long since made use of it, and now Barnum and Bailey's have two record-men engaged to draw the Parisian public. Rigal rushes through the ring with all the lights out and the limelight playing on him, and Osmont has just signed a contract to climb a staircase with a 16 per cent. gradient on a motor-tricycle, and to come down again. The stairway is about fifty yards long and two yards wide, and will not have banisters at the sides or any protection whatever. To climb the stairway the front wheel will be less in diameter than the hind wheels by more than 12 in., but once at the top he will change his small front wheel for one of a much larger diameter before he comes down again. Twenty-five miles an hour up and down a staircase!

THE advent of the Yacht Club and the change in the rules of the A.C.F. as regards gambling has quite changed the aspect of affairs at the Place de la Concorde, as far as the first floor is concerned, and there an animated scene daily replaces the solemn silence of a few weeks ago, when the white-stockinged flunkeys were hardly able to extinguish a yawn as they opened the doors for the few automobilists that ventured to pass the luncheon hour in the Club. The first floor is now exclusively devoted to members, and friends are only allowed on the third floor, and only twice in one year can a member invite the same person. Ladies are no longer admitted except on gala nights, and even then a special invitation is required; in point of fact, steps are being taken to make the Club more and more exclusive.

ON the other hand, the A.C.F. are about to create a new and thoroughly democratic organisation which is to be called the "Société d'Encouragement au Sport Automobile." The subscription will be only 20 francs per annum, the object being to protect mutual interests. Ladies duly presented will also

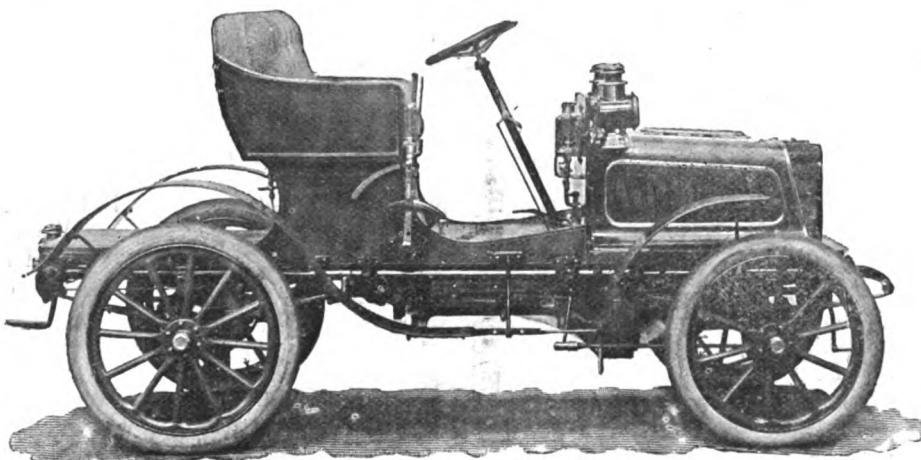


FIG. 2.—THE DECAUVILLE 10 H.P. TWO-SEATED CAR.

be eligible as members, and a journal will be published by the organisation, to which all members will have the right to contribute.

THE A.C. of Nice is determined to organise a road race, and if the French Government persists in refusing to allow the Nice-Salon race, it is quite on the *tapis* that Ventimille to Turin and back will replace it. As everyone familiar with

the Riviera knows, Ventimille is the frontier town on the Italian Riviera. The road to Turin lies along the valley of Roya, where it recrosses the French frontier for ten miles and then returns to Italian territory. The road is narrow, with very many turns and twists, and rises nearly 3,000 feet in 35 miles over the Col di Tende, and then down again by Limone and Coni, and thence is level right to Turin. The road is very bad, and covered with deep ruts. The total distance from Ventimille to Turin is 105 miles, and will be severe on tires and springs. There is also a project on foot for a race from Ventimille to Abbazia on the Adriatic and back, but this is a long way—nearly 500 miles—and would require a great deal of organising. Abbazia is, of course, suggested because, like Nice, it is also a winter resort.

THERE has been a question between the Austrian Club and the A.C.F. about the order of starting for the Paris-Vienna race, the Austrian Club objecting, quite rightly, to the first numbers being booked by French makers. The question has been satisfactorily settled in the following manner: the two Clubs will draw lots for the places, and then distribute the same amongst their members.

ROAD racing brings me back once more to a subject which, as every reader of the *Journal* knows, deeply interests me, and that is how to find a means of bringing our English manufacturers to realise the vital importance of coming into line with their French competitors, with the object of bringing the trade to our workshops. I am very glad to see that the Wolseley Company have come up to scratch. There are many manufacturers, however, who have not the financial resources of the Wolseley Company, and who need encouragement in this direction, and who would be prepared to enter the lists if success would bring its reward, and an organised prize fund would put an end to their hesitation.

TALKING of the Wolseley Company, it is with great satisfaction that I chronicle that it is entirely owing to their enterprise that there is to be a Gordon-Bennett Cup race this year. The time for challenging the A.C.F., who hold the Cup, expired at midnight on the last day of 1901, and until the very last day there was no challenger. In Germany the Club is at outs with the makers of the Mercedes, and the difficulties have not yet been arranged and have prevented that firm from competing. Belgium, too, has some dispute on hand, and Switzerland could not compete owing to the lack of Swiss-made tires. At the last moment England, through the A.C.G.B. and I., sent a telegram to fling down the gauntlet, and so it is that, thanks to the Wolseley Company, there will be a race for the Cup. Curiously enough, the French press seem to think the challenge must come from the Napier car, and suppose that Napier must have greatly reduced the weight to come under the ton limit. The probable defenders will be Girardot, Fournier, and René de Knyff.

AN amusing story comes from Paris. A certain German pneumatic tire manufacturer gives away every New Year's Day pocket books to his agents and customers. The word "agent" in the French language means either *policeman* or *agent* in the English sense of the word. The tire manufacturer gave notice by means of the Press, that all the *agents* in Paris might call at their offices and would receive each a pocket book. What was their surprise to receive on the following day the visit of numbers of policemen in search of pocket books! Needless to say, they were not allowed to go away empty handed, but at the same time with injunctions not to persecute any automobilist who happened to be running on the firm's pneumatic tires.

A LADY who died recently bequeathed a sum of £80,000 to the French Society for the Prevention of Cruelty to Animals, on the understanding that, among other measures, arrangements should be made to provide motor-vans for the removal of horses

disabled by accidents and having fallen down in the streets of Paris. Acting on the lady's recommendation, the society has determined to devote an annual sum of £800 to this special purpose. The question has been taken up by Baron van Zuylen, who is a member of the committee of the Society for the Prevention of Cruelty to Animals, as well as chairman of the French Automobile Club. He invites tenders from all automobile makers for the construction of a motor-van specially adapted to the purpose named.

WINTER CLOTHING FOR MOTORISTS.

MESSRS. HOLDING & SON, of Maddox Street, W., are widely known as sporting and military tailors, and particularly as makers of motoring clothes, of which they have a great many specialities that we have no hesitation in describing as well-thought-out inventions. The other day we spent a half-hour inspecting some of Messrs. Holding's latest productions in the way of motor clothing for the winter.

We first inspected a special registered coat known as the "Ayrshire." When a man stands up in this coat it does not spread out round the bottom like a Russian peasant's sack, as many big coats do; and when the motorist sits down on his car it sets as freely on the lap as a lady's skirt, yet there is no strain on the knees, and there is full freedom for the feet to move underneath. To explain the coat still further, there is no opening anywhere in the bottom of it, and there is no material standing out in an unsightly way. The coat is made of treble Shetland, Mr. Holding finding that a coat made of this cloth sets best round the legs. The whole of the body is protected by a soft, comfortable leather lining, ventilated in certain parts.

We next turned our eyes on a similar type of coat, but made of "Auto Cloth." This coat was lined with thin soft kid, absolutely wind-resisting, and forming an exceedingly warm and comfortable protector for motorists. The "Kangaroo" leather vest with sleeves was next brought under our notice. Mr. Holding explained that this waistcoat is constructed of one part cloth, one part leather, and one part chamois leather, etc., so that it will suffice, except in really cold weather, for the adequate protection of all vital parts. We next came to a special cape, so constructed as to give the user absolute protection from the wind. It is made of waterproof melton, and owing to its peculiar construction it is held in position, allowing free use for the hands for the lever, steering wheel, etc. It cannot be blown up by wind, and it has no opening down the front.

One of Mr. Holding's latest productions is a special apron for motoring. It is shaped like a coat, and will fit a tall or short man; it has no opening to let in the wet, practically forms a pair of trousers, as well as an apron, and almost a coat. These are being made in leather, but at present are chiefly turned out in box cloth, well waterproofed.

We could go on describing many other special garments designed for motoring ladies as well as gentlemen, but space forbids. Suffice it to say that Messrs. Holding appear to be making a special study of the subject, and, what is more, to be receiving the patronage of motorists.

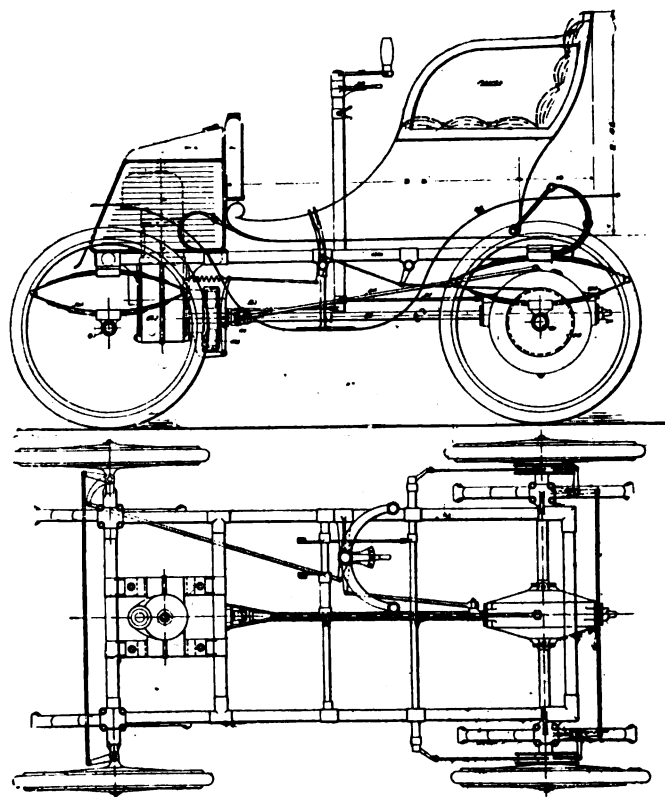
THE Reading Steam Car Company has made a contribution of £5 5s., and the Motor Construction Company of Nottingham of £1 1s., towards the funds of the Motor Union.

MR. J. A. KUNER, of 10, William's Walk, Colchester, informs us that he has recently laid down special plant for the purpose of charging the batteries of electric cars and the ignition accumulators of petrol cars.

MEMBERS of the Motor Union who are not members of the Automobile Club or of its affiliated clubs are reminded that they should at once send their subscription for the year 1902 to the Secretary. Until this is paid they are not entitled to claim the advantages of the Union.

THE RIDLEY VOITURETTE.

OUR illustrations (Figs. 1 and 2) show respectively a plan and elevation of a voiturette recently built by Mr. John Ridley, of 18, Ellys Road, Coventry. The frame is of tubular construction, in the fore part of which, under a bonnet, is a $3\frac{1}{2}$ h.p. De Dion water-cooled motor. The water circulation is maintained on the thermo-syphon system, no pump being used.



FIGS. 1 AND 2.—ELEVATION AND PLAN OF RIDLEY CAR.

Two speeds are provided, the power of the engine being conveyed through a universally-jointed longitudinal shaft and bevel gearing to the rear axle. The novelty of the design lies in the change-speed gear, which is combined with the bevel gear drive. To begin with, there is no balance or differential gear in the ordinary sense of the word, the rear road wheels being fitted to the single piece axle 8 (Fig. 3) by free-wheel clutches, so that the outer wheel can overrun when turning corners. It will be observed that the longitudinal

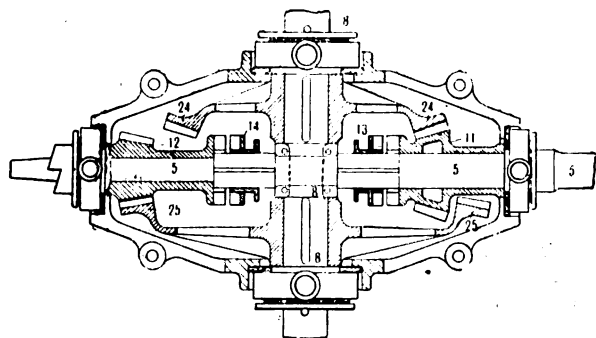


FIG. 3.—HORIZONTAL SECTION THROUGH GEAR BOX.

shaft 5 does not terminate at the bevel pinion, but is extended, and passes under the axle 8, thus avoiding the necessity for cutting either of them. Motion is transmitted from one shaft to the other by a form of bevel gearing consisting of pinions 11, 12 on the shaft 5, meshing with wheels 24, 25 on the axle 8. As the pinions and wheels are in different planes, the teeth of the latter have to be cut on the skew to gear properly. The pinions are

always in mesh with their respective wheels, but are only fixed to the shaft 5 one at a time by means of the sliding clutch 13, 14,

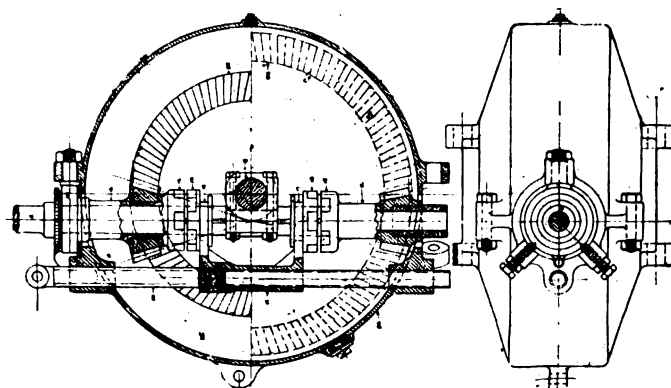


FIG. 4.—VERTICAL SECTION AND END VIEW OF GEAR BOX.

the parts of which are coupled so that the engagement of one pinion is preceded by the disengagement of the other. Thus when the clutch 13 is in gear with the pinion 11, the power is transmitted through the pair of bevel pinions 11 and 24, and when clutch 14 is engaged, through 12 and 25. The whole arrangement is boxed in by a casing provided with ball bearings for the shaft and axle. The extremity of the longitudinal shaft 5 is adapted to receive a starting handle. One advantage claimed for the skew bevel gear over ordinary bevel gear transmission is that one rigid shaft only is required between the rear axle and the motor-clutch. In ordinary bevel gears under similar circumstances, the shaft needs to be broken up and to have two flexible couplings. The Ridley gear needs but one, which is situated immediately behind the clutch at the front end. The simplicity of the gear also lies in the fact that it not only acts as a transmission gear to the rear axle, but as a change-speed gear at the same time, without taking up any more space in the gear box. The road wheels are fitted with solid rubber tires; four elliptical springs carry the frame, motor, etc., while the body is suspended on the frame by C springs. Complete, the car, which was built to demonstrate the advantage of the new gear, weighs about 5 cwt.

THE Gloucester County Council has just addressed a memorial to the Local Government Board, in favour of the numbering of motor-cars, and of certificates of efficiency for drivers of the same.

SIR LINDSAY WOOD is one of the latest recruits to automobilism, and is frequently to be seen with various members of his family driving a large motor-car in the neighbourhood of Chester-le-Street.

ON December 11th there came into force in Italy the new motor law, the most important clauses of which provide that speed must not, except in the case of duly-authorized races, exceed 25 kilometres ($15\frac{1}{2}$ miles) an hour, and that drivers must obtain certificates of efficiency.

MOTOR-CARS played an important part in conveying New Year good wishes and presents from Parisian to Parisian. In paying the five minutes' call on all one's friends and acquaintances which French etiquette demands they were indispensable, and as a means of conveying the numerous packets and parcels which change hands unbeatable.

WHILST Dr. Simmons, of Bishopstoke, was proceeding to Fair Oak on his motor-car a horse attached to a cart shied at the machine, notwithstanding the fact that it had stopped. The man in charge vainly tried to pull the animal up, running at its head, but he was knocked down and severely injured. Continuing its career, the horse collided with a laden coal lorry at Middle Hill Street, knocking the driver down (he being on foot at the horse's head) and breaking his leg below the knee. The two carts jammed, and this brought the runaway to a standstill. Dr. Simmons attended to the two victims.

FLOTSAM AND JETSAM.

BY "FLANEUR."

THE way cars are getting about is astonishing even to those who may account themselves *au courant* with the movement. That one should meet them on the road in great numbers at the week-ends is natural enough, but the real test of the growth of automobilism is the extent to which one finds one's neighbours following the noble pastime. For example, I lately changed my habitat, and was curious to determine how many people round about me in the new suburb might happen to drive cars. The first evidence I encountered was the frequent passing of a local doctor on a Benz. Then I discovered that at one end of the road in which I live was a fellow automobilist whom I had met on Club runs, and he informed me that just round the next corner was another *chauffeur* whose car I had also seen in public.

BARELY had I made the acquaintance of these two owners—and right good fellows they proved to be—ere I found that at the other end of my road was the owner of a car identical with my own, and by a singular coincidence I had found myself immediately behind him on the Southsea run, until, less fortunate than I, he had to stop to mend a puncture; at that time, however, the fact of our neighbourly propinquity was unknown to either of us. Not a hundred yards from him is another owner of a similar car, and, to add to this tale of coincidences, I may state that just as I breasted the summit of a steep hill near by, only a day or two ago, yet another twin car to my own topped the rise from the other side, and we met on the crest like two Dromios. I don't know for a fact that the owner of the other car was a resident, but it is at least possible. Then, too, I have found three more car-owners within a third of a mile of my house, all in one direction, and, in fact, by merely taking a half circle of that radius I could name a dozen automobilists at least, and there are probably more.

If there is one topic more than another as to which differences of opinion prevail it is that of wood v. wire wheels for motor-vehicles. We are all agreed, I take it, that the former are easier to clean; on the question of appearance it is vain to dogmatise, for "beauty is in the eye of the beholder," and it becomes a case of *chacun à son goût*. But the main issue is the relative strength of wood and wire spokes respectively, and I for one am on the side of the wires at all times for voituresses and light cars, while there are those who defend their use even for big cars. It is not, however, to air my individual opinion that I raise this topic, but to record an interesting juxtaposition of experiences which has lately come under my notice.

THE owner of one of the new 10 h.p. Lanchester cars, for example, had a disquieting adventure the other day, the circumstances being as follows. Driving along a country road he came suddenly upon a squad of gipsy ponies running loosely in the wake of a caravan. He pulled up short, and then, the ponies having divided and left an opening, he put his accelerator down and started forward. One of the untethered quadrupeds, however, selected the same moment for swinging across the course, and the car promptly cannoned off the animal's hind quarters. The car took the steep bank which bordered the road, and as the Lanchester is provided with an unusual amount of lateral movement, and is very low and broad as well, it went a long way up the bank before threatening to overtop its centre of gravity. But even its limit was just about reached, when an extraordinary thing happened. To use the driver's own words, the car seemed poised in mid-air, and just upon the point of toppling over, when the wire wheels sprung back, the body righted itself, and in another second or two the driver found himself down on the road again, and not underneath the car as he had expected, but driving *au naturel* instead.

As it happens, he is also the owner of another type of 10 h.p. car which is fitted with artillery wheels, and declares that had he been driving the last-named vehicle instead of the one

with wire wheels he would probably have been killed. It is open for a defender of the wooden wheel, no doubt, to say that the fact that the wire wheels bent outwardly before springing back was inferential evidence that they were weaker than artillery wheels, but I think the owner of the two cars would contend that the wire wheels were as strong as the others where-ever strength was required, but also possessed the quality of suppleness, which enabled them to recover themselves in the manner described.

AND now for the other case, which is that of Mr. and Miss Butler, the mishap to whose 5 h.p. Renault was described in the *Motor-Car Journal* last week. The wheels were smashed by the catastrophe, and Mr. Butler has expressed the opinion to me that wooden wheels would have been better in the circumstances. With all respect to his opinion I am not converted, for when one notes the immense vertical strength of the tangent wheel as seen in the common bicycle, with spokes as fine almost as piano wire, and when one considers also the lateral strength of the wire wheel, owing to the fact that the spokes diverge from the rim to the ends of the hub, it is difficult to account for the collapse of any wire wheel except on the theory that the builder has taken too great an advantage of its superiority of construction, and simply not put a sufficiency of metal into his spokes and rims.

A SMASH-UP, by the way, apart from the possible consequences to the occupants of the car, may look in effect a much more serious matter than it proves in fact. Mr. Butler tells me, for instance, that though the Renault seemed a wreck after his spill on the Versailles hill, a ten pound note would cover the damage. He also informs me that the company with which the car was insured raised no objections on the score of the accident having taken place abroad, and met the claim with agreeable promptitude.

It takes a good deal to hinder a man from following a pastime of the value of which he has become objectively convinced. I met this week a gentleman who labours under the serious disadvantage of possessing only one arm, and that one the left, which with many people is not only weaker than the right, but, where motoring is concerned, is coupled with the awkward circumstance that cars are usually built with the steering wheel and change-speed levers on the right. Graduating, however, on a small Peugeot the *chauffeur* in question has now gone the length of acquiring a 7 h.p. Panhard, a car which is not altogether a crawling caterpillar in the matter of speed.

AT first sight, no doubt, the experiment is suggestive of risk, but it may be added that the car was acquired directly from the Panhard et Levassor works, and that the owner used it in France for a time before bringing it home to England. Naturally he had to obtain the *permis de circulation* from the French authorities, and those who know the stringency of the official examination before a driving certificate is granted will not need to be assured that the car was well handled, notwithstanding the physical limitations of its owner. To some extent the car was specially built. The steering-wheel standard and levers are placed on the left-hand side, instead of the right, and a knee bracket is fixed midway down the standard, by which control can be maintained over the steering even when the side levers have to be used. The owner having been accustomed to direct steering, moreover, found the irreversible worm steering in his new car to require more leverage than he had anticipated, so fitted a short arm on to the wheel, but is curtailing it by degrees as he grows more accustomed to the car. He has just driven the car to town from Paris, and with complete success, and one must congratulate him on his resourcefulness and pluck.

UNITED MOTOR INDUSTRIES, LIMITED, of 42, Great Castle Street, W., have sent us an advance copy of a new price-list of lifting jacks for motor-cars and cycles, of which there are many types and sizes. Voltmetres and amperemetres, or the two combined, also figure in the list.

HERE AND THERE.



TUESDAY next, the 14th inst., is the date fixed for the usual quarterly 100-miles non-stop trial of the Automobile Club.

MESSRS. FRISWELL, LIMITED, have this week received an order for four Peugeots to be delivered in South Africa. They will be shipped next week.

EARL RUSSELL points out that the hill on the road from South Harting to Northmarden, about four miles from Petersfield, is very dangerous.

WHILST being driven down a hill at Barry, last Monday, a motor-car belonging to Mr. C. H. Bailey skidded and overturned. The driver, a youth named Davies, sustained injuries to his head which necessitated his removal to the hospital.

REIGATE HILL has for some time past been in an exceedingly slippery state, and in descending the hill a prominent member of the Automobile Club last week had a bad "side slip," resulting in the breaking of the axle of his new French voiturette.

THE Portsmouth Motor-Car Company, which was formed some few months ago, is now ready to commence operations, the first car having been delivered on the last day of the old year. It is in the form of a roomy elongated bus, capable of carrying about sixteen passengers. The car will in a few days be placed on the route between Fratton Road and the Dock-yard.

MR. W. S. GLASIER, of 5, Clarence Road, Southsea, East, informs us that he has storage accommodation, with pit, for four or five large cars, motor trikes, quads, etc. Petrol may also be obtained and batteries charged at any time, Sundays included.

THE English Motor Club had a terribly rough run to Peterborough on Saturday last, what with the wind, rain, and bad roads, particularly north of Hitchin. Nevertheless, all the starters save one reached the destination and dined at the Grand. The Nottingham branch of the Automobile Club should have met the party at Peterborough, but not a single representative put in an appearance.

THIRTY-SEVEN designs were submitted in competition for the prize of £5 offered by the Automobile Club for the best plaque for attachment to hotels and premises of repairers appointed by the Club. The Standing Committee recommended the selection of a design in which the map of the United Kingdom was introduced, subject to certain modifications, but eventually it was decided to keep the competition open until the 9th inst., before making a definite decision.

A USEFUL little accessory, in the shape of a spout for petroleum spirit cans to prevent spilling and consequent annoyance when filling the spirit tank from the ordinary two-gallon tins, has lately been put on the market by Messrs. Salsbury and Son. It consists of a curved pipe which screws into the aperture of the cans. The connection is properly curved so as to reach the aperture in the tank conveniently; its mouth has a gauze screen, and there is an air inlet which facilitates the flow of the spirit.

THE Glasgow Trials have had a further reaching effect than one would have supposed. The old theory of the lay mind that a motor-car is only useful on a well-laid and level road has been dispelled, and as a result the Colonies are now taking freely to the new order of locomotion. This is notoriously so at

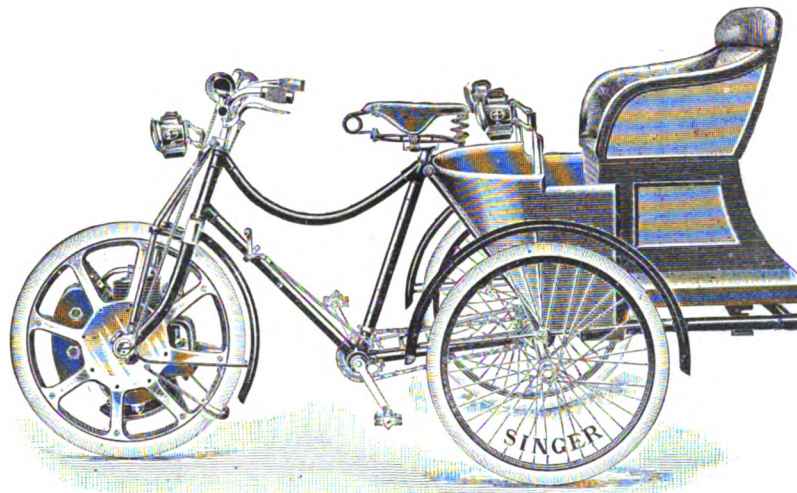
Johannesburg, from which city the Hozier Engineering Company are, as a reward for the excellent work done at the trials, booking a large number of orders for Argyll cars.

THE Motor Power Company, Limited, have sent us a very large illustration of the 1902 model of the 9-h.p. Napier car. The point of interest in the vehicle is that not only are the motor, wheels, gear, etc., all made in England, but the complete carriage body is also made in this country. The Motor Power Company claim that they are the first to fit a motor-car with a body entirely of aluminium, no wood being used in the construction whatever.

A LETTER was submitted to the last meeting of the Committee of the Motor Union from Mr. J. E. Waller with reference to damage caused to his car by the swerving of an unattended horse. It was decided to vote a sum of ten guineas towards the prosecution of the owner of the unattended horse, as persons living in the locality have stated that the animal was dangerous and should not be left unattended.

At the last meeting of the Standing Committee of the Automobile Club a letter was submitted suggesting that the anniversary run should take place in August, that being the month during which the Locomotives on Highways Act of 1896 was passed. The Standing Committee recommended that no action should be taken in the matter at present, as it was hoped that before long the Club would be in a position to abandon the celebration of the Light Locomotives Act of 1896, and would instead celebrate the passing of a new Act.

WE are this week able to illustrate one of the several recent designs of vehicles introduced by the Singer Cycle Company, Limited, of Coventry. This is the tri-voiturette, of which a Singer motor-tricycle forms the basis. The Singer motor wheel was introduced in the autumn of 1899; since then it has been improved and perfected in several points of detail, one of the principal alterations being the addition of a simple and efficient mixture regulator, controlled by a small lever fitted to the



THE SINGER TRI-VOITURETTE.

handle-bar of the tricycle. The 2 h.p. engine, carburettor, gearing, magneto, and in fact everything additional to an ordinary cycle are contained in the front wheel of the tricycle. The additional seat is carried on a tubular extension of the tricycle frame; to give easy access, the seat is pivoted at one side, so that it can be swung round. This seat can also be reversed so that the passenger can sit with his back to the driver if desired. The weight of the vehicle illustrated comes out at about 200 lbs.

A SERIES of papers dealing with the principles and the chief details of construction of modern self-propelled road vehicles, by Mr. T. H. Hawley, with an appendix by Mr. F. Hall Bramley, has been issued in book form under the title, "Motors in Principle and Practice." The construction and working of internal combustion engines, and their accessory mechanism as applied to the propulsion of motor-cycles and light vehicles, are dealt with comprehensively, numerous illustrations being given. The purely theoretical aspect of the question is left alone, the work dealing with the subject matter from the practical standpoint. Everything connected with explosive engines, ignition, and the gearing used in the transmission of power is fully dealt with, and a brief outline of steam and electric systems is also given. The book should be found useful by cycle makers and repairers, for whom it is principally intended. The publishers are the Cycle Trade Publishing Company, Ltd., Wilson Street, Finsbury, E.C.

MR. P. BLAKEMORE, of Jordan Well, Coventry, is making a speciality of mudguards and light metal belt pulleys for motor-bicycles.

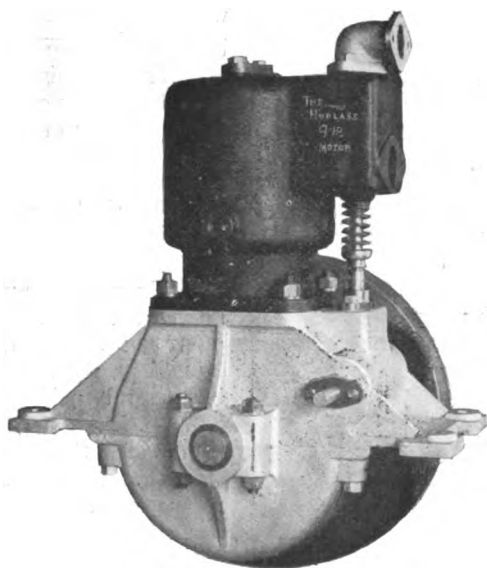
WARNING is given that the Barnsley Bridge over the Black Cart is barred to everything in the guise of a locomotive. From the wording of the order it would seem that motor-cars are included amongst the prohibited vehicles.

A CORONER's jury found a verdict of "Accidental death" in the case of William Ladds, killed while driving a motor-wagon down Rockingham Hill last week, as reported in our last issue. The jury returned their fees to the unfortunate widow, who is left with a large family of small children.

A PLAN to form a co-operative association of automobilists to establish petrol and lubricating oil stations along all the main highways of Italy is under consideration. It is thought that in this way it will be possible to avoid the present necessity of carrying large quantities of fuel and oil when on a long trip.

THE annual general meeting of the United Motor Industries, Limited, was held at the registered offices of the company on the 31st ult. The Chairman had a very satisfactory report to present, business having increased with marked rapidity, and shown a substantial profit. The retiring director by rotation was Mr. Charles Jarrott, who was unanimously re-elected.

MR. F. W. HUDLASS, of the Phoenix Motor Works, Southport, has just brought out a new 9 h.p. petrol motor, the diameter of



the cylinder being 156 millimetres by 156 millimetres stroke. The cylinder, together with its water jacket, is cast in one piece, so that there is no water joint. The jacket not only extends around the cylinder, but also round the valve chambers and the sparking plug. The inlet and exhaust valves are of large diameter, while the cam shaft and cams are all enclosed. The fly wheel is 18 inches diameter, and is so turned as to form part of the friction clutch: its weight is 100 lbs. The bearings are of ample size, and special attention has been paid to the question of lubricating the same.

ON Thursday last week the Duke of Sutherland drove to the Town Council meeting at Longton in his motor-car, and at the close of the sitting took the ex-Mayor, Alderman A. Edwards, for a drive. The Duke has become quite an enthusiastic motorist, and frequently uses his car to attend the meets of the North Staffordshire Hunt, of which he is the Master.

CYCLES, says *Vanity Fair*, are entirely discredited from the investment point of view, and it is a pity that the market in cycle and motor-car shares should be practically one and the same thing. There is no more reason why motor-car shares should be mixed up with cycles than with carriages or steam-engines.

THE Second House Dinner of the Winter Season will take place at the Automobile Club on Wednesday, the 22nd inst., at 7.30 p.m. After the House Dinner a paper will be read on "Proposed Amendments in the Law affecting Motor-Vehicles," by Mr. Roger W. Wallace, K.C. (Chairman of the Club). The reading of the paper will be followed by a discussion. After the House Dinner on March 12th Professor Hele-Shaw will read a paper on "Roller Bearings."

AT a meeting of the Scarborough Rural District Council last week, Mr. C. Leadley drew attention to the reckless manner in which motor-car drivers behave on country roads. Sir Edward Cayley pointed out that the County Council had already issued regulations making it imperative upon drivers of motor-cars to pull up whenever signals were shown by drivers of restless animals. He moved that a letter be sent to the police authorities drawing their attention to the accidents which had happened through want of care on the part of the drivers of motor-cars. This was agreed to, and it was also decided to write to the Local Government Board advocating the registration and numbering of motor-cars.

WE hear that the Metropolitan District Association of the Cyclists' Touring Club is organising a motor-cyclists' section. The first meeting of the section will be held at the rooms of the Society of Arts, John Street, Adelphi, W.C., on Tuesday, February 11th, at 8 p.m. It is hoped that by frequently meeting together to communicate experiences, by arranging club runs, and by other means, the section will be able to promote the sport of motor-cycling and assist in the evolution of a satisfactory machine. Arrangements have been made by which a number of motor-bicycles will be on view, and the chairman, Mr. W. Rees Jeffreys, would be glad to hear from any maker who would care to include his machine among the number.

THE other day at the depôt of the Auto-Carriage Company, Limited, Great Portland Street, W., we had an opportunity of inspecting one of the latest 12 h.p. Bardon cars. The vehicle is fitted with a two-cylinder horizontal engine, having four pistons, a noticeable feature being that the two inlet valves, two exhaust valves, and the sparking plugs are all fitted on the top so as to be readily accessible. Another novel point is in connection with the ignition lever, which is fitted in the dash-board in front of the driver. This is so arranged, that if it is not in the right position, it is impossible to turn the starting handle, so that there is no chance of the driver having a nasty knock by reason of back firing. The car is provided with four speeds forward, and reverse motion, all controlled by a single side lever. The body is a roomy tonneau, and the vehicle altogether is one of the finest we have seen turned out from the Bardon works.

THE Twentieth Century Travel Company, of 72, Comeragh Road, London, W., send us an illustration and particulars of their new "Lococar" motor-carriages. The power is supplied by internal-combustion engines, multi-cylindrical, of 24 h.p. and upwards, with water-cooled cylinders, placed forward. Pump circulation is employed, and radiators of large cooling surface are fixed in front of the motor cover. The ignition is, of course, electrical, while the lubrication is automatically maintained. The patent transmission provides four or more forward and reverse speeds, and obviates the use of chains, which, however, can be fitted if desired. The girder frame is built up of channel steel, with an extra long wheel base and wide track. To this are fastened, at each end, railway-pattern laminated steel springs. Petrol and water reservoirs of large capacity are fitted in readiness for long-distance travelling, which the "Lococar" carriages are primarily designed for. The design of the body is far removed from the ordinary type, in that it resembles the "cab" of a locomotive with a saloon attached. The carriage-work is composed of wood and aluminium, and the saloon-top can be removed quite easily in a few minutes when desired. Steering is controlled by an inclined hand-wheel, and all levers are ranged conveniently near the driver, who has an uninterrupted view.

CORRESPONDENCE.

RENEWING SPEED GEAR WHEELS.

To THE EDITOR OF *The Motor-Car Journal*.

SIR,—In your issue of last week I notice, under "Here and There," you illustrate and describe the system of Mr. Morriss, of King's Lynn, by which the third speed wheel can be renewed without throwing the whole sleeve away on the scrap heap. I take the liberty of pointing out that I was the first to do this, only not in the manner that Mr. Morriss does, as I do not split the wheel in two pieces, but maintain one solid ring. A similar device was afterwards brought out by Mr. Gilbert, of Lincoln. I wish also to mention that I have another arrangement by which all the gear wheels can be renewed from time to time when they are worn out. Splitting the gear wheels as Mr. Morriss does throws a strain on two bolts instead of four at once. The joint has a tendency to open and throw the gear wheel at a pitch.—Yours faithfully, CHAS. T. CROWDEN.

ALL-WEATHER CARS.

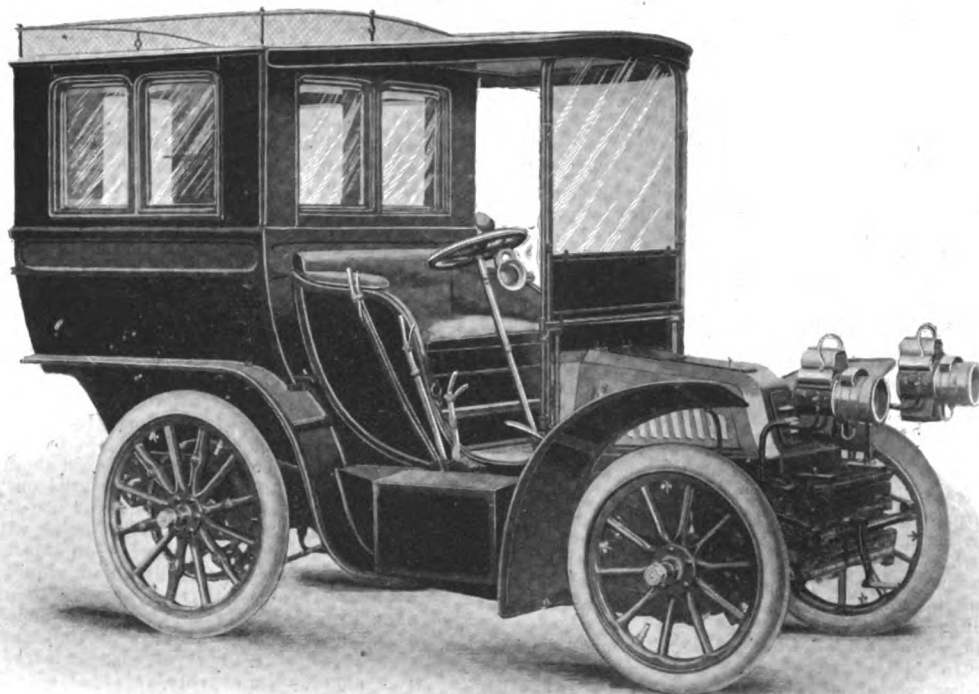
To THE EDITOR OF *The Motor-Car Journal*.

SIR,—In a recent issue of the *Journal*, under "Comments," I notice you make a point of "all-weather" cars; saying—such a car has yet to be evolved. I beg to submit to your notice the enclosed illustra-

electrician, or someone who understands them, and who will tell him positively that his cells are charged. If they have had fair use they are not likely to be worn out; an internal fault, however, will be indicated by their inability to retain a charge. When fully charged each cell should show not less than 2.2 volts; that is, 4.4 volts for the pair. The coil is not likely to be wrong, but it is quite probable the trembler requires adjusting, or there may be a loose connection somewhere. The insulation of high-tension wires or sparking plug may have broken down. The sparking distance between the points and a plug may be too great or too small. If after verifying these points "Puzzled" still has trouble, he had better take the car to an expert, who would soon enlighten him as to the cause or causes of his difficulties. He would then be better able to decide whether or not he has been deceived as to the condition of the car, and take steps accordingly.—Yours truly, ALBERT E. OAKLEY.

To THE EDITOR OF *The Motor-Car Journal*.

SIR,—In reply to "Puzzled," I have been troubled in the same manner. For the first two or three months my primary battery charged the accumulators fairly well, but after that it would only charge them enough for a few hours' run. The accumulators are not at fault, as they act well when charged from a dynamo. I presume that "Puzzled" has put in fresh sal ammoniac solution, and scraped the zincs of his battery. I did, but obtained no improvement, so have sent the inner cells to the makers, Messrs. Peto and Radford, to test, and say whether they are at fault. From



ALL-WEATHER CARS—THE 10 H.P. MORS.

tion, which shows exactly such a car; it fulfils all you ask for, and has even other advantages, such as electric ceiling light inside, luggage rail round top, capacious locker under seats, in which to stow such unsightly spare accessories as air tubes, etc. It has all the advantages of the substantial family 'bus coupled with the speed and reliability of a high-class motor-vehicle. The 'bus top is removable by simply taking out four set screws, the wind screen to driver's seat also lifting out, when you have a very stylish wagonette.

The car shown has been some hundreds of miles in driving rain, at all possible hours of day and night, carrying ladies to parties, balls, etc., which you will admit is a most exacting duty for a motor-car, a duty undreamt of twelve months ago. The Chassis is a 10 h.p. Mors, by the Roadway Autocar Company, and the body is by Mr. W. T. Edwards, of Ashford, to the designs of the owner of the car, Mr. H. V. Holden, of Eastwell Park, Ashford.—Yours faithfully, E. S. HEADECH, Estate Engineer.

SOME IGNITION QUERIES.

To THE EDITOR OF *The Motor-Car Journal*.

SIR,—Replying to your querist "Puzzled," it is quite likely his accumulators are not properly charged, as no form of Leclanche battery is really satisfactory for accumulator charging, at any rate for cells so large as those used in the Benz car, and anything like hard work soon spoils them. "Puzzled" should have his accumulators charged by an

advertisements we are led to expect that primary batteries have much longer lives.—Yours faithfully, H. HUNTER WOODS.

To THE EDITOR OF *The Motor-Car Journal*.

SIR,—In reply to "Puzzled," allow me to state that having used my Benz car for the past four years, I was much troubled some time since with my accumulators running out, and tried for some months to charge them with large types of Leclanche cells. These, although charging them to a certain degree, are not sufficiently powerful to enable the accumulator to maintain the charge, owing to the more or less rapid polarisation of the cells. About two years back I obtained four Boron cells from the Boron Battery Company, of Liverpool, which firm construct a special generator for charging Benz accumulators. These have given me every satisfaction, and, although I have no interest in the company, I would strongly advise "Puzzled" to write to them, as by so doing he will, I am confident, derive some valuable advice upon the subject.—Yours truly, H. C. THOMPSON.

MOTOR-BICYCLES FOR 1902.

To THE EDITOR OF *The Motor-Car Journal*.

SIR,—In following the many letters in your very interesting *Journal*, I note one from "W. McW." in the issue for December 21st, in which the claim is made to a wider field of experience in motor-bicycles than your other correspondents, as before riding one he built it. May I assure

W. McW." that he is not alone in that respect. I have been riding a motor-bicycle for three years now, and a friend also. Both these machines were built in a private workshop (my friend's), and both machines are still going strong. We also had no previous data to go upon, but the machines have cylinders 65 mm. bore by 70 mm. stroke, or about 2½ in. by 2½ in., and fly-wheels weighing 24 lbs. I am now finishing yet another machine. This has cylinders 80 mm. by 80 mm. stroke, and fly-wheels weighing 40 lbs. "W. McW." says his present engine has a bigger cylinder capacity than any now on the market. I am interested in this point. The Mitchell has a cylinder 75 mm. by 75 mm., or equal to 2½ h.p. De Dion engine. In the Shaw a 2½ De Dion is used; Calvert also uses 2½ to 2½ h.p., and King of Cambridge uses 2½ h.p. De Dion. Your correspondent also states that his whole engine only weighs 30 lbs. I should also like to know his weight of fly-wheels, which is a very important thing; for unless they are of very exceptional diameter I fear they are too light for an engine having a larger cylinder than 2½ De Dion.—Yours faithfully,
A. J. WESTLAKE.

PILOT BURNERS FOR LOCOMOBILES.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—In reply to "Loco" re Pilot lights for steamers, I wish to inform him that a device of that description has appeared in your columns and was called, I believe, the Kelly generator. At any rate, I have seen a car so fitted at the offices of the Houk Automobile Company, Snow Hill, London. By its means a car could be left under steam for twenty-four hours if desired, and moreover the said generator does away with the torch as well, as the main burner is ignited by it.—Yours truly,
A BEAST ON A BURNER.

MOTOR-CARS FOR THE TROPICS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I feel very much obliged to your correspondents "F. H. H." and Mr. Leonard, who have answered my letter in your issue of the 14th December. With Mr. Leonard's assurance of the suitability of petrol for cars in high temperatures I am quite satisfied. Could he inform me whether different hygrometric conditions would affect its behaviour? The air in the Straits Settlements, where I work, is warm. It is also moist, being as a rule almost at saturation point. Would this affect the behaviour of a petrol car? Mr. Leonard omits to say what the flash point of petrol really is. By flash point, of course I mean the flash point as determined in the manner so well put by Mr. Leonard—the scientific flash point. You see, in the colonies as well as at home we have legislators, and they, in their wisdom, have enacted that, so far as our particular colony is concerned, no oil whose flash point is below 78 (this is the limit, I think) may be imported. I have an idea that the flash point of petrol is considerably higher, but you will see how important the point is in view of the present state of the law, apart from thermometers and hygrometers.

As I am a medical practitioner requiring a good many horses, I cordially endorse what Mr. Leonard says in his last paragraph, but I should think it is for the "trade" to prove the efficacy of motor-cars for the tropics. Should it be able to do this, it has an unlimited market at its command in those countries where the horse and trap is not a luxury but an actual necessity of life.

When I came home on leave I determined that I would take back with me a motor-car to replace the old "Waler" of commerce and the very uncommercial Malay syce. But having gone into the subject of motors, I find that "in the multitude of counsellors there is"—chaos! It seems to me that motor-car builders leave it to their clients to experiment on their behalf; and as this sort of experiment may run one into a loss of a few hundred pounds, some of us may have to confine our aspirations to the possession of the inexpensive motor-bike.

It is to be hoped that in the near future some motoring firm will be found to show a little business aptitude, and demonstrate to the "Britains beyond the seas" that motoring is not all woes, but a pastime, or means of locomotion, available for all, and not to be classified among those fads commonly relegated to the man with a hobby. Such a firm would, in my opinion, have no cause to regret its enterprise.—Yours truly,
P. FOWLER.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Our attention has been called to the letters on the subject of motor-cars for the tropics appearing in your journal. We probably have as much interest as anybody in this subject, and have also probably devoted more time and attention to the matter, and have in all probability received more reports from India upon the use of both petroleum oil and petroleum spirit than other firms.

Petrol and gasoline are practically the same thing; there is occasionally a little difference in the density of two samples, the one of petrol and the other of gasoline, but if there be any difference it is so slight as to be negligible. The spirit petrol will flash below the freezing-point, it is obviously, therefore, more or less dangerous in this country however facts may be attempted to be glossed over; the numerous accidents arising from its use, and the explosions and burning out of cars sufficiently prove its great inflammability. If this be so then in a temperate climate, say 60 deg. Fahr., what then must it be in the tropical temperatures of 100 deg. Fahr.?

Putting aside the question of safety, we may mention that we had a report from a correspondent in one of the Presidency towns of India, who

had a Benz car there and who could only purchase the petroleum spirit in small quantities in bottles from different chemists, and by the time he had used it he informed us that the running of the car cost him 5s. per mile. We might add that, although we make our cars for use in this country to run with oil having a flashpoint of 75 deg. Fahr. or rather over, when building a car for India or other tropical climates the car is made to run with kerosene having a flashpoint of what is called 150 deg. Fahr.—Yours faithfully,
ROOTS AND VENABLES.
(J. S.).

TURNING CORNERS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I read in a recent issue of your paper that an artist "making the usual error" had depicted a motor-car in the Christmas number, I think, of the *Strand Magazine*, going round a sharp corner at evidently a high speed with the inside wheels off the ground, and I also read that "Flaneur" considered this wrong. The artist was right and your respected contributor wrong. The natural tendency of anything rounding a sharp curve is to capsize outwards; a cyclist on a motor-bicycle when going round a sharp curve at a fast speed leans inwards as much as ever he can to keep the inside wheel down, otherwise he would capsize outwards.

A railway track at a curve is built up on the outside line to make the train lean inwards, otherwise the train would topple over outwards, or in other words the inside wheels would lift beyond the point of equilibrium, and the carriages capsize outwards. I hope I have made this clear as ninety-nine people out of a hundred declare that the outside wheels lift, which is incorrect.—Yours faithfully,
RONALD E. HAYWOOD.

AN INTERESTING QUERY RE LOSS OF POWER.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Could any of your readers explain the reason why a new trembler fitted to a car should cause a loss of power? I recently put a new trembler on a Boyer car (Aster engine), and although the car went fairly well, it was obviously not up to its proper form. Upon the old trembler, which was considerably worn, being replaced the lack of power was no longer apparent, and the engine developed splendidly. I should be very pleased if some one could throw some light upon this.—Yours truly,
FLASH.

VIBRATION AND BALANCE MOTORS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I was much disappointed in the replies to the charge of copying. I should have liked to see half a dozen replies from makers, indignantly denying the accusation. How many firms are there, making a motor which is not of Daimler, De Dion, or Benz type?

There has been a great deal said about vibration. Are we going to sit down and accept it as an essential or "component part" of a petrol car? I have seen one French and one English car in which there was no perceptible vibration when standing with the motor running. I think it would be of general interest—to purchasers—if any possessors of, or experimenters with, a really balanced motor (balanced moving parts and explosions) would give their opinions thereon. I am aware that in large cars, with plenty of cylinders, the vibration is not greatly noticeable, but I should much like to hear of a balanced motor suitable for the smaller type of car, generally "well shaken before taken" along by a De Dion type motor.—Yours truly,
J. W. W. B.

QUERIES RE GREASE AND ACCUMULATORS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Will anyone kindly inform me what is the best grease or oil or mixture for gear boxes? Anything that I have hitherto tried has been of too thin a consistency and runs out badly at the bearings.

How can one tell when an accumulator is nearly exhausted? I have received through your paper more than one valuable wrinkle from Mr. Estcourt, and perhaps if this meets that gentleman's eye he will again favour myself and no doubt many others.—Yours truly,
AMATEUR.

MR. ARCHIBALD FORD writes:—"I can quite appreciate the ingenuity of your correspondent who wrote the letter the other week, in which he refers to fitting a small 4-volt electric lamp under the steering wheel of the Darracq in order to see to change the gear at night. But really, such a contrivance is absolutely unnecessary on a car like the Darracq. When the driver is familiar with his car it is the simplest thing in the world to pull the lever towards you as you desire to increase the speed or push it from you when climbing hills, and there is practically no chance at all of missing the notches after but ordinary experience."

WE learn that a movement is on foot in Dublin having for its object the formation of a motor-cycle club in that city.

WHY did the gear scream?—Because the mixture was being throttled.

M. SANTOS-DUMONT is now at Monte Carlo preparing for his aerial voyage across the Mediterranean. He hopes to begin operations about the middle of the month.

DIARY OF 1901.

AN INTERESTING AUTOMOBILE RECORD.

JANUARY.

English Motor Club's New Century run to Brighton.
Paper by Mr. Outhwaite on "Motor-cars for Public Services," at the Automobile Club.
Automobile Club's Demonstration to County Councillors at Warwick.
Formation of the Automobile Trade Protection Society.
Linsky cup race at Nice.
Result of French Alcohol Trials published.
Gilbert heavy oil car, Mytholme Doctor's car, and Baines motor-bicycle placed on the market.
Discussion on motor patent matters.
Irish Automobile Club formed.

FEBRUARY.

Motor vehicles for municipal purposes attract attention in London and other large cities.
French Motor-Car Exhibition.
Motor-Bus Service inaugurated at Hemel Hempstead.
Excelsior motor bicycle placed on the market.
Yorkshire Automobile Club holds its first annual dinner.
English Motor Club run to Farnham.
Pau Automobile Week.
Paper on Proposed 1,200 Miles Trial read by Mr. Mark Mayhew, at the Automobile Club.
Automobile Club demonstrate before East Suffolk County Councillors.
Mr. Balfour suggests motor-cars as a means of solving the "Housing Difficulty" of London.
Result of Electrical Car Trials announced.

MARCH.

Western section of Scottish Automobile Club formed, with headquarters at Glasgow.
Motor-car demonstration to Chief Constables by Automobile Club.
Motor Union formed.
Marked agitation amongst County Councils in favour of numbering motor-cars, and further reducing "legal limit."
Reading Automobile Club's exhibition of motor cars.
Paper on "A Motor Field Battery" read by Major H. A. Bethell, R.F.A., before the Royal Artillery Institution.
South-Western Motor-Car Company, Limited, inaugurate public service of motor-cars in South London suburbs.
Major Holden, Superintendent of the Royal Gun Factory, Woolwich, lectures on "The Automobile and its Possible Uses in War," at the Royal Artillery Institution.
Affiliation of the Manchester Automobile Club with A.C.G.B.I.
Lincolnshire Automobile Club Inaugural Banquet.
Demonstration at Worcester by A.C.G.B.I. and Midland Automobile Club, before Worcestershire and Staffordshire County Councils.
Belgian Motor-Car Exhibition held at Brussels.
Wolverhampton and District Automobile Club holds its first run.
Automobile fête at Nice.

APRIL.

Southampton Borough Council adopts resolution in favour of municipal motor-car service.
Automobile Club's Easter Tour to Salisbury and the New Forest.
Motor Races at the Crystal Palace.
Memorial of motor-vehicle manufacturers to the Local Government Board.
Albion Motor-car Company introduce Albion car.
Petroleum-Spirit Distance Contest at Sheen House Club.
Automobile Club run to Dunstable.
English Motor Club's Control Contest at Crystal Palace.
The London County Council purchase a Locomobile steam car for the Fire Brigade.

MAY.

Motor-Car Exhibition at the Agricultural Hall.
Consumption and hill-climbing trials at Dashwood Hill.
War Office offers prizes for self-propelled lorries for use in military operations.
Automobile Mutual Protection Association holds a meeting at the Agricultural Hall re Maybach carburettor test case.
Automobile Club run to Guildford.
Paris-Bordeaux and Gordon-Bennett Cup races.
Automobile Club's Whitsuntide tour to Oxford.
Eccles Town Council order a motor-fire engine.
The Queen's electric car attracts attention.

JUNE.

Paris-Berlin Race.
Heavy Motor-Vehicle Trials at Liverpool.
Automobile Club's demonstration to County Councils at London.
Automobile Club's demonstration to Incorporate Association of Municipal and County Engineers at Leicester.
English Motor Club's Hill Climbing Competition, at Tilburstow.
London County Council declines to accept a resolution of the Berks County Council, in favour of numbering motor-cars.

A representative meeting of manufacturers of and agents for motor cars pass a resolution to support one annual exhibition only.
The King goes to Windsor and back from Marlborough House on a motor-car.
British and Foreign Electric Vehicle Company's car "Powerful" makes a run of 94½ miles on one charge.

JULY.

Automobile Club's hill-climbing trial at Dashwood Hill.
French Automobile Club limits weight of future racing cars to 1,000 kilos.
Mr. Justice Farwell decides against the validity of the Maybach carburettor patent.
M. Santos Dumont commences a series of attempts to win the Deutsch prize by sailing round the Eiffel Tower in a motor balloon.
Conference held at the Automobile Club to consider the arrangements for charging electrical motor-cars.
Proposals to construct motordromes receive the serious attention of Automobile Clubs in various countries.

AUGUST.

Motor-car service for transport of goods established between London and Tunbridge Wells.
Irish tour of the Automobile Club.
Members of the Automobile Club assist with their cars at cavalry manoeuvres at Salisbury Plain and at cyclist manoeuvres at Aldershot.
The King "motors" at Homburg on his English-built Daimler.

SEPTEMBER.

Reliability Trials at Glasgow.
Speed Contest at Deauville.
British Association appoint committee to investigate the resistance of roads to motor-traction.
Motor-bus service between Putney and Piccadilly Circus instituted.
The "Powerful" electric car makes a long-distance run from London to Glasgow and back.

OCTOBER.

Legal speed of motor-cars in Scotland increased to twelve miles an hour.
M. Santos Dumont wins the Deutsch prize.
General indignation amongst motorists at police prosecutions for alleged furious driving.
Sixty convictions for furious driving take place in one day at Reigate.
Agitation for the abolition of the speed limit.
Liverpool Self-Propelled Traffic Association memorialise the President of the Local Government Board on the subject of increased tare limit for heavy motor-vehicles.
Motor Cycling Club formed.

NOVEMBER.

Brighton Road motor patrol instituted.
Annual dinner of the Automobile Club.
Fifth anniversary run of the Automobile Club to Southsea.
Secretary of State for War offers prizes for military tractors; entries to be made before January 1st, 1903.
Aero Club formed.
First ascent of members of the Aero Club.
Hill-climbing contests at Gaillon; British car wins.
The County Councils Association passes a resolution to the effect that the general law of the land as regards vehicles is sufficient for motor-cars, provided number plates are carried and drivers licensed.
South African Automobile Club formed at Cape Town.

DECEMBER.

War Office motor-wagon trials at Aldershot.
Circular issued by A.C.G.B.I. asking members to abstain from exceeding legal speed limit.
First winter meeting of British Aeronautical Society.
First ascent of members of the Aero Club, from Crystal Palace, without professional assistance.
Motor-bicycle record for mile and kilometre made on the road by Rigal; time, 53.3-5sec. and 33sec.
Motor-car exhibition held in Paris.
First of a series of papers on motoring entitled, "Ignition in Petroleum-Spirit Engines; Systems, Probable Failures: How to Discover and Remedy Them," intended for publication in a Badminton Library book on Motoring, read at the Automobile Club.

WERNER MOTORS, LIMITED, are removing from Brook Street, W., to larger premises at 19, Woodstock Street, W.

THE Nottingham and District Automobile Club holds its second annual dinner at the George Hotel, Nottingham, on Friday, the 10th inst. The A.C.G.B.I. fixed a club run down to Nottingham for the event. There were no fixed arrangements for the run to Nottingham, as it was thought preferable that members should be able to choose their own route, time of starting, and return.

FURIOUS DRIVING CASES.

At Stowmarket Petty Sessions, Frank Lanchester, Birmingham, was charged with driving a motor-car furiously at Stowmarket, to the danger of the public, on December 5th. Defendant did not appear, and sent a letter asking for the case to be adjourned on the grounds that it might prejudice a County Court case pending, and that his solicitor was unable to be present that day. The witnesses for the prosecution were present, and the Magistrates declined to accede to the request. Charles Gosling, Combs, said he saw a motor-car coming through Stowmarket from Ipswich; it did not pass him, and he thought it was going quite ten miles an hour. Samuel Pope, publican, thought the car was passing down the street at between sixteen and eighteen miles an hour. There were three or four carts about, but the driver was evidently a good one, and he got through without slowing and without mishap. Robert Bird, dealer, said the car went so fast it looked as if it was flying, and it frightened him. He put the rate at eighteen miles an hour. Later he went to Combs and found the car overturned; it had run into one of his ponies and broken its leg. Wm. Bird, son of the last witness, said he warned the driver to slow down, as he had a drove of colts on the road, but no notice was taken, with the result that one of the animals had its leg broken. The car was going a good eighteen miles an hour. The defendant was fined £5 and costs, £2 8s. 2d.

At the Dewsbury Borough Court, Richard Roslyn Kilner, eighteen, was summoned for furiously driving a motor-car, to the danger of the public. Mr. Walker appeared for the defendant, who pleaded not guilty. The evidence of police-constable Baker, supported by that of another officer, showed that on the 19th December, the defendant drove a motor-car through Dewsbury Market Place and Long Causeway, at the estimated rate of from seventeen to eighteen miles per hour. The defence was that the speed was only from seven to eight miles per hour, and Mr. Kilner, senior, to whom the car belonged, said that was its usual speed. It could be driven at twelve miles per hour, but not more than fourteen at the most; indeed, he was prepared to give any one a five pound note who, on a level, could drive the car at sixteen miles an hour for a mile. The Bench convicted, and said that as that was the first case of the kind they would take a lenient view. The defendant had to pay £3 3s. and costs.

At Hastings Benjamin Burbidge was summoned for furiously driving a motor-car at the Marina on December 18th. Mr. C. Davenport Jones prosecuted, and Mr. Cruttenden defended. P.C. Fairbairn said that at six o'clock on the evening named, when a little to the west of St. Leonard's Pier, he saw a motor-car coming along at the rate of about fourteen miles an hour. He called upon the defendant, who was driving, to stop, but he took no notice. The following day he saw defendant, and told him he should report him. In cross-examination, witness said he did not time defendant, and admitted he had no experience of judging pace. There was not much traffic about. Frederick Lock, cab-driver, gave it as his opinion that the car was travelling at a rate of twenty miles an hour; and, in answer to Mr. Cruttenden, he said he knew nothing about motor-cars, and did not want to. Frederick Bournier, another cabman, fixed the pace at between fifteen and twenty miles—he did not check the pace; and a signalman named Thomas Barnes thought the speed was twenty miles. Burbidge, in defence, asserted that he regulated the pace of the car so that it could not exceed nine miles an hour. Mr. C. F. Froud, the owner of the motor-car, said the journey in question was the first since a spill, six weeks back, and the driver had instructions to travel at eight miles an hour. Henry Hyland, a 'bus driver, said the car was coming along at about eight miles an hour. The defendant was given the benefit of the doubt.

At Bangor, the Marquess of Anglesey was summoned before the magistrates for furiously driving a motor-car. The summons was withdrawn upon an assurance being given that there would be no recurrence of the offence.

EXPERIENCES ON ICE.

MR. MARK MAYHEW has kindly supplied the following brief account of a recent experience:—

"My experiences were briefly as follows:—Left London on my 20 h.p. Panhard Saturday morning, 28th December, 7 o'clock; roads like asphalt, freezing hard. Breakfast at Hillingdon; left Hillingdon 9.30, raining hard. Made for Oxford; found Dashwood Hill covered with rough ice. Ascended second speed accelerated. Very fast. Top of Dashwood Hill to bottom of Aston Hill snow a foot deep. Bottom of Aston Hill to Oxford deep mud. Five miles out of Oxford suddenly hit solid ice running with water. Awful side slip. Hit side of road three times, left—right—left, after which straight again. Repetition of this a mile further on. Passenger's hair standing on end and teeth chattering. Onemile from Witney noticed sharp descent covered with ice, running with water. No time to pull up car, put brakes on at top of hill, stopped driving wheels dead, slid down to the bottom. Arrived at bottom, let in clutch on second speed, and began ascent of other side; car continued ascending while momentum lasted, then wheels began to slip, dropped into first speed, but when momentum all gone, car stopped going forward, wheels revolving on ground. Next stage, car sliding down hill backwards with wheels revolving forwards—curtain and green fire—policeman at bottom; apologised duly for speed and backward direction, explanation agreeably accepted, helped us cover wheels with strips of sacking, by means of which climbed hill and got into Witney; gave up for day. Tried to reach Cheltenham next day, but found after Northleach a three miles stretch of yesterday's sample, again stuck; friend and I

tried to push car round, both fell down, eventually pulled car round bodily from side of road. Went back to hotel."—*Automobile Club Notes and Notices.*

MOTOR-CAR, TRAP AND LAMP-POST.

At the Birmingham County Court, his Honour Judge Whitehorse and a jury were engaged for several hours hearing a case in which Samuel Kingston Cattell, of Alum Rock, sued Felix Chapman, of Steelhouse Lane, for damages alleged to have been caused by the negligence of the defendant in driving a motor-car. Mr T. G. Tyler appeared for the plaintiff, and Mr. Dorset (instructed by Messrs. Price and Adeock) represented the defendant. The allegation against the defendant was that on the afternoon of August 19, while in Sutton Road, Wyld Green, he drove a motor-car containing himself and three other persons so negligently that a horse attached to a trap of which the plaintiff was in charge was alarmed and ran away. In the course of the horse's career the trap collided with a lamp-post, knocked it down, and the trap and horse were damaged. The plaintiff claimed for depreciation in the value of the horse £10, and £5, the cost of the repairs to the trap. For the defence it was urged that there was no evidence of negligence, and after his Honour had summed up the jury found a verdict for the defendant.

ALLEGED BREACH OF WARRANTY.

In the Brighton County Court, J. R. Adler sued Messrs. Duck and Harris, 163, Western Road, Brighton, motor-car agents, for £25 as damages for breach of warranty upon the sale of a motor-car. Plaintiff's case was that he bought a second-hand motor-car for £105 of the defendants on their representation that it was a De Dion. He paid £25 deposit, but afterwards found that, although the motor was a De Dion, the car was a Cudell; and he then instructed his solicitor. For the defendants it was urged that the plaintiff knew throughout the transaction that the car was a De Dion motor with a Cudell body on it. At the same time they contended that it was perfectly correct to describe the car as a De Dion, the motor and the transmission gear, which were all genuine De Dion, being by far the most important parts of the whole. His Honour was occupied a long time in hearing the evidence, and the case, which had not been finished when the Court rose, was adjourned to January 17th.

ACTION FOR DAMAGES DISMISSED.

At Waterford Quarter Sessions, on Friday, before Judge Fitzgerald, Mr. Michael Hickey, farmer, Coolfin, Co. Waterford, sued Messrs. W. F. Peare, cycle manufacturer, and William Pope, merchant, Henrietta Street, Waterford, for the recovery of £50, damages for that the defendants, on October 6th, 1901, so negligently, furiously, and in violation of the Light Locomotives (Ireland) Order, 1896, on the public highway, drove motor-cars, or light locomotives, that they ran into the plaintiff's trap, then being lawfully driven on the said highway, whereby the plaintiff was injured, and his horse hurt, and his trap and harness broken. After a lengthy hearing, his Honour decided that the accident was due to the plaintiff's own negligence, and dismissed the case on the merits.

WE are asked to mention that the Boyer, Cannstatt Daimler and Fabrique Nationale cars, for which the Motor Traction Company, Limited, 27, Walnut Tree Walk, Kennington, S.E., are agents, are all being built with long and wide wheel base, viz., 6 ft. 7 in. by 4 ft. 4 in., and wheels of equal sizes.

THE Automobile Transport Company have opened the new year with "a few words on modern road locomotion," produced in an illustrated pamphlet descriptive of the company's "Twentieth Century" motor-vehicles. Not the least interesting page of the pamphlet is that which proves by figures the economy of the motor-car as compared with the horse-drawn vehicle.

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THE Motor-Car Journal.

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COMMENTS.



IN addition to the luxurious private car which the King recently ordered from the Daimler Motor Company, we learn that His Majesty is purchasing from the company still another automobile. This will be a large and powerful vehicle of omnibus form, seating fourteen persons, and designed for use on the Sandringham estate, partly as a loaders' car for the Royal shooting parties, and partly for the conveyance of luggage to and from Wolferton station. The car will be fitted with a 22 h.p. motor, and with a special body designed to carry luggage on the roof, and also inside, the passengers' seats being made to let down when not required. The Kaiser, who is becoming quite as enthusiastic a *chauffeur* as King Edward, has, we learn, also just received delivery of a handsome 16 h.p. *tonneau* from the Cannstatt Daimler Works.

The Automobile Club Show.

IN our last issue we gave the names of several additions to the long list of firms that will exhibit at the Automobile Club Show at the Agricultural Hall in April next. Since then several additional firms have booked spaces, and altogether the exhibition promises to be the finest ever held in this country. An interesting item that we are able to publish this week is to the effect that Sir Arthur Bigge has informed Mr. Roger Wallace, K.C., the Chairman of the Automobile Club, that H.R.H. Prince of Wales hopes to pay a visit to the exhibition, and looks forward to doing so with great interest.

The Military Trials.

AFTER the attention drawn to the subject of motor-lorries for military purposes by the recent competitions at Aldershot, it seems a great pity that a dispute should have occurred in connection with the award. In all such competitions those who enter should undertake to abide by the judges' award, and if it is not in accordance with the facts, there are other ways of bringing the matter to the notice of the proper authorities than by declining to accept the prize that is actually awarded. Into the merits of the unfortunate dispute between the War Office and Messrs. E. Foden and Co. in connection with the recent army lorry trials we will not enter at length, save to congratulate Messrs. Foden on their decision to sell their lorry to the War Office for service in South Africa. There it will have every opportunity of being tested in actual warfare, and its undoubted merits will become far better known than in any trial or test in the "piping times of peace."

The Point Proved.

WITH regard to the trials which have taken place, Mr. Foden considers that these trials have conclusively proved that the traction-engine type is the true model for steam road tractors, as opposed to any modification of the ordinary type of motor-car. This is especially the case for military wagons, as it not only gives the paramount advantages of greater strength, durability, power, and economy in use out of all proportion to the slightly additional weight, but it also gives a great immediate advantage from the fact that any ordinary traction engine driver can be trained to the use of the wagon in a few days' time.

Motor-Wagons at the Gold Coast.

SPEAKING at the second ordinary general meeting of the Birrim Valley Gold Mining and Dredging Company, Limited, last week, the chairman stated that with reference to the question of transport, in addition to spending money on making roads for communication, the Gold Fields of Eastern Akim had incurred an expenditure of some thousands of pounds, in which this company had joined to the extent of £2,000, in providing steam-motor traction in the eastern part of the Gold Coast Colony. They had now a fairly good open road from the port of Accra up to the site where their dredge was to be erected, covering a distance of from sixty to sixty-two miles. To send up two tons of material to where they proposed to mine took no less than eighty carriers, and at 6s. 6d. each this worked out at £26. Now, having the road, they had provided 2½-ton steam motor-wagons, and they now estimated that they could take up two tons of material in one day, because the speed guaranteed was seven miles an hour. Reducing that to five miles an hour, in a working day of twelve hours they would be able to do what it took eighty men from three days and a half to four days to do at a cost of £26, for the small sum of £4. Therefore, when they actually got to work a very important item would be saved in the cost of transport.

The Police and Motor-cars.

"To run over a policeman is a very grave offence," remarks the *Belfast News Letter*. "Unfortunately, motorists do not confine their attentions to the police, but distribute them all over the body politic. Not unfrequently they run into hedges and ditches, and suffer physical injury themselves, and there are instances on record of five-bar gates having been cleared by youthful and enthusiastic drivers. Wheelmen in early days were bad enough, but the drivers of motor-cars go at treble their speed, especially when they leave the metropolis behind them. The wagoner with a heavy load behind his horse is often painfully undeceived when he imagines that it is the duty of a motorist to get out of his way. The modern Phaeton sounds his syren, whose startling voice is enough to demoralise nervous people unfamiliar with the muffled noise it makes. It often

approaches the unwary pedestrian in a cloud of dust, snorting along at express speed as it vomits forth its pestiferous fumes. If motorists would always collide with policemen their erratic speed would soon be regulated by the magisterial bench."

A Note for Ireland.

MOTORISTS have been so well received in Ireland that we are somewhat surprised that so representative a journal as the *News Letter* should take up the contrary attitude shown above. It declares that motorists regard the King's highway as being made and maintained in their interest alone—a silly suggestion, unworthy the reputation of our Irish contemporary. There are motorists who are not so well mannered as they should be, and there are drivers of horse-vehicles who regard the highway as theirs. But we must protest against this wholesale branding of motorists as unreasonable merely because some have been guilty of foolish indiscretion.



MR. C. FRISWELL ON HIS 20 H.P. PEUGEOT.

Money in the Air.

As will no doubt be remembered, the French Aero Club decided some months ago to arrange a grand International airship race for next summer. Though the "gate" at such an event is likely to be more speculative than profitable other inducements to intended competitors are forthcoming, and victory will be far from a barren honour. On the announcement of the event M. Deutsch at once gave £1,000. This first contribution has been followed by others equally generous, and it is now stated that the total amount of prizes endowed reaches no less than £20,000. As may be imagined, aerial navigators in France are in a ferment of excitement at the prospect of the coming season. The latest vessels, worked out on paper or built in small models, are those of M. Cavalier and M. Piraud. The former has devised a balloon shaped like a bird, having a species of tail in lieu of a rudder, and a pair of flexible wings on extensible rods. The latter's invention is an aeroplane, heavier than air, the wings of which are to reproduce exactly the movements of those of birds.

The Education of Animal Life.

SOME day books on natural history will contain a chapter on the educational influence of the motor-car on wild life. It is a rare thing to see a bird, hare, or rabbit near the metals of the railway, and although birds frequently perch on the telegraph wires they rarely come to grief from passing trains. With those who frequent the ordinary highway, however, the case has been different, and motorists often are confronted with birds that do not realise the speed of automobiles. Blackbirds have been the greatest victims from this cause, because of their habit of flying out from the hedges when alarmed, as well as

because they remain too long on the road. Probably the motor-car has been less destructive of cats than of any other form of animal life.

Accidents in France.

Le Velo's casualty list for France for the month of October shows 47 deaths and 668 injuries due to the horse; 14 deaths and 124 injuries due to the railway; 12 deaths and 97 injuries due to the bicycle; and 3 deaths and 50 injuries due to the motor-car. The horse was responsible for 61.84 per cent. of the total fatalities and 71.14 per cent. of the total injuries from the four causes; the railway for 18.42 and 13.20 per cent.; the bicycle for 15.75 and 10.33 per cent.; and the motor-car for 3.95 and 5.33 per cent. respectively.

Scarcity of Motor Spirit in America.

At a recent meeting of the National Association of Automobile Manufacturers, in New York, Mr. McGowan, a representative of the Standard Oil Company, gave an address, in which he stated that during the past year he had been making a special study of the requirements of gasoline engines and liquid fuel steam engines, and that he had found that in almost every case seventy-six test gasoline was required for the engines and burners now in use. As the demand had grown enormously it already exceeded the supply, which could not be increased for the reason that in distilling petroleum the first products are of very high test, and from these they decline very rapidly, so that not more than 2 or 3 per cent. of the product of any one test was available for automobile use. He stated that the large demand for seventy-six test was undoubtedly the cause of the great advance in the price of this grade of gasoline, and urged manufacturers to produce burners and carburettors which would use a lower test product, the lower the better, as there are more heat units and consequently more power in the lower grades of petroleum product than in the high grades.

Electric Vehicles.

ACCORDING to an article in the *World* fashionable folk are looking to electricity for effecting some marvellous developments in automobilism; and there is undoubtedly an increasing use being made of electric cars in the West End of London. This is largely owing to the well-directed efforts of the City and Suburban Electric Vehicle Company and other concerns in the industry, who have made special efforts to popularise and perfect the electric vehicle. We now hear that arrangements are being made for the introduction of Krieger carriages—so largely used in Paris—into this country. Some vehicles of this type have, we understand, already arrived, and the popularisation of such cars should prove attractive.

Progress.

TIME, and the active educational work pursued by the Automobile Club, is having the effect that might have been expected, and common-sense views as to the absurdity of the speed limit are being endorsed not only by the County Councils Association, but by some of the more enlightened of the Councils, including that of Gloucestershire. On the other hand, there is some want of unanimity as to the price to be paid for its abolition, and the clamour for numbering or marking will need to be carefully watched to ensure that automobilists do not receive invidious treatment as compared with other highway users without receiving a *quid pro quo*. Names instead of numbers would certainly be preferable if either are inevitable, but both offer a dangerous opening to malicious action on the part of prejudiced individuals, while the proposal for requiring a certificate of efficiency for the driver would be of little utility, as a driver who could not obtain it would be probably rare in the extreme. Still, it would be unobjectionable, and salutary—if the certificate could be applied impartially to drivers generally, those of hay-motors included!

British v. Foreign Cars.

A SHAREHOLDER in a British motor company has sent a most pathetic wail to financial editors, and confesses to a feeling of wonderment as to whether the motor-car press is subsidised by the French Government. "It is positively disgusting," says our anonymous friend, "to look through the journals and see paragraph after paragraph advertising foreign cars." When we remember the large proportion of foreign cars in use in this country there need be no surprise because they are so frequently mentioned. English-made vehicles are just as freely referred to, but the unfortunate part of the matter is that there are considerably fewer such cars in use. We wish there were more, and if the critic of the press will stir up public opinion against the present vexatious restrictions he will be doing something to bring his chances of profit a little nearer.

Motor Vehicles for Heavy Traffic.

UNDER the auspices of the Bradford Engineering Society, Mr. E. Shrapnell Smith delivered a lecture last week in the lecture-hall at the Bradford Municipal Technical College on "Motor Vehicles for Heavy Traffic." After explaining the various methods adopted by different makers of motors in the construction and arrangement of parts, Mr. Smith said we were accustomed to think that France, to whom credit certainly was due for reviving the interest in automobilism, was the first to experiment with self-propelled motors as a means of goods haulage, but, of course, as many engineers knew, there existed upon English roads between the years 1820 and 1835 a large number of efficient and satisfactory vehicles which, although used entirely for passenger service, would have been quite fit to deal with goods had it been thought desirable. Since 1878 much attention had been given to the subject, and, as was well known, motor-vehicles for haulage purposes were now practicable. A large number of photographs and diagrams were put upon the screen, by which Mr. Smith illustrated many of the vehicles which entered for the trial tests at Liverpool in 1898 and 1901.

Motor-Buses at Exeter.

THE Electric Traction Committee of the Exeter Town Council considers it desirable that information be obtained as to the practicability and suitability of introducing motor-buses, electric road-cars, and other means of passenger transit in the city, and that a sub-committee as a deputation be appointed to visit towns where any or either of these systems are in operation, and to report. Mr. Wreford, at the last meeting of the Council, moved the adoption of the recommendation. The Committee was desirous that the subject should be thoroughly threshed out. It wished to have an experience of the working of the various kinds of 'buses and cars, and also the cost. Mr. Stocker, in seconding, was sure the whole of the citizens would be glad to know that the inquiry was to be a thorough one. There was a great deal of difference of opinion with reference to electric traction, and the more extensive the inquiry the better. The report was adopted.

Horses and Motor-Cars.

IMPORTANT news comes from Preston, and the state of the market at the great horse fair held in that Lancashire town last week is significant. Preston is in the centre of the district where demonstrations of the value of motor haulage for heavy loads have been most frequent. Many of the leading manufacturers of the county have adopted a system of motors for drawing heavy loads, with the result that burdens have been taken from horses and economies effected in the stables. At the recent horse fair horses which two years ago would have realised £60 were sold for £45. Seeing that there was a good demand for horses for Army purposes, it cannot be said that the prices were unfairly reduced. Local experts ascribe the fall in value to the introduction of motor-vehicles for heavy traffic in certain large northern towns.

Protective Hastings.

MANY visitors to Hastings last summer were disappointed to discover that a by-law prevented their taking a trip in the seductive motor-cars that ply between the Cinque Port and its attractive little rival Bexhill. The only way to accomplish the desired trip was to journey first to Bexhill and return by motor-car to Hastings; passengers booked for the return journey, of course, having the right to make the homeward journey by motor-car. The reason for this apparently inexplicable restriction of the freedom of the stranger within her gates, to go and come as he pleased, was that Hastings, chary of granting licences to public motor-cars, hoped, by placing an embargo on Bexhill's homeward bound cars, to prevent her own visitors from wandering further afield, and scattering those pence and shillings elsewhere, which long usage, previous to the rise of her rival, has led her to regard as her own. With a view to a better understanding, the Bexhill Urban Council have approached the Hastings authorities with the suggestion that cars from both towns should be allowed to take up passengers at the end of the outward journey. Hastings, possibly because it has not a regular service to Bexhill, has declined the mutual facilities offered. The "dog-in-the-manger" policy, as one of the wise councillors of Hastings labelled the decision is hardly likely to add to the attractions of that town from a visitor's point of view.



MR. CREBER, OF BARRHEAD, N.B., OUT FOR A RUN IN THE SNOW.

A Motor Mail Service.

Hitherto the mail service between Manchester and Liverpool has been effected by means of two double-horsed vans, which leave the respective cities at 10 p.m. The thirty-five miles' journey takes about five hours, and twice *en route* each van is rehoused—once at Warrington and once at Prescott. But the old order changeth. An arrangement has been made with the Motor Haulage Company, Limited, whereby from March 1st next motor-vans are to be employed experimentally, which are expected to cover the distance in four hours. The two vans will leave their respective starting points at the same time, and stop only at Warrington. There the two drivers will change places, each conducting a different van and two tons of mails back to his starting point. The obvious advantages of such an innovation—which, granted a fair trial, cannot fail to succeed—are, at a modest estimate of speed, mails closing one hour later, and two motor-vans doing the work of two carts and twelve horses.

A Fine Show of Cars.

ONE of the finest collections of cars and most representative gatherings of *chauffeurs* ever brought together was that seen at Welbeck on Saturday, on the occasion of the trials held by the Automobile Club.

Amongst the cars we noticed Mr. Hargreaves's 22-h.p. Daimler, of bright aluminium; Mr. Oliver Stanton's 22-h.p. Daimler; Mr. Manville's, Mr. Bush's (Daimler Company), Mr. Crombie's and Mr. Owers's 16-h.p. Daimlers; Mr. Roger Wallace's 12-h.p. M.M.C.; Mr. Midgley's 16-h.p. Napier; Mr. Cordingley's and Mr. Edge's 9-h.p. Napiers; Mr. Rolls's and Mr. Mayhew's 20-h.p. Panhards; Mr. H. Du Cros, jun.'s, and Mr. Jarrott's 16-h.p. Panhards; Mr. Edmund's 9-h.p. Daimler; Mr. Friswell's Peugeot; Mr. Stocks's new De Dion; Mr. Johnson's New Orleans; Mr. Critchley's new "Brush," with 10-h.p. Abeille motor; Mr. Ginder's Locomobile; a Delahaye, etc. The trials were of a very interesting description, and were watched by a number of the most influential residents in the neighbourhood, as well as by Government inspectors and War Office officials.



A CONSULTATION IN WELBECK PARK.

Photo by]

[Mr C. Friswell.

Motor Houses at the Rear.

SUBURBAN house agents and the owners of eligible dwellings in the fashionable quarters of London offer to intending tenants conservatories, coach-houses, side entrances, rich garden soil, but the orthodox inducements to occupation have had their day, and the modern man who wishes to let his house must be able to add something more. The bicycle shed is no longer a novelty, and the addition of a motor-house will probably be superseded in time by a "balloon stable." Meanwhile we commend (for his recognition of the moving force of to-day) the advertiser of the houses at Hampstead "with motor-houses at the end of long gardens, with level gates to another road." Such establishments ought to prove worthy the attention of motorists thinking of living near the famous Heath—notorious and noisy at holiday seasons, but delightfully pleasant at other times.

Sweet and Bitter.

SHOULD a Bill about to be introduced by the French Government become law there is more than a prospect of the price of sugar doubling in this country. As most people know, the bulk of the sugar consumed in this country is the product of the French-grown beet. It is practically the same sugar as that

consumed in France, but only costs about half what our neighbours pay for it. The reason for this is that the French Government has, with a view to fostering agricultural interests, at the expense of someone else, for years past paid a bounty on all home-grown sugar exported. Now the Bill which is to come before the Chamber aims at making the refining of petrol a State monopoly, like the manufacture of matches and tobacco. This, if carried into effect, will remove the bonus from exported sugar and still further benefit agriculture, for the beet will, in common with many other roots and cereals, attain a higher market value, as the producer of that home-grown alcohol which the French Government hopes to make the motive power of all explosive engines. Automobilists may not take kindly to alcohol as a substitute for better-understood petrol, but a maternal Government, with the entire supply of petrol under its control, will no doubt find a way of bringing about the desired change. It would indeed be a strange conclusion to the many protests and Commissions on the "bounty" system if the coming of the automobile should set our West Indian sugar planters on their legs again.

The Evolution of the Automobile.

It is satisfactory to observe that the motor-vehicle is attaining to a certain dignity of its own. Originally it was simply the old horse-drawn carriage without the shafts; but now makers are realising that the highest standard of utility is not inconsistent with shapeliness and the grace which always belongs to appropriateness. This is decidedly an advance, and one which all must recognise as in the right direction. Of course the old vehicle body may be made the basis for the design of the newer superstructure, but that intended for the automobile must gradually evolve its own characteristics and not be allowed to slavishly follow the designs that have done duty from the very earliest times.

A MOTOR-CAR race, in which the cars are to run backwards, is, it is reported, being organised in Belgium.

THE first annual dinner in connection with the Wolverhampton and District Automobile Club was to be held on Thursday evening.

DURING the course of the week the British Automobile Commercial Syndicate, Limited, have sold to the Hon. Rupert Guinness a 12 h.p. Panhard car, and to the Hon. Walter Guinness an 8 h.p. Panhard car.

A MOTOR-CAR driver in the employment of M. Peugeot, of Paris, has been sentenced to a year's imprisonment, a fine of £8, and £400 damages for accidentally running upon the pavement and killing a child. M. Peugeot was held civilly responsible, and has been ordered to pay the damages.

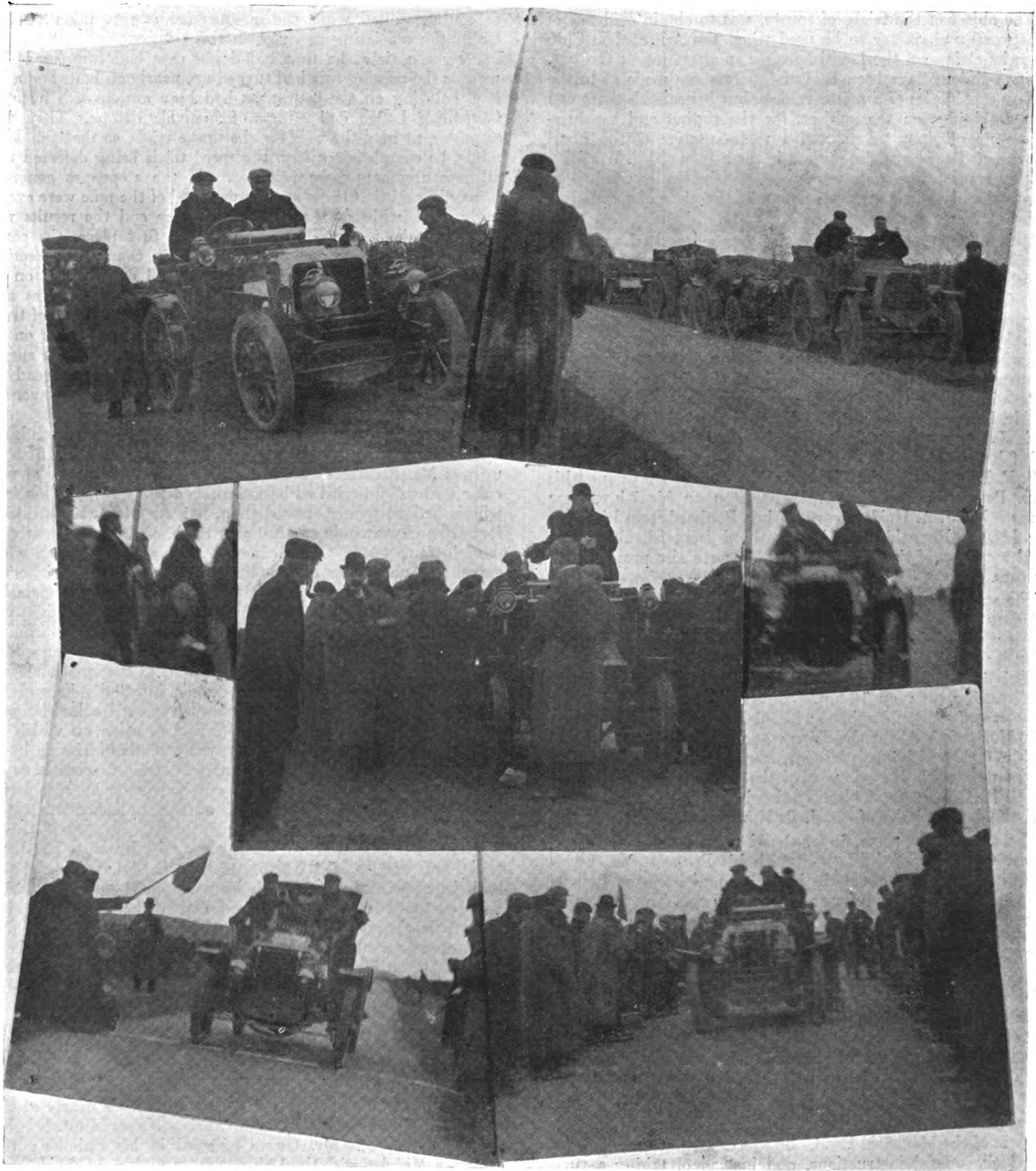
THE Borough Engineer has reported to the Works Committee of the Kensington Borough Council that the Thornycroft Steam Wagon Company delivered a motor street-cleansing machine constructed under their contract with the Council, and that the same worked very satisfactorily during the agreed seven days' trial.

THE Turin correspondent of the *Velo* states that the King of Italy has just passed his examination as a motor-car driver. This took place in a building especially prepared for the occasion, and his Majesty not only performed the various evolutions in his phaeton, but displayed an intimate acquaintance with the working of the machinery.

MESSRS. ROOTS AND VENABLES send us a copy of a letter received from the Standard Oil Company, of New York, by one of their correspondents in Assam:—"Referring to your memorandum of 27th ult., *re* petrol or similar spirit for motors, we regret to say that the position regarding this article has not changed since you took this matter up two years ago. The Government regulations *re* the importation of same are so stringent that its importation in commercial quantities is practically impossible."

The Automobile Club Brake Trials.

By "FLANEUR."



MR. STANTON'S "LE CHAT NOIR."

THE CARS LINED UP.

Photo by]

FEEDING TIME—MR. EDMUNDS TO THE RESCUE.
TWO SNAPSHOTS OF CARS PERFORMING THE TEST.

[Mr. S. H. P. arce.

TO the list of successful demonstrations which the Automobile Club has organised from time to time must be added the brake trials in Welbeck Park, which took place on Saturday last. The Duke of Portland does not apply to the members of the Club the embargo which he was induced to place upon unattached automobilists by the inconsiderate

conduct of an individual, and no obstacle was placed in the way of the trials at one of the very few places in this country where they could be satisfactorily conducted. They were held, in fact, over the same piece of road, on the southern fringe of the Park, whereon the time tests were taken just before the close of the Thousand Miles Trial. One will always remember with interest

the performance of the Hon. C. S. Rolls's 12-h.p. Panhard on that occasion, and how remarkable the speed of forty-two miles an hour which he made on the downward course appeared to us at the time, though in the interim the achievement has been hopelessly eclipsed.

The object of the trials, of course, was to obtain evidence of a trustworthy character to be used when the Automobile Club presses its claims on the Legislature for an alteration of the law. Various opinions have been held and statements made as to the stopping capabilities of a motor-vehicle, but henceforth there can be no ambiguity on the subject, for the timing and measurements were officially taken, and a representative of the Local Government Board was also present in the person of Mr. Wilcocks. In every respect the trials were most systematically conducted, and actual and accurate records now take the place of speculative and hearsay evidence.

It is a far cry to Welbeck Park—over a hundred and fifty miles, indeed, by the Great North Road route—but this did not prevent the Club from making a tour of the event, once more emphasising the fact that automobilists are the only persons who can make long journeys on the road in winter—a fact, too, which hotel-keepers, at all events, should appreciate. Among those who left London on Thursday evening or Friday morning to dine with the Nottingham branch of the Automobile Club, and to witness the trials at Welbeck on the following morning, were Mr. Henry Edmunds on his 9-h.p. Daimler "Antrona"; Mr. Claude Johnson on his 7-h.p. New Orleans; Mr. C. Cordingley on his 9-h.p. Napier; Mr. J. S. Critchley on a new 8-h.p. Abeille; Mr. S. F. Edge on his 9-h.p. Napier; Mr. George Du Cros on his 12-h.p. Panhard; and Mr. C. L. Freeston on his 7-h.p. New Orleans. Mr. J. A. Holder drove a 7-h.p. Panhard from Birmingham; Mr. E. Reynolds an 8-h.p. Panhard from Sheffield; and several members of the Nottingham Club were also present with their cars.

The actual participants in the brake trials were as follows:—Mr. Oliver Stanton's 24-h.p. Daimler; Mr. Ernest Owers's 18-h.p. Daimler; Mr. Edmund Manville's 18-h.p. Daimler, driven by Mr. Bush; Mr. Walter G. Crombie's 18-h.p. Daimler; Mr. Edwin Midgley's 16-h.p. Napier; Mr. E. M. C. Instone's 12-h.p. Motor Manufacturing car; an 18-h.p. Daimler, driven by Mr. Lewis; Mr. C. Jarrott's 16-h.p. Panhard; Mr. C. Friswell's 8-h.p. Peugeot; Mr. J. W. Stocks's 4½-h.p. De Dion; and Mr. Letts's Locomobile, with Mr. Ginder driving. All these cars took part in the speed trials as well, with the addition of the 20-h.p. Panhard of the Hon. C. S. Rolls; the 20-h.p. Panhard of Mr. Mark Mayhew; and the 22-h.p. Daimler of Mr. J. R. Hargreaves.

The speed trials were first entered upon at eleven o'clock, and Mr. C. Friswell led the way with his Peugeot, Mr. Lyons Sampson taking the times at the initial tape, and Messrs. Bidlake and Swindley being at the far end of the course. The first speed tests were taken over the downward run, with a flying start in each case. Mr. Manville's big car came second, followed by Mr. Crombie, Mr. Owers, Mr. Jarrott, and Mr. Stanton. One noticed with interest that Mr. Owers had solid tires to his driving wheels and pneumatics on the front, after the fashion recently described by Mr. Wood in the *Notes and Notices* of the Automobile Club. These half-dozen cars were then driven again over the return course, also with flying starts from Cavendish Lodge.

Meanwhile everyone was inquiring where the remaining cars were, as it was known that several other intending competitors had left Nottingham that morning, and ploughed through the grease of the Mansfield Road. It was clear that they had not followed the official instructions, and instead of taking a turn to the right in Mansfield market place, and getting quickly on to the scene of the trials, they had presumptively gone straight forward in the direction of Worksop, and were meandering all over the Park, with the probability of their returning by the same route as was taken on the occasion of the Thousand Miles' Trial, when the cars approached the speed course from the north.

It was decided, therefore, to proceed with the brake trials, and the method of operation pursued was as follows:—Eighty-eight yards from the finishing tape, at each end of the mile course,

another tape was fixed, for the purpose of timing the cars over the final one-twentieth of a mile, and thus determining the speed at which they were travelling when the brakes came to be applied. The instructions were that this was to be done as the front wheels crossed the finishing line, and on coming to a stop the drivers, of course, waited while the measurements were taken, Colonel Crompton officiating as judge in this respect.

By the time the first half-dozen cars had completed their records the missing cars had turned up, nearly an hour and a half late, entering on the course, as had been anticipated, from the Cavendish Lodge end after a formidable detour. They were at once sent over the mile for the brake trials, so that the latter might be completed *en bloc*, the speed trials being deferred until all measurements were recorded. Of the stoppages generally, it may be said that those at the upper end of the mile were exceedingly good, while at the Cavendish Lodge end the results were less dramatic, for vital reasons. In the first place, the course was, as has been said, slightly downhill in the latter direction; in the second place the drivers went "all out," while on the return journey they endeavoured to comport themselves as if actually driving on the highway, with a certain amount of traffic to be reckoned with; and thirdly, the finishing point on the downhill course was perfectly wicked for the purpose, the surface being coated with thick grease. At the upper end the road was somewhat slimy, but less disconcertingly so than at Cavendish Lodge.

The spectators were chiefly clustered at the upper end, and were rewarded by some most excellent finishes. The first car up was Mr. Friswell's Peugeot. "Now for the exercise of muscular power," he cried as he approached the tape, and his front wheels had no sooner crossed than, lo! the back wheels skidded forward and were only two feet over the line when the car stopped dead in four yards. Then came Mr. Crombie's Daimler, which travelled much faster and pulled up less dramatically in consequence. The Locomobile followed, with a partially-detached band on the off front tire flopping weirdly, and gave a slight slew round as it came to a standstill. Mr. Instone pulled up in a few feet less space on the Motor Manufacturing "twelve-horse."

During the period of waiting for the next car up Mr. Friswell "obliged" the company with a comic interlude, in which a patient donkey in the adjoining meadow played a leading part. I cannot say whether this was the first occasion on which the driver of the Peugeot had ever essayed the *role* of Titania in the "Midsummer Night's Dream," but he certainly acted it to the life, and naturally the camera bearers were soon busy, a perfect fusillade of snapshots being fired at this unlooked-for *tableau vivant*.

This diversion over attention was again drawn to the brake trials, and the De Dion voiturette hove in sight. Warily went its driver, Mr. Stocks, for had he not applied his brakes when going at top speed at the other end, and swung his car round on the grease through the greater portion of a circle? This time the stop was accomplished without a sideslip. Then Mr. Lewis came along on his Daimler, followed by Mr. Manville's car, with which Mr. Bush made a splendid stop in 7 yards 4 inches, although the vehicle was going at a good pace. Still better was Mr. Stanton's pull-up, for his huge 24-h.p., Le Chat Noir, was grandly stopped in 6 yards 3 inches, amid involuntary applause. Bearing in mind that a considerable portion of this distance was occupied by the car's length itself it may be imagined what the optical effect of the stop amounted to, with the driving wheels nearly as close to the finishing tape as those of Mr. Friswell's car, a much lighter vehicle, of course. Mr. Owers followed in his Daimler; then came Mr. Midgley with the 16-h.p. Napier, and lastly Mr. Jarrott's 16-h.p. Panhard. All made good stops in proportion to the rate at which they travelled, but, of course, it is impossible to award the palm to any one car without knowing all the figures as to speed and weight, as well as the mere measurement of the stoppage. Meanwhile the spectators and competitors were verging on starvation, for it was something like six hours since they had breakfasted, and the raw air on that exposed site had sharpened their appetites just as much as the damp earth had chilled their marrow. But one noble spirit had risen to the occasion. No one

had noticed that Mr. Edmunds's car had left the Park, but the attention of the little crowd was suddenly diverted to the fact that he was back near the finishing line, and handing out bottles and comestibles, to all comers. Whisky, beer, and mineral waters were distributed with lavish hospitality, and the still more welcome sight of huge Melton Mowbray pies issuing from "Antrona's" capacious well met the eyes of the famishing *chauffeurs*. Time-keepers and journalists were loth to leave their posts, but that old campaigner, Colonel Crompton, came along bearing the half of an enormous pie which he had "commandeered," and shared forthwith with his fellow-officials. It seems that Mr. Edmunds had driven into Mansfield, and there laid in his generous store, and the relief was indeed welcome, for though we had all expected to be back at Nottingham for a very late lunch, owing to the length of the trials and the distance out and home, forty miles in all, we had not bargained for the long delay caused by the late arrivals on the scene. It will be a long time before any of those present cease to meet Mr. Edmunds or his car without warm recollections of his opportune and kindly services.

It now remained to complete the speed trials, and the late-comers made their double courses. Mr. Midgley's Napier went first, at a fine pace, and then Mr. J. R. Hargreaves turned out on his handsome new 22 h.p. Daimler, with a body somewhat similar in finish to his previous car. At the starting tape he had only got on to his second speed, the car being very highly geared, and as a matter of fact the fourth was never used, either on the upward or downward run. Mr. Stanton's car was next driven down, but steered this time by Mr. Bush, and Mr. Instone followed, his M.M.C. 12 h.p. going excellently for the power named.

Then a warning toot of a horn caused everyone to look up the approach, and Mr. Rolls's Panhard came sweeping on, and passed at a rousing pace, which was obviously in excess of anything that had preceded it. He had taken a long start, and incidentally passed between a standing car and a too venturesome photographer, who, though he had been warned beforehand, would persist in placing his camera too close to the road. When the big Panhard hurled by, the camera man retired precipitately backwards, and nearly turned head over heels into the hedge bottom.

After the meteoric flight of Mr. Rolls's Panhard it was supposed that the *piece de resistance* of the meet had been passed, but there was a mild surprise in store. The De Dion voiturette bustled over its speed mile, making more noise than all the other cars put together, and then an unfamiliar car, of orange hue, was seen approaching. It travelled, too, at a prodigious pace, and all of us wondered whose and what it was. As it neared the starting line, however, the driver's face was recognised, and shouts of "Mayhew!" rent the air. The car was his 20 h.p. Panhard, previously known to many with a racing body, but now fitted with a *tonneau* and touring rig generally. As the car flew down the course the prevalent impression was that it went faster than that of Mr. Rolls, but on this point I ventured to have my doubts, because there was so much more artificially suggestive of high speed in the yellow car than the other. For one thing, the *tonneau* was rocking considerably, whereas Mr. Rolls's car was entirely stripped; the latter, too, made rather less noise. Altogether, I thought it a very even thing, and, if any difference at all existed, I imagined Mr. Mayhew's car to be the slower, and such actually proved to be the case by about a second.

And this brings me to the interesting topic of speed judgment. I went prepared to make estimates of the pace of all the cars, and equally prepared to find myself wrong in many cases; in fact, the more mistakes I made the better I should have been pleased, for if an automobilist himself could not gauge the time how could a pedestrian or policeman, with no knowledge of technique, be likely to guess anywhere near the mark? Now, the most curious thing proved by the actual results is that it was easier to guess the pace of the fastest cars on the flying mile than that of the slower cars, or of any of the cars when travelling below their top speed as they crossed the tape in the brake trials. Most excellent estimates, for example, were made by Colonel Crompton

and Mr. Bidlake, who stood near me, as to the speed of one of the 20 h.p. Panhards, in one case the speed being appraised a fraction too high, and in the other a shade too low. My own guess, too, happened to be fairly close, but I found it difficult in the extreme to gauge the pace of cars of various weights and sizes when crossing the line in the brake trials, at from fourteen to twenty miles an hour.

On the return journey most of the cars travelled pretty much as they went down, but rather slower, of course, owing to the slight gradient, save that the 16 h.p. Napier of Mr. Midgley seemed much below her form. As regards the duel between the two fast Panhards, the pace of Mr. Mayhew's was undoubtedly the faster this time, though too little allowance was again made by some for the artificial factors above mentioned and the difference in the drivers' respective styles. The actual difference in the speed of the cars was three miles an hour in favour of Mr. Mayhew.

It was now verging on three o'clock, and a hasty exit from the Park was made, and Nottingham and a much needed lunch were aimed for. Later in the day the cars which had come from the south made for Grantham, over a winding, greasy road that made fast travelling no sinecure. Next day the homeward run was made to London, and some excellent journeys were made for the most part. Police aggressiveness made itself felt, however, at Stilton, Alconbury, and Hitchin, and in every case without cause, the police being stationed at points where no possible danger to the public could exist, even round Mr. Justice Darling's hypothetical corner, for no corners existed where the police were timing. It was simply a case of getting convictions, if possible.

The roads were very greasy for the most part, and where not greasy were covered with enormously long patches of loose stones in every county alike. Steam-rolling appeared to be quite unknown on the road which above all others is usually regarded as a well-kept highway. Presumably the responsible authorities think that no one is travelling at this time of year, and neglect their duties as a consequence, but they will have the automobilist to reckon with in tremendous numbers ere very long, and will need to mind their P's and Q's. The haphazard way in which the loose metal was thrown about was nothing short of disgusting, and the resources of civilisation seemed wholly at a discount.

What the Automobile Club will do with the figures obtained in the various tests remains to be seen. The chief features of regret were, firstly, the necessity of holding the trials at this time of year, in view of the coming session of Parliament, but with roads greasy and quite unsuitable for quick arrestation; and, secondly, the absence in the brake trials of cars of medium power, such as constitute the major portion of those in use upon the streets and roads at the present moment or likely to be in use for many a long day to come. All but the 8 h.p. Peugeot, the $4\frac{1}{2}$ h.p. De Dion, and the Locomobile were distinctly powerful cars, and in not the remotest sense representative of the automobilism of this country.

[LATER.

It is not proposed, I may now add, by the Automobile Club to publish every record made by the various cars, but the following average statements will be made:—The results showed that at the undermentioned speeds the cars could be stopped on an average in the following number of lengths—a length for this purpose being calculated to be 11 ft. 8 ins., as that is the average length of the cars engaged in the trials:—

- From 11 to 14 miles per hour in $1\frac{1}{2}$ times the car's length.
- From 15 to 17 miles per hour in twice the car's length.
- From 18 to 20 miles per hour in $2\frac{1}{2}$ times the car's length.
- From 20 to 24 miles per hour in $3\frac{1}{2}$ times the car's length.

It must be observed that these figures are averages. As a matter of fact one car travelling at 13 miles per hour was stopped in 4 yards; another travelling at $18\frac{1}{2}$ miles per hour was stopped in 7 yards, and another when going at 90 miles per hour was stopped in $12\frac{1}{2}$ yards. The average weight of the vehicles without passengers was 1 ton 4 cwt. From these results it will be seen that motor-cars can, on an average, be stopped when travelling at 20 miles an hour in less distance than the ordinary horse-drawn vehicle could be stopped when travelling at 10 miles per hour.

THE NOTTINGHAM AND DISTRICT AUTOMOBILE CLUB.



A LARGE gathering of motorists attended the second annual dinner of the Nottingham and District Automobile Club, at the George Hotel, Nottingham, on Friday evening last week. After the Royal toasts had been duly honoured, Mr. E. W. Wells proposed "The Parent Club," coupled with the name of Mr. Roger Wallace, K.C. They were pleased to know that the parent club was still legislating for the benefit of motorists, and that the Nottingham Club was affiliated with it, and had a voice in its meetings. Mr. Roger Wallace, K.C., responded. He was pleased to find that so many motorists from the parent club had been able to arrive, but regretted that some had been delayed on the road. Having complimented the County Surveyor upon the good roads in the district, Mr. Wallace went on to speak of the necessity for a central club, to impress upon the authorities the importance of the fact that motorists' privileges should not be restricted, and to obtain, if possible, further concessions. They wanted further facilities, and everything the parent club could do it would do to promote the welfare of automobilism. They had succeeded in doing a great deal, but fresh opposition was continually breaking out as the movement became more important. The affiliated clubs were more of a necessity than the parent club, because they could keep their eyes upon the members throughout their respective districts. In the Nottingham district a club was wanted, so that there might be somebody to look after those who had cars in the district, and those who might be travelling through the locality, and really to set a good tone and good manners to automobilists who came into the neighbourhood. They had one instance in reference to Welbeck Abbey, although they did not know who was responsible for it. At one time motor-cars could be driven through the grounds of Welbeck in the same way as ordinary carriages, but now they could not be. How did that come about? Like a great many restrictions imposed upon them, and disabilities under which they suffered, it was their own fault. The affiliated clubs would do a great good in trying to impress upon all members the necessity of doing what was right. The Chairman, Mr. R. Millington Knowles, J.P., submitted "The Nottingham and District Club." He said the club, which was celebrating its second anniversary, had been formed with several objects, one being in order to have an organisation which was able to offer hospitality to the parent club and other clubs interested in automobilism. Another object was that anyone wanting advice on the subject of automobilism might apply to the committee, and get information as to the cost of cars, repairs, and other matters. The club impressed upon its members the necessity, so far as possible, of complying with the law for the time being in everything connected with the driving of a motor-car. He did not say that some of them did not sometimes exceed the limit, but it was important that in going through villages they should behave properly and with due regard to other people who had an equal right to the road with themselves. As regards the condition of the roads, he believed that in the report of the 1,000-miles trial it was stated that in Nottinghamshire were the best roads on the route. He was pleased with that, because the roads were under the management of the County Council of which he had been a member from the beginning. That, however, was certainly due to their able and skilful County Surveyor, who, he believed, had been called in to advise as to the roads in the neighbouring county of Lincolnshire. Mr. A. R. Atkey, in reply, referred to the progress which the movement generally, and the Nottingham club in particular, had made. It was little more than twelve months since the club was formed, and subsequent events had fully justified the step then taken. He hoped the amicable relations between the authorities and automobilists in Nottingham would long continue.

Colonel L. L. Powell gave "The Visitors." Mr. T. W. Staplee Firth first responded. Motor-cars, he said, had come

to stay, in spite of the decision of the Lord Chief Justice that automobilists might be driving along a road to the danger of the public when there were no passengers there. That decision was against all legal precedents and the rules of logic and common sense, and the Lord Chief Justice might just as well try to stop the spread of the movement as King Canute tried to stop the waters of the sea. The tide had set in, and would not be stemmed, and motor-cars would become a great power in the land. Mr. S. F. Edge also replied, and in the course of his remarks spoke of the reliability of motor-cars, and complimented Nottinghamshire upon the excellent state of its roads.

Mr. C. E. W. Lucas gave "The Chairman," and, in doing so, referred to recent prosecutions of motorists in Lincolnshire, describing the ways of the Lincolnshire police as peculiar as those of Bret Harte's "Heathen Chinee," and warning members not to rely upon their timekeeping. The toast was enthusiastically received, and that of "The Press" was also honoured, on the proposition of Mr. M. R. Browne.



It has been decided by the Long Island Automobile Club to hold a second 100-mile endurance test on similar lines to the one so successfully carried through last April. The date has not yet been selected, but the event will take place early in May, or about two weeks later than last year.

A COMPANY has been formed in Germany to establish a motor-'bus line between Cologne-Wesseling and Cologne-Brühl, Pingsdorf, Bruhl, Wesseling. De Dietrich motor-omnibuses will be used. The seating capacity is twelve inside and two on the operator's seat. To avoid accidents, the door of the 'bus, when the latter is in motion, can be opened and closed only with the assistance of the driver from the seat.

M. G. NATHAN, of 27, Rue St. Sabin, Paris, has sent us an illustrated catalogue of motor-clothing for ladies and gentlemen which we commend to those who affect the *mode Parisien*. Leather and kid, lined and otherwise, to suit all climates, are the main components, though cloth is not tabooed. One garment, certainly new to this country, takes the form of loose knickers elongated into gaiters that come well over the foot.

A NEW steerable balloon, invented by M. Mawhood, of Antwerp, is attracting considerable attention in Belgium, and is to be examined by military experts. The balloon has the form of a cigar, in the interior of which is a central horizontal aluminium tube containing a propeller with eight blades, and communicating with the engine, which is situated directly under the basket. A rudder is placed at the extremity of the central tube.

AN electric trolley omnibus service has recently been started by Messrs. Siemens and Halske, of Berlin. The line is nearly twelve kilometres long, and extends through the valley of Biela-bach, from the village known as Königstein to Hütten and Königsbrunn. In passing another electric 'bus it is of course necessary to remove the trolley poles, while in passing other vehicles it is only necessary to steer to one side, as the poles are of sufficient length to allow a side movement of three metres from the trolley line. The controller is similar to that used for electric tram-cars of small size. A speed of $7\frac{1}{2}$ miles per hour is usually maintained, and the vehicles will hold twenty-one passengers.

THE Automobile Club of America, through its Law Committee, has petitioned the Acting Commissioner of Customs at Ottawa, Canada, to admit automobiles in use free into the Dominion for the purposes of touring, provided the owner files with the Collector of Customs a certificate of membership in a recognised association or club, and gives his name, residence, the duration of his trip, description and value of machine, and place through which his return will be made. An effort will also be made to obtain a reciprocal measure from the Treasury Department of the United States. At present, automobilists on the borders of the two countries are required to pay duty in full and take receipts therefor, redeemable on their return with their vehicles.

MECHANICAL FLIGHT UP-TO-DATE.

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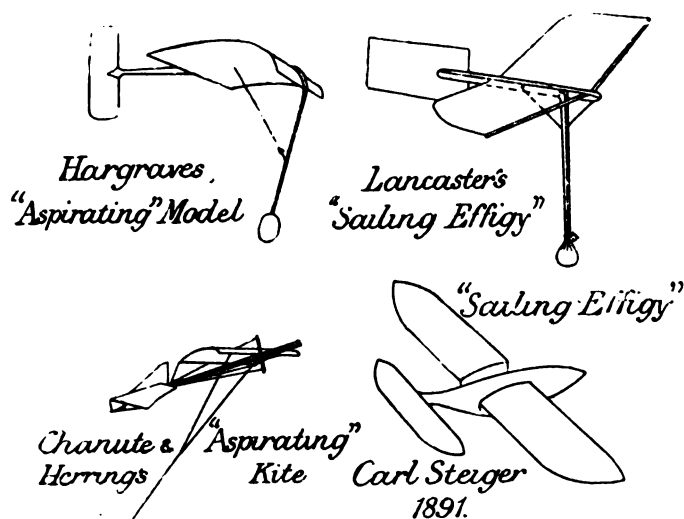
BY SIDNEY H. HOLLANDS.



II.—RATIONAL EXPERIMENTS.

THERE is one notable phenomenon in birds' flight that must be touched upon here—viz., that of "aspiration." This—which has been noticed with astonishment, and proved beyond doubt by more than one observant experimenter—consists in the fact of a bird being held against a wind, even more, actually urged forward against a head wind, by the action of that same wind on its wing-curves; so that there is not only the elimination of all resistance to the bird's forward motion, but there is actually negative resistance with many birds. This sounds paradoxical, and savours of "perpetual motion"; nevertheless, it is neither, and we must now accept it as an absolute fact.

Contrary to all preconceived notions, and, indeed, to all



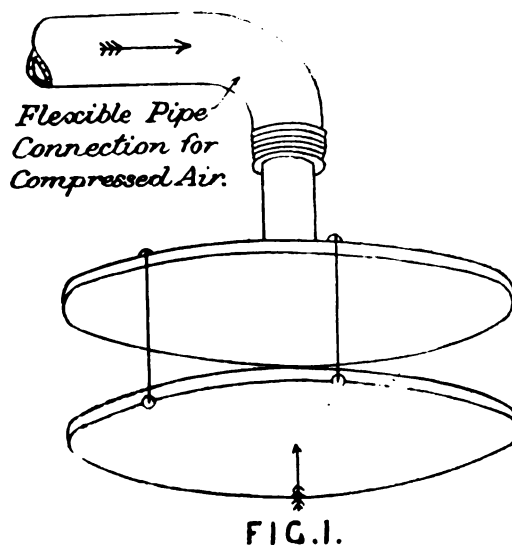
previous experience of locomotion by land or by water, as well as in balloon propulsion, it has now been demonstrated beyond doubt that, given suitable sustaining and propelling surfaces, the necessary power for flight positively *decreases* with the speed. The astounding aerial feats of some birds are no longer inexplicable. To quote Mr. Lancaster, of Chicago—a keen observer—"I have succeeded in establishing to my own satisfaction these propositions" (quoted later on), he continues:—"Throwing the observed facts into a mechanical statement, they assume this form, viz., that a given weight, distributed in a nucleus flanked by flat surfaces, the whole in the shape (and weight) of a sailing bird, may be sustained in free air by means of some relation existing between itself and the atmosphere independently of any motive power exerted by itself."

Mr. H. Middleton, in a lecture on Flight, before the British Aeronautical Society, said:—"A curious property has been shown to be possessed by the curved surface (of wings), namely, that it is urged toward the direction its convexity is turned by a current of air directed against its edge, and moreover, if held in exactly the proper position, it will even move forward against the current." A demonstration was then given to illustrate this—to all appearance—paradoxical action. The apparatus consisted of two flat wooden discs of about 9 in. diameter and $\frac{5}{8}$ in. thick (Fig. 1), one of which had a central hole, fitted with a piece of tube of about $\frac{3}{4}$ in. bore, squarely and flush on one side. The other disc was suspended from the tube disc, and parallel to it, about $2\frac{1}{2}$ in. below, by three or four threads. When the discs were suspended horizontally, and a blast of compressed air was sent down through the tube, the hanging disc actually jumped up against the jet of wind, as if the upper disc had suddenly become magnetic, and "hugged" the upper disc as long as the blast was on, dropping off as soon as it was stopped. Two experiments which will further illustrate this remarkable wing-

and-wind action are as follow:—(1) A curved plate (Fig. 2), either suspended by a cord from C, or fixed to a pivoted arm free to move in a horizontal plane, will, on being impinged upon by an air-blast, B, actually move back towards B against the wind. (2) If a conical or bell-mouthed hole be made in a board or partition (Fig. 3), and a lighted candle be placed on the bell-mouth side, two or three inches off, while one blows through the hole from the other side, the flame will approach the orifice.

Under ordinary conditions, wind pressure (or conversely the resistance to motion through the air) is commonly held to increase as the square of the velocity (as in water)—which is true within somewhat wide limits, but it has been found that this simple law does not hold good for very high velocities. Thus, at 1,000 feet per second it is found to be as great as three times the square of the velocity, giving the enormous pressure of 20,952 lbs. per sq. foot, hence the startling statement by Professor Langley: "The air is a solid if you only hit it hard enough." Quite probably it is to this astounding property of air at great velocities that the apparently anomalous action of high explosives is due. These are quite commonly said to act in the direction of *greatest* resistance; that is obviously absurd. The true explanation would seem to be that the tremendously sudden and forcible generation and expansion of gas on the explosion of nitro-glycerine, etc., renders the air a more solid and unyielding abutment than the stone wall, door, etc., against which it is simply laid, and demolishes the solid, with only the free atmosphere to re-act against. Unquestionably these explosives, like all other forces, act in the direction of *least* resistance; but, rather naturally, many find it hard to believe that the gentle zephyr can be so transformed as to hold its own against a massive stone wall or an iron door.

An overweening care for steering largely prevails; this is characteristic of the "tadpole" stage of development in devotees to mechanical flight. An experienced balloonist has related that he has caused a large balloon to rotate by merely fanning himself while sitting in the car; so easy a matter is it for a body to turn or vary its course while sustained in air. In further illustration of this, Mr. George B. Starkweather, of Washington, thus describes the following curious experiment he made:—"The apparatus used was an average child, who was duly instructed to stand erect and rigid; it was then lifted off the ground by the operator, and thrown vertically a few feet up into the air, being told to turn if possible when in mid-air. We are told that



the child succeeded in doing this—either to right or left as requested—rotating without consciously or perceptibly moving a muscle, the act being apparently one of mere volition.

Propulsion—with consequent sustentation—with a safe degree of stability being at last fully mastered, it is certain that steering will give no trouble, and provision for it is quite a subordinate matter. Sir Frederick Bramwell said (in 1888):—

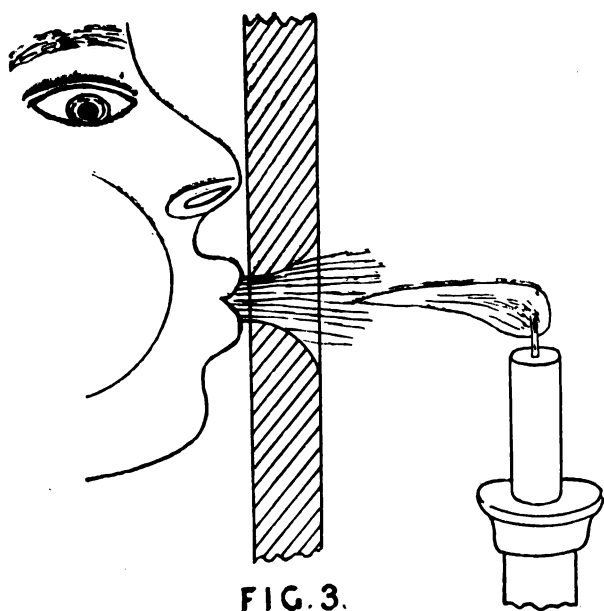
"The problem of travelling in the air will certainly be solved when a sufficiently light motor is attained." Recent experience has taught us that it does not wholly depend on that desideratum, but largely on a better understanding of the imperative conditions of true flight, whether natural or artificial. For true mechanical flight we have now all the lightness of motor we want: it is only the balloonists who need to go on lightening indefinitely.

Passive flight—the phenomena of which we may now be said to have fairly well mastered—will, when successfully adopted, reduce the necessary motor-power to a minimum. For this very valuable insight our best thanks are due to Lilienthal, Le Bris, Pilcher, Chanute, Lancaster, and Professors Langley and Pettigrew. It is written in Dr. Carpenter's "Animal Physiology," "The problem of human flight will never be solved until some source of power is discovered far surpassing that which man's muscular strength affords, and so portable in its nature as not materially to add to his weight."

So Dr. Carpenter, in common with Sir F. Bramwell, seemingly did not realise that something more was wanted. Herr Lilienthal (Berlin) wrote, in his article "Weshalb ist es so



schwierig das Fliegen zu erfinden?" ("Why is it so difficult to learn to fly?"), referring to the imitation of natural flight:—"The thing has still to be developed from the beginning. The difficulties to be eliminated are of a purely practical nature, but they are greater than at first appears. They should be made a special study of, and we should invent methods to investigate them in order to successfully overcome them. The method which is to lead to practical flight must be capable of development, be its beginnings ever so primitive; and by it we



must be afforded an opportunity of really skimming through the air, by which we may gain experience as to the stability of flight, the action of the wind, and safe landing, in order, by continual development, to gradually approach permanent free flight. Whether the imitation of natural flight is one way of many, or the only way, is to-day (1894) still matter of discussion."

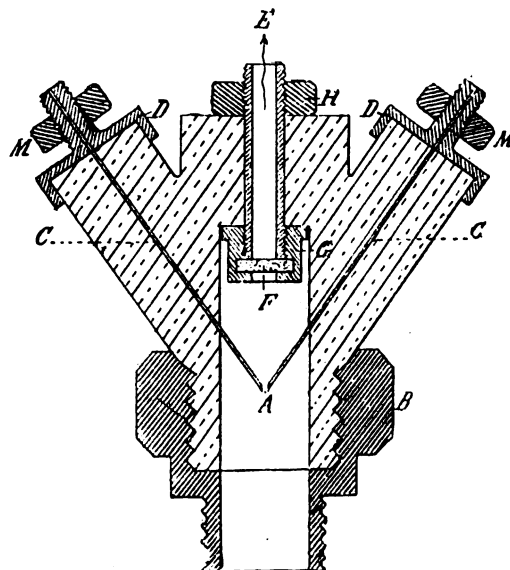
Given a practicable machine, it can hardly be expected that flying will be other than an acquired art, and to be learnt equally with cycling, skating, or swimming. The experiences of at least three well-known authorities are practically in accord with those

of Herr Lilienthal, viz., Messrs. Chanute, Lancaster, and the late Mr. Percy Pilcher. Mr. Chanute has well remarked:—"There are probably scores of shapes which can be made available for such machines, just as there are hundreds of forms of birds which display various peculiarities in their flight; but in every case there will be the same requirements as to a light motor, absolutely automatic stability, and some device for gaining initial velocity, as well as for landing safely; this will require much experimenting." Referring to the valuable "cellular kite" experiments of Mr. Hargrave, that gentleman says:—"As few experimenters can afford to lay a rail track of sufficient length to properly try a flying machine, I thought it would be well-spent time if I not only devised but made and went up on a series of kites that could be converted into a flying machine by adding a motor. Or the kites to be merely used as a means of safely lifting a flying machine from the ground, trying it, and, if it flew, slipping the moorings, as it were, and flying free, and finally picking up the kite line and descending without risk. . . . One thing about these cellular kites is worth special mention: they are perfectly stable and certain in their action. . . . A safe means of ascent . . . is now at the service of any experimenter who wishes to use it."

(To be continued.)

A NOVEL SPARKING PLUG.

IN a recent issue we stated that an Italian engineer had devised a novel form of sparking plug. We are now able to give a sectional illustration of the arrangement. It will be seen that the plug comprises two insulated platinum rods, which make an angle of about 60 deg. with each other. Centrally over the sparking gap is a window which permits the spark to be



observed when the motor is in operation. The window consists of a transparent material of great resistance, so that it is able to withstand any pressure. The inventor of the arrangement is Signor G. Adami, of Messrs. Adami and Company, Florence.

THE Metropolitan Fire Brigade is at present carrying out extensive experiments with petroleum as fuel in place of coal. The experiments are only in their initial stages, but already several steamers and floats have been fitted with petroleum furnaces. The questions to be decided are whether the new fuel is more economical, whether it can produce steam more quickly, and also as to whether it is of advantage in the matter of general utility. So far as the tests have gone it has been proved that by the greater heat developed from petroleum, steam can be generated much more expeditiously.

The Chaboche Steam Delivery Van.

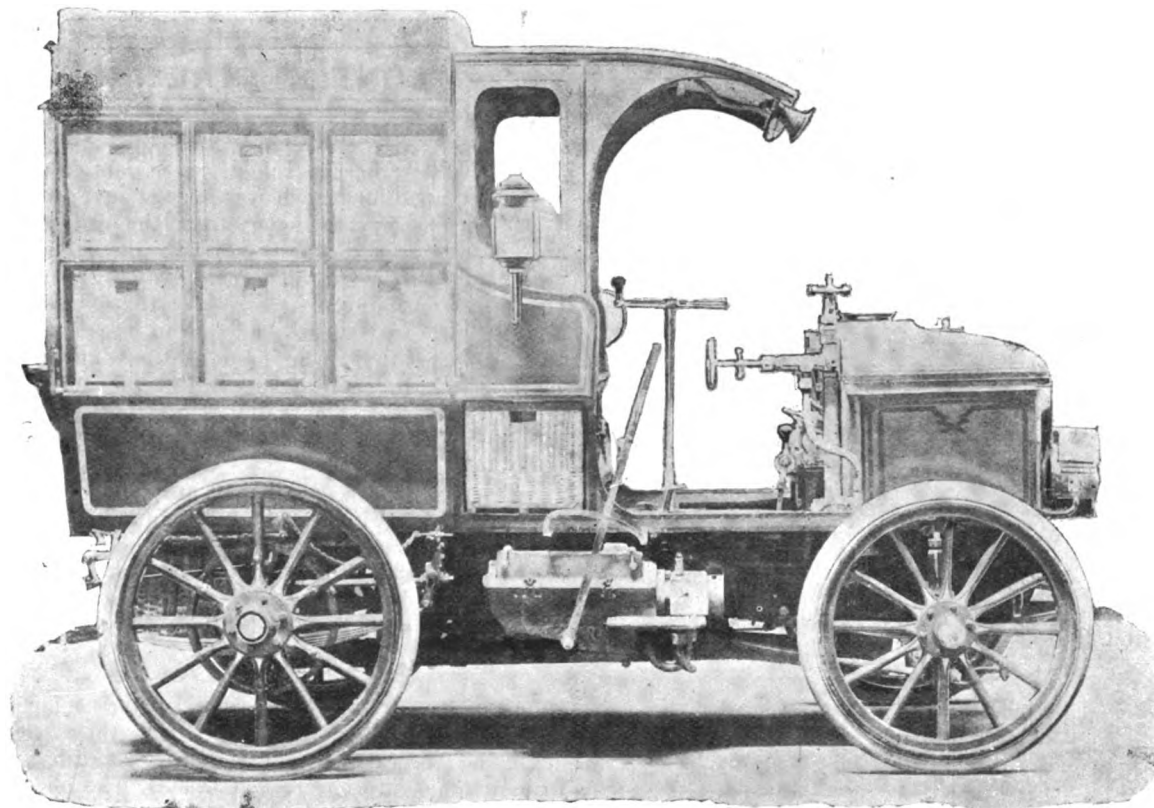


FIG. 1.—GENERAL VIEW OF VAN.

THE accompanying illustrations depict a new steam van, which has lately been completed by M. E. Chaboche, of Rue Rodier, Paris, and which comprises several interesting features. The frame of the car is built of channel steel, and is supported on the axles by plate springs. The general arrangement of the boiler, engine, and transmission gear is clearly shown in the plan view (Fig. 3). To deal first with the boiler, which is located in the fore-part of the frame, this is of the instantaneous vaporising type; it is composed of two concentric shells constituting the steam area, the inside shell enclosing coils of steel tubes of circular section. Care has been taken to construct the boiler with as few joints as possible, and the maker guarantees that they will withstand a pressure of fifty atmospheres. The boiler is fed from a *bouteille alimentaire* or special reservoir having a capacity of 20 litres. This reservoir is half filled with water, the remainder containing compressed air at the pressure at which the generator is required to work. The pressure in the reservoir can be varied between 15 and 30 kilogs. per square centimetre by means of a regulator placed under the seat of the driver. Thus, at ordinary pressures, the boiler can be fed from the reservoir without the intervention of the plunger pump, but this is used when it is necessary to get higher pressures in the generator. One of the advantages claimed for this system is that when the car is at a standstill there need be no pressure in the boiler, and it can be started without it being necessary to use a hand pump, because the pressure in the reservoir will allow of an equal pressure being attained in the generator. The car may be left to itself for several hours by taking care to replenish the fuel from time to time, and it can then be got ready for starting in five minutes. The fuel used is coal, which is prepared in paper bags containing about eleven pounds, one of which is dropped into the furnace at a time. The steam exhaust is carried away by a pipe underneath. When the car is starting, or the boiler is working at a high pressure in

order to overcome any special resistance, there is a small volume of exhaust, but under ordinary conditions there is little or no exhaust observable. The generator is flanked on each side by coal boxes carrying enough fuel to allow of the car running about sixty miles, this being the distance it is capable of covering at a speed of from nine to twelve miles an hour in Paris and nineteen miles on good country roads.

There are two reversing engines, one on each side of the frame, they are both of the same dimensions and collectively develop about 10 h.p. The crank chambers work in oil-containing chambers; while the valve gear is operated by means of a hand lever at the side of the driver. The engine shaft carries a central sprocket wheel, connected by a chain with the differential on the rear driving axle. This axle has a universal joint in the centre, that is to say, in the case containing the differential (see Fig. 2),

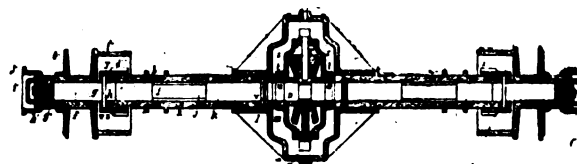


FIG. 2.—THE CHABOCHE REAR AXLE.

and both parts can be easily drawn out, so that the differential can be examined when required. The engine can be thrown in and out of gear with the transmission mechanism by means of a clutch to permit of the motor running when the car is at a standstill, and thus work the plunger pump to raise the pressure in the generator when it is necessary to overcome any great resistance at starting. The pedal-operated band brakes on the rear wheel hubs are double acting, and restrain any backward movement of the car, the brakes being operated both ways by the same pedal.

The driving of the car appears to be very simple. The driver has at his left hand the steering lever, and the lever for regulating the admission of steam to the cylinders, and the reversing lever at his right. With his right foot he operates the brake, and with his left the blowing out of any deposit of water in the cylinders. The car is usually stopped by closing the regulator admitting water to the boiler. This regulator consists of a small hand wheel immediately in front of the driver, with a long rod which opens or closes the pipe communicating with the reservoir. Above this are the safety valves. To the left of the driver are the feed pump and the rotary lubricator,

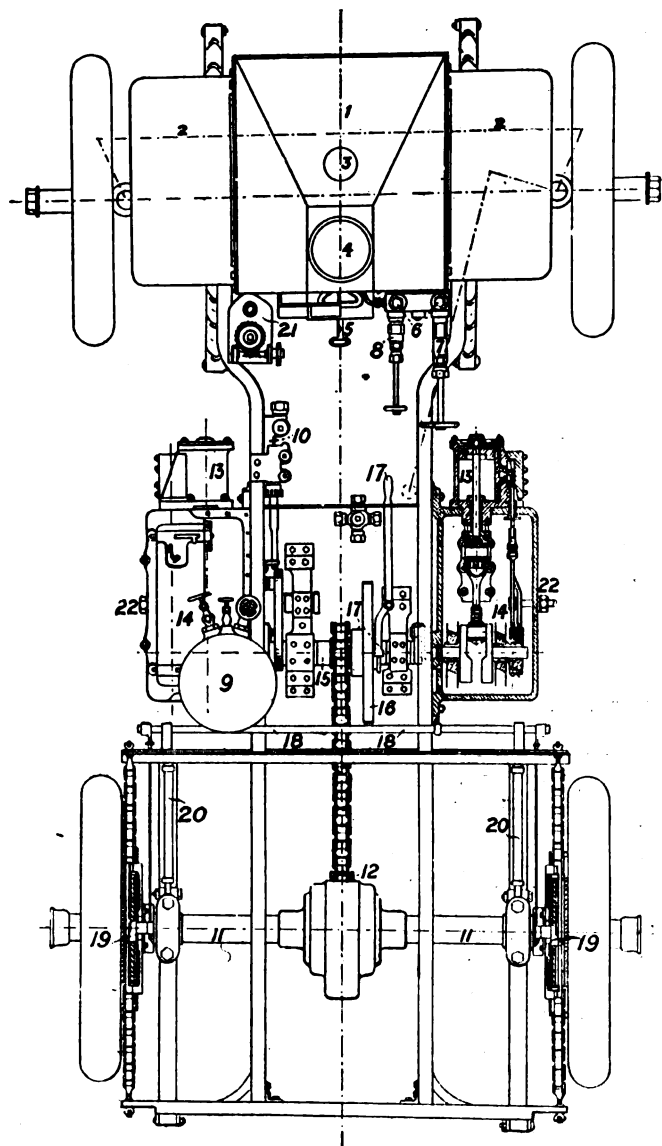


FIG. 3.—PLAN OF CHABOCHE STEAM VAN.

- | | | |
|-----------------------|------------------------|---------------------------|
| 1. Boiler. | 9. Reservoir. | 17. Friction clutch. |
| 2. Coal bunkers. | 10. Feed Pump. | 18. Rod connecting brakes |
| 3. Draught door. | 11. Rear axle. | on driving wheels. |
| 4. Furnace door. | 12. Differential gear. | 19. Brake drums. |
| 5. Draught regulator. | 13. Engine cylinders. | 20. Chain stays and ad- |
| 6. Safety valves. | 14. Crank cases. | justers. |
| 7. Regulator. | 15. Driving shaft. | 21. Cylinder lubricator. |
| 8. Blow-off cock. | 16. Flywheel. | 22. Reversing lever. |

which feeds the exact quantity required to the cylinders, so that this important part of the mechanism requires little or no attention.

The front wheels are 36ins. diameter, and those at the rear 40ins., all being shod with solid rubber tires. The water tanks are situated underneath the seats of the van, and have a capacity of 230 litres, which is sufficient for a run of twenty-five miles. The generator will vaporise from 5.5 to 6 kilos. of water per kilog. of coal, and the consumption of fuel is from 600 grammes to one kilog. per kilometric ton. The consumption of lubricating oil is two litres per 100 kilos. The total weight of the van,

including coal and water, is given as about 2 tons 8 cwt., while it can carry a load of from 12 to 20 cwt. During the last delivery van competition of the French Automobile Club in Paris, a van of this type took gradients of from 14 to 15 per cent. at a high speed, and covered twenty miles in two hours. M. Chaboche is also constructing passenger vehicles on the same lines.

CONTINENTAL NOTES.

BY "AUTOMAN."

A FEW weeks ago I told the readers of the *Journal* of a competition which was on foot in France, the object of which was to demonstrate the value of motor-cars in time of war as a means of carrying despatches, and generally facilitating staff work. The competition is being organised by *La Locomotion*, and it has received the official approval of the Minister of War, General André, who has caused a letter to this effect to be written in his name to the editor of *La Locomotion*. The basis of the competition will be the carrying of despatches between different points on the frontier and Paris; also between the headquarters of various army corps.

THERE is a perfect deluge of automobile competitions at the present time, and if one half of them are carried out 1902 will be a busy year for the *chauffeurs* in France. The reason of these many competitions is that each automobile paper organises events for which it obtains the sanction and patronage of the A.C.F., at the same time relieving the Club of much work which would otherwise fall to its lot.

ON January 16th there will be a race for motor-tricycles carrying goods, or "tri-porteurs" as they are called, which might be very easily rendered into English as "tripesters" without offence to our Scotch friends, who object to the use of French words in connection with motoring. This novel competition is being organised by the *Auto-Velo*. There are to be two classes—(1) the open class; (2) the commercial class. Each "tripester" must carry in his box a sack of sand weighing a little over 88 lbs. The race will be from Paris to Versailles and back, twenty-one miles.

ON February 6th will take place a competition called the "Criterium de Consommation," likewise organised by the *Auto-Velo*. The distance to be covered by the automobile carriages is sixty-two miles, whilst for the heavy traction cars it is only thirty-seven miles. There are to be seven classes;—(1) Heavy carriages over one ton; (2) carriages between 12½ cwt. and one ton; (3) light carriages between 7½ cwt. and 12½ cwt.; (4) voitures between 4½ cwt. and 7½ cwt.; (5) motor-cycles up to 4½ cwt.; (6) motor-bicycles up to ¾ cwt.; (7) heavy traction cars carrying at least half a ton load. Medals will be awarded for the smallest consumption of fuel. The entries already include Mors, Charron, Darraq, Bardon, Boyer, Hurtu, Buchet, Clemont, Gillet-Forrest, etc.

La France Automobile is organising an important heavy traction competition of an ambitious nature. The course is to be from Paris to Monte Carlo, 697 miles, *viâ* Versailles, Anderre, Dijon, Lyons, Avignon, Marseilles, Toulon, Hyères, Fréjus, and Nice, finishing by the climb of the famous "La Turbie" hill. There will be classes for delivery wagons carrying half a ton, lorries carrying a ton, and omnibuses carrying from eight to twelve passengers. The arrival at Nice is timed to take place on April 7th, when the Nice races begin.

NOTHING is definitely fixed yet about the big event for Nice, but the *Auto-Velo* proposes the organisation of a race to Abbazia and back, 1,054 miles, and backs the suggestion with an offer of 30,000 francs in prizes. The race would take seven days, from April 2nd to 9th, with three days off, the 5th and 6th, for a

nautical fête at Fiume, and the 7th for a fête at Abbazia, where many crowned heads are expected to be. It, therefore, represents about 240 miles per day for five days, which should be easy running even on Italian roads. A special train will follow the cars.

I WAS just now writing "sarcastic" of the opposition to the use of French words in connection with automobilism, but there are certainly precedents in French, and it really serves us right to have these words pushed on us, for they come from the head centre of the industry. In times gone by when England was the head centre of the railway industry it was the other way about, and even yet the English words still hold the field in France. *Chemin de fer* is, of course, a translation for the "iron road," but the "rails" still exist under that name, and likewise the "tickets," "station," and many other terms. On the turf, of course, everything is English, including "starter," "jockey," "mail coach," "groom," "stand," etc. So after all the French are only having a very natural revenge.

FOURNIER came back from America on the "Kronprinz," and landed at Cherbourg at the end of last week. He is thoroughly Americanised, and has been "hob-nobbing" with the richest in the land, but has kept an eye to the main chance. He had not been twenty-four hours in Paris before he had sold a car to one of the Armours, of Chicago, who was amongst the passengers on the "Kronprinz." He has not, however, changed since the last time I saw him at the Opera House in Berlin, on the gala night after his brilliant victory. Fournier is still the same polite and amiable fellow without any affectation. All the world knows, of course, that he is now at the head of a big American concern which will manufacture motor-cars in the neighbourhood of Philadelphia, and which will soon bid fair to compete with the world in the automobile trade. Fournier is over on a visit, and sails again very shortly to America. He is vice-president of the American company, which will be called the Fournier Automobile Company, and not the Fournier-Searchmont Automobile Company as has been commonly reported. The new company will take over the works of the Searchmont Automobile Company.

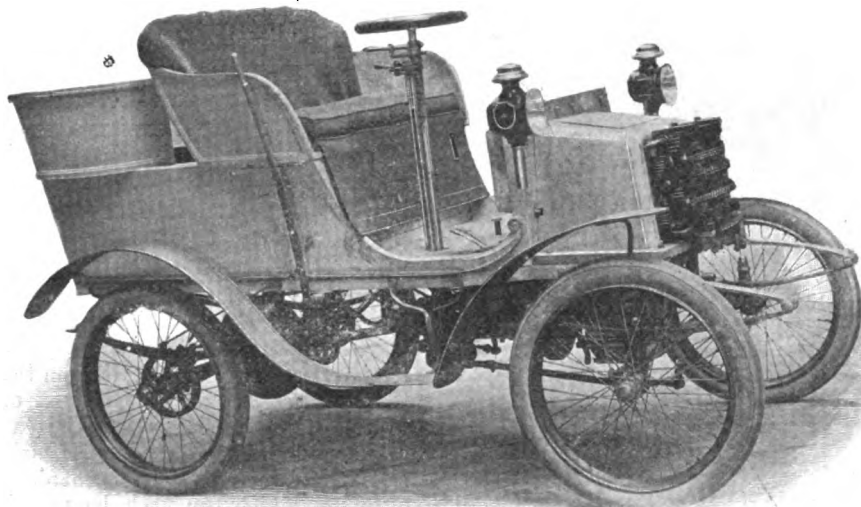
AN apparatus for measuring the intensity of the explosions in the cylinders of internal combustion and explosion engines is being tested at several of the automobile factories, notably at the works of De Dion-Bouton, at Puteaux. It is the invention of a Belgian named Mathot, and is, so to speak, an indicator for explosion engines similar to the indicator for steam-engines. Fixed to a cock in the explosion chamber it has a clock-work movement which unrolls a paper strip, on which the pressure in the cylinder is registered. A diagram is produced by a stylograph, which is held on a little spring piston actuated by the internal pressure, and surrounded by a water-jacket to prevent it from seizing with the high temperature. The diagram gives both the compression and explosion in a most striking manner, and registers the slightest change in the carburation and

also any advance or retard in the ignition. It will be a most useful addition to the workshop, greatly facilitating the testing and regulating of both motors and carburettors.

THE VAN LANGENDONCK LIGHT CAR.

THE accompanying illustration shows the new light car which has lately been introduced by La Compagnie Générale d'Automobiles, of Rue de Brabant, Brussels. Power is supplied by a De Dion 5 h.p. or Buchet 8½ h.p. two-cylinder motor, at the desire of the purchaser; the engine is located under a bonnet in the fore part of the frame. The water circulation is maintained by means of a chain-driven pump and radiator, the latter being fitted in the front of the motor bonnet. The power of the engine is transmitted through a large friction clutch to the change-speed gear-box, which comprises three pinions, any one of which can be made to mesh with corresponding gear-wheels on a parallel shaft. Three speeds forward and a reverse motion are available, the former being controlled by a hand lever on the steering column and the reverse by a pedal. The change-speed gear-box is so arranged that it may readily be inspected. From the gear-box the power is transmitted by a longitudinal shaft and bevel gearing direct to the rear differential "live" axle. Three band brakes are fitted,

one acting on a drum on the differential gear the others being on drums connected to the hubs of each of the rear wheels, the latter acting both forward or backward. Steering is controlled by a horizontal irreversible hand wheel. The main frame is constructed of iron and wood, well stayed, the engine and change-speed gear being supported on two parallel tubes. The road wheels are of the cycle type, shod with pneumatic tires. The motor and transmission gear being mounted on an independent frame,



THE VAN LANGENDONCK LIGHT CAR.

any type of carriage body—spider, *tonneau*, etc.—can be fitted.

THE municipal authorities of St. Petersburg are reported to have issued a notice forbidding the use of all steam cars, with the exception of the Serpollet type, in that city.

AN American journal says that the roadside hostels beyond Brooklyn and on Staten Island are doing better business with motorists than they ever did with New Yorkers of a previous generation who drove fast horses.

A CERTAIN Senor Anchorena is said to be about to embark upon an exploring and hunting expedition in Patagonia. Some half dozen other gentlemen are to accompany the Senor into the unknown wilds, where the automobile will be their principal means of transport.

A MOTOR-CYCLE race, the first of its kind in the country, recently took place at Yokohama, Japan. There were three competitors, mounted respectively on a motor-quadracycle, a motor-tricycle, and a motor-bicycle. The distance was two miles, and this was covered by the rider of the motor-bicycle in 5min. 25sec.

AERIAL STUDIES.

1. **T**HE Professor—"Always straight in front of you, and don't lose control of the brake."
2. Beware of descending too rapidly.
3. Look out for the police when travelling at high speed.
4. Keep to the left.



5. To do repairs *en route*, hook on to a steeple or lightning conductor.
6. Avoid chimneys.
7. Keep your head in an encounter with the birds of the air.
8. And, above all, don't tumble off!—"La Nature."

A NUMBER of apartment houses recently built in New York city contain "automobile stables."

THE Locomobile Company of America, of New York, report that their exports for the first ten months of 1901 amounted to £32,400.

ACCORDING to the U.S. First Assistant Postmaster-General, the poor condition of the roads in Indiana prevents the extension of rural mail delivery by motor-cars.

THIRTEEN hundred owners of automobiles have registered with the New York State authorities under the new law. The number furnishes an illustration of the remarkably rapid growth of the industry.

ON Wednesday last Mr. Letts, of the Locomobile Company of America, sailed on board the "Celtic" for New York to inspect the latest models of Locomobiles and also to make arrangements with regard to their exhibit at the Automobile Club's show in April next. Mr. Letts will probably be absent a month, and hopes to bring back, amongst other new models, a delivery van manufactured by the company.

ACCESSIBILITY.

ACCESSIBILITY of parts, and especially of parts subjected to wear, is one of the most essential features of any motor or motor-car. In the earlier automobiles probably no feature of value was more neglected than this. The inventor began with his motor, placing it on the frame, and then piling the accessories and other parts around it wherever room could be found. The result was that as a rule, whenever something on the engine broke or needed readjustment, practically the whole vehicle had to be pulled to pieces to get at the parts affected, and repairs on the road were almost out of the question. The earlier worker naturally did not take the broad view of the whole combination of a vehicle like present designers, who have many models to serve as their guides. Probably, also, they failed to appreciate the importance of accessibility, which, although it might have been forecasted by a theoretical consideration of the nature of the machinery employed and the conditions under which it works, has only been fully established by road experience with actual machines.

In a petrol vehicle that which requires most frequent attention is the motor, or, to come down to narrower limits, the valve and ignition mechanism of the motor. The motor should therefore be so designed that all the parts constituting the valve and ignition mechanism can be easily withdrawn and without disturbing any of the other parts. This requirement has received full consideration in the design of many of the better motors of to-day, and we have examples, remarks the *Horseless Age*, which are probably not far from perfection in this respect. However, it is not sufficient that the parts of a motor be easily dismantled when the latter is placed on the shop bench or on a testing stand. The motor must be so placed in the vehicle that these same parts are readily accessible when it is in position. This requirement demands the exercise of no little ingenuity on the part of the designer when determining the general arrangement of parts and when designing the body. It is certainly objectionable to be compelled to get below the vehicle to reach certain parts.

A ready accessibility of parts not only aids in quickly repairing a fault; it also facilitates locating it. Locating the defective part and removing it from the machine usually consume the greater amount of time lost on the road, and a reduction in the time lost through such delays greatly increases the practicability of automobiles. One French firm, in order to facilitate repairs, etc., arranges the mechanism of its vehicle in five groups of parts, which can each be taken from the frame separately. This seems to be a promising line of progress in the direction of accessibility.

The whole problem we are here dealing with may be summarised as follows:—The various operating parts of a vehicle must be so assembled that they can easily be taken off when required. The parts must be compared with each other as regards rapidity of wear and liability to damage, and those most affected must be placed in the most accessible positions. The mechanism must be divided into groups which are as nearly as possible independent of each other.

WE hear that Mr. C. T. Crowden, of Leamington, is contemplating an early visit to the United States with a view to looking up the leading fire-brigade authorities in connection with the question of motor-fire-engines.

AT the last general committee meeting of the National Cyclists' Union it was suggested that the Union should hold a championship for motor-cycles, but the matter was held over until the next meeting.

CHENHALLS MOTOR-CARS, LIMITED, has been registered with a capital of £20,000, to acquire from J. S. Chenhalls the benefit of certain inventions relating to generators, motors, and wheels for use in the manufacture of motor-cars, locomotives, etc., and to carry on the business of motor-car manufacturers, etc. The first directors are J. S. Chenhalls, S. Ashdown, and R. J. Akers. The registered office is at 59, Ebrington Street, Plymouth.

HERE AND THERE.

WE hear that Mr. F. W. Hudlass, of the Phoenix Motor Works, Southport, is at work on the construction of a 20-h.p. double-cylinder car.

THE King and Queen were expected at Pennhouse, Amersham, Bucks, on Friday, on a visit to Earl and Countess Howe. In the event of the weather proving favourable, it was proposed to make the journey on a motor-car.

A VERDICT of "Accidental death" was returned at the inquest held at Folkestone on the body of the Hon. R. R. Dobell, the Canadian Minister killed on Saturday last in a riding accident at Sandgate. His horse, which was hired, had shied at a motor-car proceeding at a slow pace.

THE Clifton Motor and Cycle Company, 2A, Boyce's Avenue, Clifton, Bristol, has storage accommodation for motor-cars. Petrol, greases, oils, spare parts, etc., are also kept in stock.

A CORRESPONDENT, signing himself "Troubled," is anxious to know the name and address of the makers of the accumulators used on the Panhard cars.

THE distinction of being the first bridegroom in Liverpool to arrive at church on a motor-car is claimed for Mr. Thomas Worrall, who was married at St. Bride's Church on New Year's Day.

MR. SYDNEY G. CUMMINGS, of Cheshunt, Herts, has taken up an agency for a well-known insurance company, and can undertake the insurance of motor-cycles and cars against fire, third party risks, and burglary.



A GENERAL VIEW OF THE RECENT PARIS MOTOR-CAR SHOW, SHOWING THE TATIN MOTOR BALLOON.

ONE of the most important discussions of the season is to take place at the Automobile Club on Wednesday, the 22nd inst., when Mr. Roger W. Wallace, K.C., the Chairman, will read a paper on "The Proposed Alterations in the Existing Law Affecting Motor Vehicles."

AT the meeting of the Uxbridge Rural District Council last week a letter was read from Lord Ebury, complaining of the state of the roads at Northwood, Middlesex, which concluded by saying, "At the end of the winter I propose to send the Council in a bill for providing my carriages with new tires."

WE hear that the Surrey Court of Quarter Sessions has authorised Captain Sant, the Chief Constable, to purchase seventeen bicycles for the use of the County Constabulary, and one for himself. Automobilists had better beware of not exceeding the speed limit when driving through Surrey.

MR. F. R. SIMMS, who has taken a deep interest in aeronautics for a long time past, besides building his own flying machine, is we hear, constructing, in conjunction with Messrs. Spencer Brothers, an improved motor balloon on the Santos Dumont system.

NOTWITHSTANDING other statements to the contrary, we are able to state that Messrs. Humber, Limited, Messrs. Hewetson's, Limited, and Messrs. W. T. and S. E. Botwood have decided to only exhibit their vehicles at the Automobile Club Show in April next.

A SEPARATE depot under the name of the Minerva Motor Repair Department has been opened at 158, High Holborn, W.C., where is kept a stock of every part of the Minerva engine and its accessories, varying from a flywheel down to the smallest screw or washer.

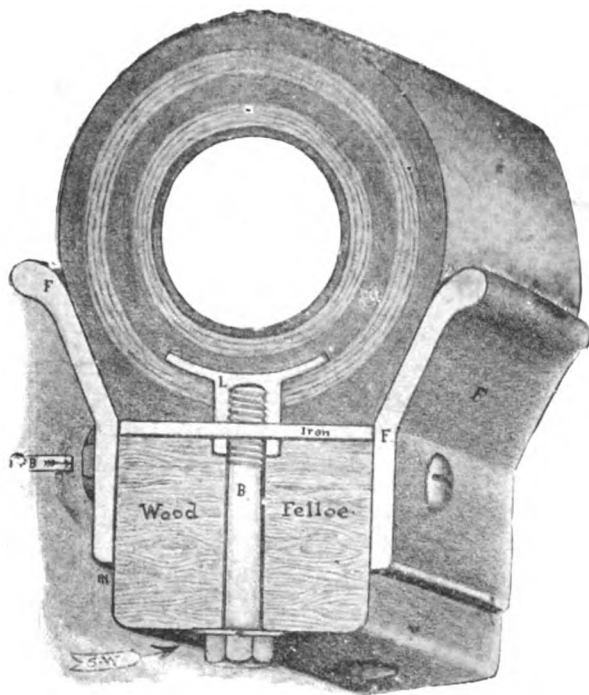
WHILST Dr. Wyatt Smith, of Woking, was driving round the district in his motor-car, visiting patients, a horse became frightened at the noise made by the machine, and, backing, overturned it, throwing out both the doctor and his driver, each of whom was severely bruised.

EARL RUSSELL in his account of the six-days' tour in Essex, concluded in our last issue, referred to an extortionate charge at Canterbury for re-charging accumulators. Mr. E. J. Philpot, 42, High Street, Canterbury, writes us asking us to mention that the statement made does not apply to him.

THE alleged reckless driving of motor-cars at Branstone has formed the subject of a communication from the Council's clerk to the local police. Superintendent Hickling has promised to give the matter his attention, and, in the event of his finding a motorist going faster than the law allows, to take proceedings.

THE other day we had an opportunity of inspecting a novel combination of carburettor and inlet valve for bicycle motors that will shortly be on the market. Owing to matters relating to the patents, we cannot say more at present, but hope to describe the arrangement in a later issue.

THE accompanying illustration shows the flat base tire which the New York Tyre Company are making for use on motor-



vehicles weighing upwards of one ton. Tires of this type are, we understand, being used by Lord Brassey and several other motorists on 12 h.p. Daimler cars.

MR. R. W. COLE suggests that while the speed of automobiles should not be more than twelve miles an hour after dark, twenty miles an hour should be allowed in the day time. The better way would be to abolish the speed limit altogether—as is advocated by a colonel who has written to the daily papers from the Army and Navy Club.

ON Saturday, the 4th inst., Portsmouth and Gosport Motors, Ltd., inaugurated their service by a run to Fareham and back. Unfortunately the weather was wet, but the trip was thoroughly appreciated, and the merits of the "Cambria," the larger of the two motor 'buses which are running between Fratton and the Dockyard, were thoroughly tested. It is a commodious vehicle, built by Messrs. G. F. Milnes and Company, of London. It has engines of 8½ h.p., and seating capacity for sixteen persons. The other car, the "Albion," is of an earlier date, and seats ten passengers. Included in the party on the inaugural run was the Mayor of Portsmouth (Major Dupree).

MR. H. G. WELLS, the novelist, anticipates a time when all passenger traffic will be carried on special roads on motor-cars, and when railways will find their chief work in carrying minerals and heavy goods.

THE *Field* has again drawn attention to the necessity of maintaining the chief highways of the country in good condition, in view of the "through traffic" that may be expected on the main roads by the adoption of the automobile for heavy transport.

THE Graphic Cycles Syndicate, Limited, Blenheim Grove, Peckham, S.E., inform us that they are the sole agents in Great Britain and the Colonies for 7, 9, and 14 h.p. D'Champs light carriages; also that they are now in a position to undertake motor-car work of every description.

MESSRS. STAUNTON AND CO., of the Excelsior Works, Blythe Street, E., are bringing out a new speed indicator for motor-carriages, which not only registers the distance travelled, but shows the speed at which the car is running at any moment. We hope to give some further particulars of the new device in an early issue.

JAMES AND BROWNE, LIMITED, has been registered with a capital of £10,000 to acquire the business now carried on by T. B. Browne and F. L. Martineau, at 78A, Queen Street, Hammersmith, as James and Browne, and to carry on the business of automobile, flying machine, and submarine manufacturers, etc.

WE hear that a patent has lately been taken out for an entirely new method of obtaining motive power for the propulsion of motor-cars, launches, etc. It is not an explosive motor, and yet is very compact and simple. The inventor states that his new motor is more easily managed and controlled than steam engines, and much more economical. We hope to refer to the matter again in a subsequent issue.

AT a meeting of the Bangor City Council, last week, Mr. Myrddin Jones moved the suspension of the standing orders for the purpose of calling attention to the furious driving of motor-cars through the narrow streets of the town. He further moved that the attention of the police be called to the matter. He did not refer to the case that had been in the courts, but to certain wild people who came from Llandudno and elsewhere. The motion was carried.

THE General Motor-car Works, of 10, Elm Street, Gray's Inn Road, W.C., have introduced a new condenser for steam-cars, and radiator for petrol motors. The device is neat in appearance, and has no parts that can be bent or damaged when cleaning the car. It is made in two sizes, of tinned iron, enamelled, or tinned copper, and in a space of 24 inches by 12 inches 78 square feet of cooling surface are provided.

WE had an opportunity of inspecting one day last week a 9 h.p. Napier car, which has been built to the order of the Maharajah of Balrampur. The body, which has been constructed by Mr. Mulliner, of Northampton, is arranged in the form of a wagonette with doors behind. The sides take the form of double curves, so that all four passengers in the hind part of the vehicle can face forward. At the back, besides an easy step, are two standing boards for the prince's Indian servants. The body and wheels are painted a brilliant green colour, relieved with lines of gold, and present a striking appearance.

THE Simms Manufacturing Company, Limited, 55A, Southwark Park Road, Bermondsey, inform us that they are now laying down very light four-cylinder engines, to use either petroleum spirit or petroleum, the first of which will make its appearance at the Automobile Club's Show in April next. The sizes will be 20, 30, and 50 b.h.p. They are also building similar engines, but of heavier construction, for the motor-car trade, suitable for either light or heavy traction. Among the special features of the motors we may mention the Simms-Bosch magneto-electric ignition and timing gear, a sensitive governor acting by way of throttle on the inlet of gas and air, mechanical lift of inlet and exhaust valves (of same diameter and interchangeable), all of which will be worked by one countershaft.

CORRESPONDENCE.

MOTOR-BICYCLES FOR 1902.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Perhaps I may be permitted to say a few words in reply to those who have done me the honour of criticising my letter. I am glad to hear that Mr. Lambe is bringing out an improved bicycle; and, should it be the success he anticipates, we will hope that some of your correspondents will at last have something good to say of an English machine, and will no longer find it necessary to champion the cause of the foreigner.

In reply to Mr. Bennett, I cannot see that it matters whether Mr. Tessier smashed a combustion chamber with his knee or whether the damage was done by contact with the ground; the inference apparently is the same, viz., that a bicycle motor should be placed where it is least likely to be injured. I think we must allow my conjecture as to the death of the 1901 model of Werner to stand a little longer, as this is a question which will not be settled by the makers, but by the public. It will be interesting to see how it stands competition with the later model and with other machines. With regard to the lubrication question, as both systems are well known to be efficient in good hands, I think that Mr. Bennett will see that neither is in need of support from an amateur. I can, however, show Mr. Bennett a De Dion water-cooled engine, which, after two years' constant use, will not show leakage from any part of the crank-case, although lubricated with double the standard charge of oil; and I shall be pleased to submit it to any test whatever, in respect of lubrication, as against his Werner engine. This is a matter, however, for private arrangement, not for a correspondence column. I note that Mr. Bennett has come to the conclusion that two-hundred-mile rides are "too long" for him. I should like, however, to have seen this admission incorporated in the account of his ride.

Mr. Craig seems in a somewhat aggressive mood, and would apparently like to break a lance with someone over the merits of the Holden bicycle. I am sorry that I cannot oblige him, if for no other reason because I do not think that the merits of this machine can be known as yet, seeing that the machine delivered to me a fortnight since was, I believe, the first one sold. Mr. Craig has a new grievance—that my views have changed in three weeks. If, however, he reads this letter he will see that he is mistaken.

I thought the letter of MM. Werner Freres, viewed as an advertisement, exceedingly good; but there seems to be a certain Gallic inconsistency in their reference to myself. If their motto is *laissez dire*, why refer to my letter at all? And, further, if the latter does not contain intelligent criticism, how can it do harm to any maker of motor-bicycles? As a matter of fact, my letter was intended to be read in relation to a series of laudatory statements with regard to this machine. Were these statements (including a recent account in a contemporary of a ride up a mountain) collected, the only possible inference would be that no further improvement is possible, or at all events desirable, in the design of motor-bicycles. My own view, on the contrary, and that probably of at least some of your readers, is that no type of motor-vehicle is more in need of improvement than the motor-bicycle. In order to bring the matter to a definite issue, I may state it in this way. The motorist has long since emancipated himself from the disabilities of the belt; the motor-cyclist either has not or cannot. The motorist is no longer to be seen assisting his vehicle up hills; the motor-cyclist generally does so. The motorist fits an efficient silencer; the motor-cyclist is quite satisfied with a pepper-caster at the end of two inches of pipe. The motorist has efficient brakes; the motor-cyclist very inadequate ones, in view of the pace at which he rides.

If there is anything in these considerations, then I say that, judged by the standards applied to other motor-vehicles, the motor-cycle is woefully deficient. If not so judged, then motor-cycling is not motor-cycling.

I have taken a certain French model as representative because it is the one most frequently seen, it has the greatest number of imitators, and, lastly, we are told that it is theoretically correct. Of course, there are others, some of which are, I think, better; and I much hope we may yet see an efficient, comfortable and powerful motor-bicycle. My view, however, is that that day will not come until we can persuade our designers that the best type is not that which has a wholly unprotected belt and a high-speed motor attached to the handlebar.

In conclusion, permit me to say that, although the motor-bicycle controversy appears to be about to apply for a non-stop certificate, I must declare my own innings closed, and very humbly apologise for the space I have occupied.—Yours truly, W. E. TESCHMAKER.

THE DEWSBURY FURIOUS DRIVING CASE.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—As another beautiful specimen of "Justices' justice," let me commend to your notice the report in your last issue. One or two points are worthy of notice. The police-constable swore the car was going seventeen or eighteen miles an hour, but in cross-examination he said he had the car in view one minute, and in that time it travelled 200 or 220 yards, a slight difference, as our solicitor pointed out. He admitted

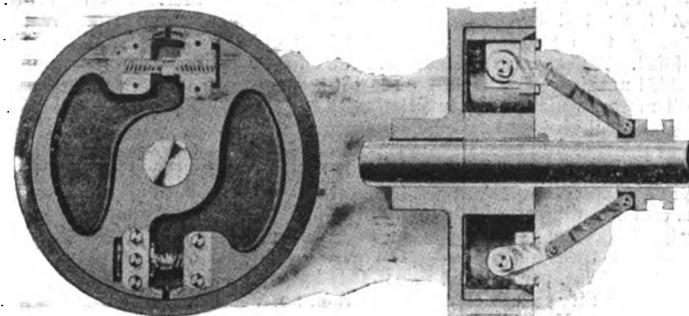
there was no one on the road near the car, and nobody's life endangered, also that he made no sign whatever to warn or stop my son, neither had he ever cautioned him. Also, he interpolated the word "fast." My son, who had been assisting to repair the car, said he had been trying the car to see how it would go, which is a very different thing. When the magistrates retired to consider their decision there was a general feeling in court, such had been the evidence, even amongst some of the police force, that the case could not be otherwise than dismissed. Hence there was no small surprise when the "lenient" fine was announced, especially seeing that in this case £5 was the highest fine that could have been inflicted. Rumour whispers that the magistrates' clerk, who owns a horse or two, and who showed some animus all through the hearing of the case, had a good deal to do with influencing the magisterial decision—but that is conjecture.

Motorists travelling through Dewsbury had better adopt a funereal pace, or, without any warning, they may, a week or two after, receive a summons to appear before this Bench of worthy Justices and their clerk. Seeing that my son had no witness—he took up his friend on his way back—and considering the animus in the general magisterial mind, my solicitor strongly advises me not to proceed with the appeal, and I have decided not to throw away good money after bad. Please excuse length of letter, but I consider a little explanation is due, and I think you will agree that such proceedings are a disgrace to the name of justice.—Yours truly, J. R. KILNER.

BRAKES.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I am surprised, after reading of the constant brake accidents recorded in your *Journal* that some such device as shown in the accompanying illustrations has not been adopted by our makers. It is a device well known to engineers in the form of a clutch, but would appear to lend itself well for such a purpose. All the working parts would be fixed on the back axle, the brake blocks merely being expanded into the inside of the sprocket wheel rim; tremendous force could be applied in this way, and the device would act, of course, equally well in either direction.



Using metal to metal surfaces, they would ordinarily be greased, so as not to brake too suddenly, and on a long and steep descent, where others fail by heating and charring, the braking action of this would increase as the grease became used up; but if suitable metals were chosen there should be no fear of the apparatus firing or jamming together. It should add very little to the trouble of a car only requiring a little attention from the oil-can when the other parts of the mechanism were being lubricated. I shall be glad to know if anything of this sort has been tried, and, if so, the experiences gained with it.—Yours truly, PERCY N. HOOPER, A.M.I.C.E.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I note in your issue of January 4 a Comment, entitled "Brakes Again," which deals with the necessity of sufficient brake-power on motor-wagons. No motor-wagon can be used with safety on hard, slippery roads unless its driving wheels are constructed to take a set of frost pins, such as are included in the equipment of traction engines, and enable the driving wheels to grip the hard, frozen surface. As is well known to road locomotive drivers, metal wheels can be locked by brakes, yet continue to slip down hill, unless provided with spikes or pins. A friend of mine has just met with one of these easily prevented accidents; in his case slipping backwards down a hill, the driving wheels revolving in a forward direction all the time. Frost spikes, of course, correspond to the roughing of horses' shoes. I think if you could insert this letter it would prove useful in drawing attention to a great danger, against which there is a simple remedy.—Yours truly, FRED PAGE.

BAD ROADS, AND A HINT TO COUNTY COUNCILS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—In driving over some of the main roads at this season of the year, it is only reasonable to conclude that those in authority do not at present realise to what extent pneumatic and other tires are damaged by the loose stones which are apparently strewed indiscriminately all over the road, and left for the wheels of passing vehicles to roll in. Those who, like myself, enjoy a drive in a motor-car in almost any kind of weather, go prepared to

brave the elements and mud, but when it comes to crashing with pneumatic, or even solid rubber tires, through sharp flints, it makes one wish for the time which is rapidly approaching, when all road surveyors will be provided with motor-cars, in which to visit the (stone)fields of their operations.

The Essex County Council have set a very good example in this respect by purchasing a De Dion-Bouton car for the use of their chief surveyor, Mr. Sheldon, and every owner of a motor, or other rubber-shod vehicle, will, I feel sure, join with me in hoping that other Councils will follow this excellent lead in the very near future. In the meantime, I would suggest that where it is necessary to cover the whole of the road with stones, the steam roller be brought into requisition as speedily as possible in every district. The North Road between Norman Cross and Alconbury is, at the present time, in an atrocious condition, practically covered with stones the whole of the way, other portions of the road between the latter place and London being in a similar state. The above facts were brought very forcibly to my notice the other week end, when the English Motor Club drove to Peterboro' with the object of meeting there the members of the Nottingham Automobile Club, who were possibly prevented from putting in an appearance through the state of the roads in that direction.—Yours faithfully,
J. W. STOCKS.

STEAM CARS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—If you can find room in your paper for a few random remarks of mine you will be conferring a favour probably on others besides myself, as there must be many others looking for a well-built steam car to seat four, and at a moderate price, say £250, capable of travelling fifty to sixty miles on one tank of water. As an Englishman I have naturally expected such a car to be built in England, but the steam-car seems to be represented by vehicles of foreign make, which owing to their flimsy construction cannot possibly last more than three or four years, and which require another £50 spent on them to enable one to travel any distance without stopping for water.

I have read of a new "steamer" made in the Midlands which carries a condenser which must weigh 500 lbs. I suppose this is to make ten gallons of water do the work of sixty. I should imagine it would be preferable to carry the extra quantity of water, which is certainly getting lighter all the time, which is not true of the condenser. Having heard what the petrol car maker says of the "steamers" and *vice versa*, I naturally turn my attention to electricity only to be more hopelessly muddled. A description appeared in the *Daily Mail* recently of the much heralded new invention of Edison, but it seems that it is necessary to have an oil motor, which in conjunction with a dynamo, and at an expense of tenpence, will give six brake h.p. per hour on the car. As I am told there will be a loss of 40 per cent. of the power put into the oil motor in the first instance and that given out from the battery on to the wheels, this is surely an expensive power; moreover, the battery will weigh 50 lbs. per h.p., and I am informed by an engineer of wide experience that a properly constructed steam motor with the necessary paraphernalia for generating power and transmitting it to the wheels can be constructed at a total weight of 15 lbs. per brake h.p. If this is the case, surely such a car can easily carry fifty gallons of water and then not weigh more than 1,200 lbs. with 8 b.h.p.—Yours truly,

COMMON SENSE.

FRANCE COPYING ENGLAND.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I have read the letters in your issue of December 28th from Messrs. Hector and Edge, in which it is claimed that Napier used an aluminium jacket with cast-iron cylinder lining (or *chemisette*, as our neighbours call them) before the French did. In the 24 h.p. Mors for 1900, and I believe for 1899, this system was adopted. Levegh's, Baron de Cater's, and Prince Orloff's cars were all so fitted, I know, as I have personally examined them. I think enquiry will show that Mors was first in this. Also your correspondents seem unaware that Mors has also never fitted lamp ignition to his machines, and they were in existence long before the Napier. Then, as regards the cylinder and head cast together, here undoubtedly De Dion was first, though Walton, of Derby, cast the cylinders of his "Derby" oil engine in pairs—heads and all—three years ago; I have a pair so cast which I obtained two years ago. Again, as to straight exhaust valve stems, Mors was undoubtedly first; Panhard copied this feature last year. As to maximum power for weight, I fancy the 40 h.p. Mors is quite equal to the 50 h.p. Napier in this respect.

I do not wish to be misunderstood in making these remarks, I have no trade interest to serve, and I take the greatest interest in the Napier and Wolseley cars and their developments; also I badly want to see a Napier in this year's big French races, and, still more, I wish to see it win. But do not let us deceive ourselves or make claims to which we have no right. That will only earn the contempt of our friends and rivals, not their respect. I can only presume that Panhard has so overshadowed Mors that Messrs. Hector and Edge have overlooked the latter, although Mors has consistently won all the recent big races, and personally I think will continue to do so. In my opinion, make-and-break low-tension ignition is more suitable for big engines than the high tension, as the spark is infinitely hotter and the resultant explosion more instantaneous—advantages of great import where high power and big volumes of gas are concerned.—Yours faithfully,
A. J. WESTLAKE.

QUERIES RE DE DION MOTORS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I have a 2½ h.p. De Dion tricycle, and for several months could not get out of it a powerful explosion. I have had fitted a stronger spring on the exhaust valve, and now have as much power again from the engine. I find, however, that my exhaust pipe and all round the exhaust box gets completely red hot after going a very little distance. I saw a letter on a similar subject in the *Journal* a few months ago, but never saw the question answered. I shall be greatly obliged if any reader can explain what is wrong.—Yours truly,
G. C. HARDY.

AN INTERESTING QUERY RE LOSS OF POWER.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—In reply to "Flash," the following will probably explain his trouble. The platinum on the new trembler is of course thicker than that on the old, and consequently the screw should be adjusted further away. Let me explain the working of the Aster ignition gear, and I shall be more readily understood. Unlike the De Dion, the Aster is a positive make and break: the cam forces the trembler against the screw and this makes the contact; as the spark is not produced until the contact is broken, it follows that the more rapid the break, or in other words, the farther the screw is adjusted away from the trembler, the more rapidly the engine will run. In practice I find that it is next to impossible to correctly adjust the Aster contact unless the engine is running, and so I proceed as follows: The trembler being in position, loosen the small binding screw, and the platinum tipped screw will run easily with the fingers, without using the screwdriver; screw up the platinum screw till it touches the trembler, then take it back one turn, and start the engine; now move the platinum screw about with the fingers until you find the position where the engine runs fastest, without missing fire, cut off the current, and screw the binding screw up tight. It will be noticed that as you advance the platinum-tipped screw, the engine will gradually slow down, until it finally stops because there is contact, but no break; you withdraw the screw, the engine pace will increase; continue withdrawing, it will miss fire, and finally stop, because there is break, but no contact.

Having sold some thirty Boyer cars last year, perhaps "Flash's" was one of them; if so, and he is in London, I should be very pleased to put him right, and could do so in a very few minutes.—Yours faithfully,
C. WOISTENBOROUGH.

MOTOR-CARS FOR THE TROPICS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I fully sympathise with Dr. Fowlie. I am a medical man in the service of British Guiana—a little known tropical colony of Great Britain—with a climate much as the Straits. I wished to take a small motor-vehicle back with me, but all my enquiries have as yet landed me in chaos. After a good deal of trouble I was told the flash point of petrol is 80 deg. Fahr. I see in your issue of January 11th this is stated to be below freezing point. Surely this cannot be, or the words are used in different senses.

I shall be very glad to hear from you or any of your correspondents which is the best motor-quadracycle to take to a tropical colony. The temperature is between 80 deg. and 90 deg. Very damp air is laden with moisture. The roads are good and flat—not such a thing as even rising ground. To my letters of enquiries most of the replies gave me the impression that the various firms think they are doing one a favour in replying at all—and as to selling one, that is an act of extreme condescension for which, like a certain character in "The Mikado," they require a very heavy result.—Yours truly,

G. D. ROWLAND.

THE Automobile Club of America is preparing to enforce the law which compels the Commissioner of Highways to erect signposts at road-crossings on the petition of twenty-five property owners of the county.

AN interesting exhibit at the Paris Salon was the keel of the navigable balloon "La France," constructed by the brothers Renard and Krebs in 1884 and 1885 in the military balloon works near Paris. It is made of very strong bamboo, and carries in the one end a set of secondary cells, which give the power to an electric motor which causes a propeller to revolve by means of gearing and a long protruding shaft. The navigable balloon made some seven aerial trips in 1884 and 1885, and several times succeeded in coming back to the starting point, but the charge of electricity able to be carried in the accumulators and the weight of the motor and accumulators rendered the machine quite impracticable. It was, however, the embryonic idea of Santos Dumont's machine, and it was here that M. Santos Dumont got the shape and general construction of his keel, though the improvement in the latter, no doubt, is the reason of its success.

SPACE AT THE AUTOMOBILE CLUB'S SHOW.

WHEN, in June last, the trade decided that several motor exhibitions were not only unnecessary, but would prove disastrous to the industry, and, by unanimous resolutions, determined that there should only be one motor exhibition in London per annum, and that, for the present, that one exhibition should be the Automobile Club's Exhibition at the Agricultural Hall, the question was raised by Mr. S. F. Edge, how it was proposed to prevent manufacturers and agents from acting in defiance of the decision of the trade. It was then unanimously resolved that those who exhibited elsewhere, in defiance of the decision of the trade, might be refused by the Automobile Club the right to exhibit at the one exhibition selected by the trade.

The Committee of the Club took no part in the voting on these questions, but since the trade came to its decisions the Club Committee have felt it their duty to the trade to do all in their power to ensure the decision of the trade being adhered to.

It was recently pointed out that manufacturers might attempt to exhibit their cars through agents at other exhibitions, and the Club Committee immediately published an announcement that such action would be regarded by them as being disloyal to the decision of the trade, and that those who acted in any such manner would not be permitted to exhibit at the Automobile Club's Exhibition.

On Monday night, the 30th December, the Standing Committee sat as the Allotments Committee of the Club, and dealt with a request from Messrs. Cordingley and Company that space at the Agricultural Hall Exhibition, of April next, should now be definitely allotted to applicants, a list of nearly 200 names being submitted.

In the first place, the applications of firms who had exhibited at the Stanley Show and the National Show were disallowed.

It was agreed that the applications for space of a large number of firms who have been loyal to the decision of the trade might be granted subject to the conditions previously announced by the Club, and subject to the following additional stipulation.

It was pointed out that a manufacturer might show his cars in defiance of the decision of the trade at another exhibition, and then seek to gain the additional advantage of showing his cars through an agent at the Club's exhibition.

It is clear that an agent who agreed to such an arrangement would be aiding the disloyal manufacturer in circumventing the precautions which were decided upon by the trade to prevent disloyal firms from having an advantage over loyal firms by securing the display of their cars at two exhibitions, whereas the cars of loyal firms would only be displayed at one exhibition.

The Allotments Committee therefore decided that all allotments of space should be made, on the definite understanding that the firm or person to whom the space is allotted agrees that there shall not be exhibited thereon cars which have been exhibited in defiance of the decision of the trade, or cars of a similar type to those so exhibited, or cars made or sold by firms which have forfeited their right to exhibit at the Club's Exhibition, and the firm or person to whom the space is allotted shall further agree that if such cars be exhibited the Committee have the right, at the applicant's risk and expense, to forthwith remove such cars from the space and from the exhibition premises.

The intention of this provision is clear, viz., to prevent disloyal firms from exhibiting at another exhibition under their own names and then securing the display of their vehicles at the Club's Exhibition through an agent.

In the event of a car having been exhibited at another exhibition by an agent, independently of the manufacturer, it is not intended that the manufacturer should be debarred from exhibiting his cars at the Club's Exhibition.

The conditions of allotment are as follows:—

- (1) That the applicant for space (company, firm, or individual) has not exhibited since the 11th June, 1901, and shall not exhibit prior to the Club's Exhibition of April 1902, motors or motor vehicles, or anything connected with motors or motor vehicles other than motor cycles, parts of motor cycles, or accessories to motor cycles, at any other exhibition within twenty miles of Charing Cross.
- (2) (a) That no company or firm for which, or person for whom, the applicant is the recognised agent,
(b) That no company, firm or person, appointed by the parties referred to in paragraph (a) as agent, or appointed or permitted to exhibit under any name on their behalf,
(c) And that no company, firm, or person, appointed by the applicant as agent, or appointed or permitted to exhibit under any name whatsoever on the applicant's behalf,
has exhibited, or shall exhibit during the same period, motors or motor vehicles, or anything connected with motors or motor vehicles other than motor cycles, parts of motor cycles, or accessories to motor cycles, at any other exhibition within twenty miles of Charing Cross, except with the approval in writing of the Committee of the Automobile Club.
- (3) That the applicant agrees that there shall not be exhibited on the space cars which have been exhibited in defiance of the decision of the trade or cars of a type similar to those so exhibited, or cars made or sold by firms which have forfeited their right to exhibit at the Club's Exhibition; and the applicant further agrees that if such cars be exhibited the Committee shall have the right,

at the applicant's risk and expense, to forthwith remove such cars from the space and from the exhibition premises.

Note.—The intention of these conditions is to prevent companies, firms, or individuals from acting disloyally to the decision of the trade by exhibiting the motor vehicles which they manufacture or sell through an agent or another channel at exhibitions other than the Automobile Club's Exhibition, or by exhibiting cars at another exhibition in defiance of the decision of the trade, and attempting to again exhibit them at the Club Exhibition under another name or through an agent. The only circumstances under which the conditions could be relaxed would be in the event of the Committee being satisfied that vehicles made or sold by the applicant were exhibited by another company, firm, or person at another exhibition contrary to the wish of the applicant, and that the applicant was powerless to prevent, by legal or other measures, such display of the vehicles with which he is concerned. The conditions may also be relaxed if it be shown that a disloyal firm which has exhibited cars elsewhere would in no way benefit by and is in no way connected with the display of similar cars by the applicant.—*Automobile Club Notes and Notices.*

WRIT SERVING AT AN EXHIBITION.

IN the Court of Appeal on Monday an appeal in the case of Dunlop Pneumatic Tyre Company, Limited, and another v. Actien Gesellschaft Fur Motor (Cudell), by the defendant company against the refusal of Mr. Justice Channell, at Chambers, to make an order setting aside the service of the writ in the action was heard. The defendants had exhibited some motor-cars at the National Cycle Show recently held at the Crystal Palace, their stall being in charge of a gentleman named Struck, who had an assistant named Müller. One of the motors exhibited was of the class known as the Cudell, of eight h.p., the wheels of which were supplied with pneumatic tires of a kind which the plaintiff company alleged were an infringement of their patent. The show only remained open a week, but the Master gave leave to serve the writ on the agent of the company at the exhibition, as he considered defendant company, although a foreign corporation, registered in Germany, and without any offices in England, was yet "carrying on business so as to be resident" within the jurisdiction of this Court. The defendants thereupon appealed to the judge in chambers, who, as before stated, refused to order the writ to be set aside; hence the present appeal. The Master of the Rolls, in giving judgment dismissing the appeal, said this was an action for infringement of patent, and the defendants took up the position that the service of the writ on their representative at the Crystal Palace ought to be set aside on the ground that by merely exposing goods for sale at an exhibition, a foreign company did not thereby carry on business here in such a way that they could be sued by a writ served on their representative. It had been held over and over again that the real test was whether the foreign company conducted its business here at some definite place, and not the duration of the time that business was done by them in this country. Here the German company carried on business at a particular place by an agent, who represented them alone. They therefore came within the jurisdiction of this Court, and the service of the writ was regular and ought not to be set aside. The Lords Justices concurred in the appeal being dismissed with costs.

BLOWING OFF STEAM.

AT Chertsey, William B. Bragg, no occupation, of Byfleet, was summoned for driving a locomotive from which steam was blown off, at a greater speed than four miles an hour, at Weybridge, on December 27th. The defendant admitted going more than four miles an hour, but submitted that he was entitled to do so by the Light Locomotives Act. Police-constable Bettison deposed to seeing the defendant driving a four-wheel motor in Heath Road, Weybridge. A cloud of steam came out from behind, "like the smoke from an engine." He was then coming up an incline, and the steam continued to come from the rear of the motor when he was on level ground for 150 yards. Witness stopped him, and called his attention to the steam, and he replied, "Your inspector stopped me the other day for the same thing," adding, in answer to witness, "He told me I should probably hear something further about it." Defendant also said that he had been to London, and ascertained that he could let off his steam when going up-hill. In reply to the defendant, witness said the defendant did not say anything about an accident to the condenser, which caused the steam. A brother of the defendant, who is the owner of the car, stated that the steam was due to a leakage in the condenser. A few days before the alleged offence, Inspector Marks stopped him, and witness pointed out the leak. The inspector then let him to believe that he was allowed to let off the steam when going up-hill. Inspector Marks was called, and admitted that a certain portion of this statement was correct. Mr. Begg did show him the faulty condenser, and, as witness regarded it as an accident, he did not take proceedings. An expert witness who supplied the car gave evidence, from which it appeared that the steam was due to a leakage in the pipes of the condenser, and he explained to the Bench that the car was so constructed that it could be driven without any emission of steam or vapour. This apparently satisfied the Bench that the Act under which the case was brought did not apply, and the summons was therefore dismissed.

PERTH MOTOR-CAR FATALITY.

At a sitting of Perth Circuit Court last week, Lord Trayner presiding, Thomas Goudie, blacksmith, was charged with having, on the November 16,

1901, at the junction of High Street and Scott Street, Perth, while in charge of a motor-car, driven the car against James Cross, son of Thomas Cross, labourer, High Street, and killed him, and, further, driven the same car against James Paterson, hairdresser, 5, Milne Street, Perth, William Fyfe, tailor, and Christina Fyfe, his daughter, both residing in Stormount Street, Perth, whereby these persons were injured. The accused, who pleaded "Not Guilty," described his movements on the evening of November 16th. After leaving Conacher's shop he was going at the rate of five or six miles an hour. He had difficulty with the crowd, although they made an opening for him. When the car turned it gave a lurch, and his foot left the pedal. The car lurched forward, and the accident happened before he could regain his pedal, which took about a second or two. John Duncan, owner of the motor-car, said the streets were greasy on the night in question. He examined the street on Monday morning, and found it in bad repair. The street had been repaired there since. The causeway was sunk away from the rails, and he regarded that as a danger when turning his car. In his opinion he saw enough in the street to explain the accident. Accused was a careful driver. Other evidence having been heard the jury found the charge proven, but recommended the accused to leniency. Lord Trayner, in passing sentence, said he would be doing violence to the evidence, and certainly to his own feelings, if he did not regard this as a very light case of culpable homicide. He was very glad that the jury had appended to their verdict a strong recommendation to mercy, as it enabled him—as the Court is always willing to do—to give a lighter sentence than it might do otherwise. Under the whole circumstances, he thought that the ends of justice would be sufficiently vindicated and that pursuer would be sufficiently punished by a sentence of imprisonment for three months.

FURIOUS DRIVING CASES.

At Watford Cyril Potter was charged with furiously driving a motor-car at Watford on November 28th. Defendant did not appear, but was represented by his driver. Police-sergeant Appleby said that on Thursday, November 28th, he was on duty in the High Street when he saw a motor-car being driven at a pace of at least from fifteen to twenty miles an hour. He went into the Police station and telephoned to the Bushey Police station, and the car was stopped by the Bushey Police, and the defendant's name and address taken. There was a lot of traffic about at the time, and a steam-roller was in the road; there were two or three ladies in the car at the time. Police-constable Smart corroborated the evidence as to the pace, and said he never had time to call to the motorists, for "they simply went past like a flash of lightning." Police-constable Hobbs, stationed at Rickmansworth, from information received, stopped the car and obtained the defendant's name and address. The defendant was sitting by the side of the driver. A fine of £5, and 8s. costs, was imposed.

At Brentwood, Charles Warren, of Ipswich, and Arthur Barnes, of Cheltenham Road, South Croydon, were summoned for driving motor-cars at a greater speed than twelve miles an hour between Brentwood and Romford. Mr. Warren, it was alleged, put on speed after passing a constable and did six miles in seventeen minutes, Mr. Barnes covering the same distance in twenty minutes. The speed was ascertained through the agency of the police telephone. The defendants stated that the road was clear of all traffic, and they were unaware they were going so fast. They were each fined £1, and 10s. costs.

At York Police Court, Walter Booth, of Bradford, was summoned for furiously driving a motor-car in Spurriergate and Low Ousegate. P.C. Waddington stated that on the 27th December, about half-past three in the afternoon, he was on duty at the corner of Spurriergate when he heard a motor-car approaching from the direction of Coney Street. He heard a horn blown, and on looking round saw the defendant in a motor-car. Before he could turn his head to see if the road was clear the defendant came round the corner at twelve miles an hour and collided with a doorway, doing some damage. He was also on the wrong side of the road when in Spurriergate. There was nothing in the way at the time. If he had turned the corner at a lower speed nothing would have happened. When witness went up to the defendant and told him he would be reported he said that the machine skidded when going round the corner. Two more witnesses supported this statement. The defendant said it was ridiculous to say that he was going twelve miles an hour, especially along such a narrow street. He saw the policeman and he was not going to run headlong into danger. The policeman did not even put up his hand to warn him. He had paid for the damage to the shop. While turning the corner one of the wheels skidded. Had it not been for the wet state of the road, which was made of wood blocks, he would have got round the corner all right. If he had been going at twelve miles an hour round that corner and collided with the shopdoor, he would have broken his neck; as it was he was not even thrown out of the car. He had driven a car through Bradford every day for over a year and had never been stopped. The Bench said as the policeman had stated that he did not hold up his hand and also seeing that there was no sand on the road the case would be dismissed.

At Cheshunt, Louis Fleischmann, of Burton Grange, Cheshunt, was summoned for driving a motor-car at a greater speed than twelve miles an hour on the public highway. Defendant did not appear, and was defended by Mr. T. W. Staplee Firth. Acting-sergeant Albert Willoughby deposed that at 9.30 a.m., December 2nd, when on duty at Turners Hill, close to the police station, he saw defendant's motor-car being driven along College Road towards the police station. It turned down Turners Hill at a very rapid rate. Witness looked at his watch as the car passed and saw

that the time was 9.3. Station-sergeant Gurnett deposed that at about 9.5 a.m. on December 2nd, he saw the defendant driving a four-wheeled motor-car at a much greater speed than twelve miles an hour. When witness saw the motor it was passing under the railway bridge at Theobalds Grove. Witness stopped the car at the corner of Eleanor Road. The time was then exactly 9.5. Witness added that it was in consequence of complaints received from inhabitants of Waltham Cross and Cheshunt that he kept observation on defendant's car. At 8.30 a.m. on the morning in question witness compared his watch with those of Sergeants Kendal and Willoughby. The distance from Cheshunt Police-station to Eleanor Road was 1,585 yards. Defendant's car covered that distance in two minutes, and was therefore going at twenty-seven miles an hour. The three watches were compared again at 9.30 a.m., and they were found to agree. Cross-examined by Mr. Firth: I have never told anyone that I intended to catch Mr. Fleischmann. Sergeant Kendal corroborated the evidence of the other officers. Mr. Rackham, driver of the car, gave evidence to the effect that the maximum speed on the occasion in question was ten and a half miles an hour. It was absolutely untrue that the car had ever knocked down anyone, or that any woman had ever thrown a pail at it. The car was a touring vehicle, and only geared to about twelve miles an hour. Mr. Firth, addressing the Bench, said the police had long desired to ambush Mr. Fleischmann. They had listened to tales by nervous gentlemen and had acted the part of the stalking horse. These three full-blown sergeants, all armed with watches, went out quite biased and with the deliberate intention of catching Mr. Fleischmann. The watches were not stop-watches and the chain with which the distance had been measured was not in court. The police had been over zealous, and their watches had evidently gone wrong. The Bench complimented the police on the way in which they had conducted the case, which was the first of its kind at Cheshunt, and ordered defendant to pay a fine of 40s. and costs, £2 8s. 6d. in all.

In Dumfries Sheriff Court, Hugh Johnstone, Paisley, was charged with driving a motor-car through Closeburn Village, on the Dumfries and Glasgow Road, at a greater speed than twelve miles an hour, on October 14th. The accused was at the time engaged driving for the Countess of Selkirk. Witnesses stated that the accused was going at the rate of from seventeen to twenty miles an hour, and an accident resulted, a farm horse taking fright and knocking down its driver, who was run over by a wheel of his cart. Giving evidence for himself, Johnstone stated that at the time the speed of the car was not more than seven miles an hour. In proof of this he said that the children amused themselves by jumping on and off the back step of the car. Sheriff Campion gave the accused the benefit of the doubt and found the charge not proven.

At Bridgend Police-court, William Long, a motor-car driver, was fined 15s. for not being in a position to have control over his car, which belongs to Mr. T. Morgan, Pontyclun.

WE learn that Werner Motors, Limited, have just secured an order for six of the latest pattern Werner motor-bicycles to be sent to Rhodesia, South Africa.

To prevent the freezing of the water in motors, the Vulcan Company, of 32, Kurfurstendamm, Berlin, W., has introduced a new product called Calcidum, which is added to the water. Half water and half Calcidum is claimed to prevent the freezing of water up to 15 degrees of frost, and larger or smaller quantities can be used as required. Calcidum can also be used for gas engines, acetelyne apparatus, etc.

MR. C. HARDY, of Bulwell Hall, Notts, whose interesting account of a tour in Scotland on his 5 h.p. Delahaye, appeared in this journal a little time back, has, we hear, just placed an order with the Wolseley Company for one of their 20 h.p. cars; the body work of which will be executed by Mulliners. It is expected that it will, when finished, be one of the most luxurious cars in the country, and as it will be in the hands of a keen motorist we shall expect to hear of the car again both here and abroad.

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THE Motor-Car Journal.

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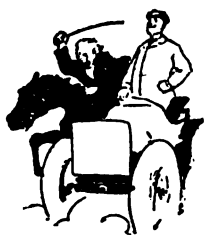
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COMMENTS.



SEASONS have no respect for royalty, but King Edward in his motor-car shows no inclination to forego what is now his favourite pastime. His Majesty spent the week-end at Penn House as the guest of the Earl and Countess Howe, and took the opportunity of making some excursions through the lovely scenery that lies about Amersham. On the conclusion of his visit on Tuesday last, the King, still faithful to his automobile, chose that as the means of making the return journey to Windsor. His Majesty left Penn House about ten o'clock, and travelled through South Bucks in charming weather, crossing the river by Windsor



Bridge, and arriving at the Castle at ten minutes past eleven. The journey, which was occasionally favoured with bright sunshine, was accomplished in about an hour. The Royal progress as the motor-car ascended Thames Street, Windsor, and turned smartly round by the statue of Queen Victoria, was watched with the keenest interest.

That Fool of an Act.

No product of the human intellect is perfect, even the Light Locomotives Act, but the faults hitherto pointed out in its composition have chiefly related to the tare of heavy vehicles and the imposition of a maximum speed for light ones some 30 per cent. below the fastest mail-coach speed of the early years of last century. A further one is brought to mind by the remarks of a correspondent last week, who very justly points out that safety with goods-vans in frosty weather is much increased by the use of "roughed" wheels, as usual with traction engines. This would obviously be the case, but unfortunately all vehicles, to come under the Act of 1896, must be provided with smooth tires, no projection being allowed, except in the case of the tires being of rubber or such like material—in which case, it may be remarked, they are of no use on anything heavier than a bicycle. It is a wise provision on the whole that smooth tires alone should be allowed on public roads, but while the iron-shod hoofs of that champion road disintegrator, the horse (who would far rather trot on the turf, poor beast), are permitted, it would certainly be defensible to allow the employment of spur-shod wheels, or their equivalent, under such abnormal road conditions as have prevailed lately. However, as one of W. S. Gilbert's characters observes, "It's a fool of an Act, but it can't be helped."

The Huntsman's Agitation.

THE discussion as to the presence of motor-cars at hunting meets continues with vigour and venom in the journals devoted to outdoor sports. It is not likely to do any harm to automobilism, but rather to bring out its points of utility in conveying sportsmen to the scene of their pleasures with the

minimum of inconvenience and in the shortest possible time. The Warwickshire Hunt started the agitation, and it is satisfactory to observe that many influential huntsmen have already disassociated themselves from such retrograde ideas. Leading sportsmen recognise the pleasure of both hunting and motoring, and if they can be combined who shall say "nay"? Captain Langrishe is the Master of a well-known Irish Hunt, and generally drives to the meet in his motor-car; so does the Duke of Beaufort, the Earl of Carnarvon, Lord Harrington, and others who stand high as horsemen and as automobilists.

The Foreign Motor-Car.

TOWARDS the discussion now going on in the financial Press with regard to foreign and British motor-cars, Mr. Charles Jarrott makes a contribution in which he declares that "business has gone abroad because the English manufacturer and English manufacturing companies have proved themselves incapable of meeting the demand over here." Undoubtedly this has been true in the past, but it is becoming increasingly less accurate as local authorities cease their irritating restrictive policy, and manufacturers recognise the points which the British public regard as essential in modern automobiles. We believe that the forthcoming Motor-car Exhibition at the Agricultural Hall will have a great effect on the British automobile industry, not only in educating the public, but also in educating the manufacturers themselves.

Yorkshire Automobile Club.

MEMBERS are invited to attend and bring friends to the Club dinner, which will be held at the Great Northern Hotel, Leeds, at 7.30 on the evening of Thursday, January 30th. Application for tickets (which are 3s. each) should be made before the 27th, and intended guests are reminded that the hotel offers ample accommodation for cars. The annual general meeting of the Club will follow, at which the yearly report and balance-sheet will be submitted, new rules considered, future arrangements discussed, and officers for the year elected.

Maidenhead Bridge Tolls.

IN our issue of the 11th inst., we referred to the petition from gentlemen in Berks and Bucks to the Charity Commissioners with regard to the tolls levied on Maidenhead bridge. The agitation against the tolls is growing, and if prosecuted with vigour may result in a better condition of things. The Highways Committee of the Maidenhead Town Council had been asked by the Charity Commissioners for a copy of the accounts with regard to the bridge for the last three years, showing not only the receipts for tolls but also the way in which this money has been expended. The lessee of the bridge is also becoming anxious, for he has written the Council as to the toll for motor-bicycles, and has received a reply saying that the Council is not disposed to sanction a toll for motor-bicycles—the only reasonable reply they could give. Mr. Joseph Taylor is taking a leading part in the agitation and will address meetings on the subject anywhere in the two counties immediately concerned in the freedom of the King's

Highway. Should the Charity Commissioners decline to intervene and take over the Trust, the toll will be paid under protest and the case carried to the High Court of Justice. Already a subscription fund has been started, contributions to which can be sent to Mr. Joseph Taylor, Poor Law Guardian, High Street, Eton, Mr. Cecil Howlett, Rural District Council, High Street, Eton, Mr. Joseph Fullbrook, Slough, or the bankers, Messrs. Barclay and Co., Slough, Bucks.

Leaving a Horse Unattended.

AN inquiry having been received as to the Act under which a driver could be summoned for leaving his horse unattended, it has been ascertained that Section 78 of the Highways Act of William IV. covers the point. This Act provides that:—"If the driver of any carriage whatsoever shall quit the same, and go on the other side of the hedge or fence enclosing same, or negligently or wilfully be at such distance from such carriage, or in any such situation whilst it shall be passing upon such highway, that he cannot have the direction and government of the horse or cattle drawing the same, he shall, on conviction for such offence, forfeit a sum not exceeding £5, or if the driver be the owner of the vehicle, a sum not exceeding £10, or in default of payment he may have hard labour for not more than six weeks."

A Prosecution.

ON Saturday, the 4th inst., Mr. E. J. Waller was motoring to Hampton Hill with Mr. Staplee Firth. As they were driving down the High Street, Wandsworth, an unattended horse, yoked to a four-wheeled van, on hearing the motor-car approach, dashed out in front of them, and in order to prevent a serious collision Mr. Waller put on the brakes hard, but in consequence of the greasy state of the road a serious side-slip caused the car to turn completely round, and the near hind wheel came into violent contact with the kerb. A collision, however, with the horse in question was thus avoided. The back axle was bent, and the car had to be left at Wandsworth. Subsequently, Mr. Staplee Firth applied for a summons at the South-Western Police Court against the owner of the horse, and the same was granted and made returnable for the 14th inst. The case was heard on that day, and the owner of the unattended horse was fined 10s. and costs.

A New Eldorado.

THAT automobilism has made rapid progress during the past year and is expected to make even greater headway during the coming twelve months is a generally conceded fact in motoring circles. But that this view is not confined thereto, but is being shared in other quarters, is evidenced by the rumours of the approaching appearance of half a dozen new automobile papers. For the sake of the trade it is to be hoped that it is not to pass through the same experience as the cycle industry, which was at one time supporting quite a multitude of papers—reduced now, fortunately, to three or four. With five British journals, two of which are published weekly, entirely devoted to automobilism and the motor-car industry, we think the movement is sufficiently well supported, and the trade sufficiently well served without the latter having further burdens put upon it, and hope in the interest of the trade that once again rumour will support its old character of proving a false jade.

Motor-Cyclists in Hyde Park.

CYCLISTS have long regarded with envy the possessors of motor-bicycles and similar machines who have been able to use Hyde Park throughout the day, while the poor pedallers have been restricted to a few hours in the morning. We understand the attention of the Commissioner of Works is

to be called to what some cyclists regard as an anomaly. But it is rather like the dog in the manger attitude to grumble because motor-bicyclists appear to be favoured. Instead of seeking to prevent motor-cyclists having this privilege the cyclists should try and secure it for themselves—or else become motor-bicyclists.

Motor-Cars for Parcels Work.

A CORNISH friend of the *Motor-Car Journal*, who is also a friend of the *Drapers' Record*, sends us a cutting from the latter periodical to which we are invited to reply. It appears that our textile contemporary has an idea that the Post Office does not adopt the automobile because it has been unable to find a reliable one. We are reminded that in the early days of the industry an experiment was tried in carrying parcels by motor-car between London and Redhill. At first it was satisfactory, but difficulties subsequently developed and the plan was not continued. In various country districts, notably near Lincoln, the automobile has frequently proved its serviceability in easing the postal authorities during seasons of unusual stress and strain. Unfortunately, the officials at St. Martin's le Grand are slow and hard to move; hence their dilatoriness with regard to the new locomotion. We are surprised that the *Drapers' Record* should be sceptical as to the value of automobiles in parcel delivery work, seeing that some of the leading London drapers have adopted them with advantage.

Motor-Cars at Exeter.

MR. H. A. WILLING, Chairman of the Exeter Chamber of Commerce, in addressing the annual meeting of that body on the 15th inst., commended Exeter as an almost ideal city in which to start the manufacture of motor-cars. The situation of the capital of Devonshire and the railway facilities it offered combined to make Exeter a very desirable seat for this industry, and he was confident that if it were well placed and managed in an enterprising spirit, works might be carried on to give employment to a thousand hands. Mr. Willing is the head of a large gas engineering firm in Exeter, with branches at Cardiff and in London. His idea of Exeter as a centre for the motor-car industry rather took business men by surprise because they had not thought of it. The subject, however, has been favourably discussed in commercial circles, and the Devonshire Press commends the notion. It is expected that the Exeter Chamber of Commerce will further ventilate the subject, which is the most promising of the many schemes which are being aired to make the city more of a manufacturing centre.

The Wolverhampton Club.

THE members of the Wolverhampton and District Automobile Club held their first annual dinner on January 16th at the headquarters, the Victoria Hotel. Alderman Levi Johnson presided over a numerous gathering, among those present being the Mayor (Mr. C. P. Plant), Capt. Burnett (Chief Constable), Messrs. S. R. Rhodes (hon. secretary), A. E. Jenks (hon. treasurer), F. F. Sharpe, R. R. Rhodes, H. W. Jenks, T. F. Young, H. Van Tromp, G. H. Evans, E. Lisle, T. Cureton, E. Lisle, jun., and others, about fifty in all. The toast of "The King" having been duly honoured, Mr. Cureton proposed "Our Civic Rulers." The Mayor, in responding, said he trusted that the manufacture of motor-cars would become a most important industry and become beneficial to the town, especially in the case of heavy automobiles for corporation and public works. Mr. H. Van Tromp proposed "The Club," and said a few words about the growth of the Club and the mileage done. Mr. S. R. Rhodes responded in an eloquent speech, setting forth the importance of drivers being careful, giving due consideration to the public, and then he thought they would have the same fairness shown to them, and all prejudice removed. He gave a short history of the formation, growth, and increase of interest shown in the

Club since the commencement, and thought they could congratulate themselves on the result of the first year. Letters of apology were read from Sir H. H. Fowler, M.P., Sir Alfred Hickman, M.P., Mr. H. Norman, M.P., the Chief Constable of Staffordshire (Capt. Anson), and Mr. Claude Johnson, of the A.C.G.B.I., and the President, Alderman Marston, J.P., the Chief Constable of Staffordshire remarking in his letter that he thought if all cars carried numbers, as they did in France, the legal limit of twelve miles per hour might be abolished.

A King's Enthusiasm.

OF all the crowned heads now interested in automobilism none are more enthusiastic than Victor Emmanuel III. of Italy. On the anniversary of Queen Helen's birthday the royal pair journeyed to Castel-Poiziano by motor-car, returning to Rome the same evening. Still more recently a royal party consisting of the King and Queen, the Dowager Queen, the Duke and Duchess of Gênes, and General Brusati, who occupied two cars, made a 65-kilometre tour of Castel-Gandolfo, the lake of Albane, Frascati, and Colonna. Last of all, it is announced that King Victor Emmanuel will in May next make a tour of the island of Sicily, for the first time employing the motor-car officially.

More Balloon Ascents.

THREE successful balloon ascents were made from the neighbourhood of London at the latter end of last week. On Saturday morning, at Sevenoaks, Messrs. P. and S. Spencer, who were accompanied by Mr. Leslie Bucknall and Mr. James Dixon, jun., made the first of a series of trips, Mr. Bucknall's ultimate ambition being, it is said, to cross the Channel. On Friday the Hon. R. S. Rolls ascended from the Crystal Palace, and after a successful voyage came to ground in the neighbourhood of Sevenoaks. The other ascent was made the same day from the Gas Light and Coke Company's premises at Fulham, with the object of proceeding in the direction of Brighton, but owing to a very light wind the party were only able to reach Tunbridge Wells. The special object of this ascent was the study of the hygrometric conditions of the atmosphere at varying altitudes, but the conditions were such that little could be done.

Base Ingratitude.

AFTER listening to a most satisfactory financial statement concerning its local "bone orchard," a recent meeting of the Liverpool Burial Board went the way of many another board and entered a protest against motor-cars. It seems that one was recently seen in the cemetery. Though traps are allowed to drive through the cemetery at a walking pace, it was proposed and carried that motor-cars be excluded. Accepting the popular belief that motor-cars do much to fill the cemeteries, such a decision can only be regarded as monstrously unfair. On the other hand, it is just possible that the Board has been influenced by a kindly desire to exclude anything at all suggestive of the hereafter of anyone committed to its charge.

The Automobile Club of South Africa.

THE members of the newly-formed Automobile Club of South Africa held their inaugural run on December 14th to Kalk Bay. The meeting of the cars took place in Greenmarket Square, Cape Town, and the assemblage and departure attracted quite a number of spectators. The vehicles were representative of all the modern styles, and among the members who took an active part in the proceedings were Messrs. B. Bartholomew, with a Benz car and a steam car; Mr. A. G. Fuller (the secretary)

with a Royal Enfield quad; and Mr. A. T. Hennessey, with a Deauville car. In addition to these, Mr. Frank Wheeler was present with a neat little steam car, and there were also a wagonette and a char-a-banc for the convenience of invited guests. The trip was made to Mr. Arderne's residence at Kalk Bay, and altogether the automobilists experienced an exhilarating afternoon.

Growth of the French Motor Industry.

"THE use of the motor-car has during recent years made such strides in France that it has given rise to a most important and ever-increasing industry. Thousands of mechanics are now employed in the construction of motors, cars, and their component parts, and it is not too much to say that France is ahead of any other country in this line of manufacture. The consequences of this industry are also far reaching, owing to the numerous subsidiary industries which it either creates or fosters." These remarks are from the report of Mr. A. P. Inglis, British Consul-General, in a report on the trade of France issued by the Foreign Office. He illustrates the growth of the motor industry by pointing out that the race which was run last year between Paris and Berlin brought orders to French firms valued at no less than 108,000,000 francs (£4,320,000).



MOTORING AND SHOOTING. MR. F. F. WELLINGTON AND FRIENDS AT KELVEDON, ESSEX.

Motor-Cars in Winter.

THOSE automobilists whose experience does not yet include winter use of their vehicles will probably welcome a few remarks on the special precautions necessary in their operation at this season of the year. Carelessness in leaving steam and petrol vehicles exposed to freezing temperatures with water in tanks has been the cause of much annoyance, and users are especially liable to suffer from this trouble at the beginning of the cold season, when a sudden drop in temperature often comes unexpectedly. In petrol vehicles the cracking of the engine cylinders is the most serious result of this oversight. With steam cars the piping and tanks are sure to burst if the water is allowed to freeze. In the case of petrol vehicles an efficient method of preventing the water from freezing at temperatures below the freezing point is to add glycerine, although the *Horseless Age* considers that calcium chloride is preferable, as it does not deteriorate the rubber connections. Steam carriages must not be exposed, when not in use, for any length of time to freezing temperatures. When left in the stable either all the water must be drawn from the tanks or else the stable must be heated, the

latter being probably the method most generally employed by steam-car owners. At periods of extreme cold lubricating oils have a greater viscosity than during the warm season, and to feed the oil at the same rate requires, therefore, a greater opening of the lubricator. When there is snow on the ground the traction or adhesion of the wheels is naturally reduced, and the liability to skid or side slip is increased. The same conditions prevail when frost sets in shortly after rain, and in all such cases special care in driving is necessary.

The Motor and the Microbe.

illumination. The conversion of sugars and starches into alcohol by fermentation is a process due to the agency of micro-organisms. Alcohol can be employed in motor-cars and also in lamps for the production of an incandescent light by the heating of the Welsbach mantle in the spirit flame. Hence the tribute of the *Lancet* to the value of microbes.

Pestered with Motoring.

A CORRESPONDENT of the *Sporting Times* writes to congratulate the editor of that organ upon the fact that it is one of the few papers left "in which the reader is not pestered with motoring." It is significant of the popularity of the motor-car that practically every class of journal in the British Isles attempts to increase influence and circulation by the publication of motor-car news of varying value and dubious originality. Certainly no comparatively modern invention has so rapidly come into popular recognition as the motor-car, and the fact that nearly every newspaper is in favour of the automobile is significant indeed.

For English Adaptation.

FROM an American source we have received a photograph of a "popcorn and peanut automobile." The engine has a double cylinder $2\frac{1}{2}$ in. by 4 in., and the boiler is 16 in. by 18 in., with 325 $\frac{1}{2}$ -in. flues. The water-tank has a capacity of fifty gallons, and the corn and peanut roaster is operated by the engine. The hood of the boiler is under the popcorn receptacle, so that it is kept hot, while the exhaust steam passes through a heater in the water-tank and keeps the peanuts hot. Here is a capital idea for the aristocrats of the London coster fraternity. Why not have a combined boot-black, chestnut, potato, and hot water machine so arranged that the feet could rest over the exhaust steam, which would be carried from thence to a small cistern for hot water, near to a supply of something stronger. The idea offers endless combinations, and busy people might have their boots cleaned while partaking of hot refreshments and in the intervals of making business calls. The automobile as a time-saver is worthy a paper at the Automobile Club.

A Lucid Definition.

prove conclusive.

Noise and Motor-Cars

OUR attention has just been called to a new phase of the question of noise in motor-cars—the effect on the body of the noise produced by exhaust and machinery. Petrol cars need only be considered here, as this is the only kind having noise-producing devices in the body—or under a bonnet. We had been

under the impression, remarks an American contemporary, that the wooden panels of the carriage body acted as an absorber and greatly muffled the noise of the motor. It is well known, however, that wood under some conditions may act as an intensifier of sound, as it does, for instance, in the sounding board. It is stated that motor-vehicle bodies with solid panels frequently act the same as a sounding board, increasing the noise instead of reducing it. A discussion of this point might disclose some interesting facts.

A Motor Muff.

How to keep warm is a problem that exercises most of us when driving in such weather as we have been favoured with lately, and a difficult part of the problem lies in a suitable protection to the hands. Thick gloves are apt to be inconveniently in the way for getting a comfortable grasp of wheel or gear levers, and wheels in which part of their metallic basis appears at the edge are peculiarly cold to handle. A successful device for the purpose consists in a woollen or other thick cap for the wheel, somewhat like a tam-o'-shanter, with two short sleeve-like apertures for the hands. Fitting loosely, it does not interfere with getting a grip in any position, and when supplemented by an "Instra" warmer tied to one of the wheel spokes, it should make the chilliest *chauffeur* comfortable.

THE Prescott Automobile Manufacturing Company, of New York, has just made a first shipment of steam vehicles to England.

ON Wednesday last, Mr. Mark Mayhew, L.C.C., was fined £5 and costs at Kirkham for having driven a motor-car at excessive speed along East Beach, Lytham. It was stated that Mr. Mayhew, accompanied by three lady friends, drove his car at the rate of forty miles an hour.

THE British agency for the voiturettes and light cars made by La Compagnie Générale des Automobiles Rochet-Petit, of Paris, has been secured by the British and Foreign Motor Car Company, Limited, of 27, Islington, Liverpool. Both types have already been illustrated in the *Journal*.

ACCORDING to the American mail just to hand, negotiations are in hand for the absorption of the Overman Automobile Company by the Locomobile Company of America. It is understood that the latter will acquire the stock, patents, and other assets of the Overman Company, and will merge the latter's business into its own.

MR. T. HYLER WHITE, of Canterbury Road, West Croydon, who is practising as a consulting engineer in connection with steam and petrol cars, has sent us a useful little pocket card showing the speed of cars in miles per hour, and kilometres per hour, at times for one mile varying from one up to sixty minutes. We understand that copies of the card may be had for the asking.

THE Vehicle Equipment Company, Brooklyn, have lately constructed a heavy electric motor-lorry for the Central Brewing Company, of New York. It weighs about 7,500 lbs., and will carry thirty half barrels—three tons—of beer at the rate of seven miles per hour, running thirty-five miles on one charge of the batteries.

MESSRS. JAMES AND BROWNE write, re the subject of brakes:—"It will interest Mr. Percy Hooper to know that our new car is fitted with patent side brakes, having cast iron shoes acting on the *inside* of the chain rings on the driving wheels. These brakes are very light, give no end thrusts, tending to force the wheels outwards or inwards, and, owing to the metals used for the friction surfaces, do not fire, and act equally well both backwards and forwards. They moreover cannot rattle, as the spring which holds the shoes in the off position locks all the moving parts. A great advantage over the rim brakes fitted to some modern cars is that they do not vary in action owing to the rims, being so near the road, getting covered with mud, water, etc.

THE ABEILLE PETROL MOTOR.

THE drawings below illustrate the Abeille petrol motor, manufactured by M. A. de Mesmay, at St. Quentin, France, and which is being introduced into this country by the Brush Engineering Co., Ltd. (Automobile Department). It is a double-cylinder engine, and has a bore of cylinder of 92 millimètres (3.68 inches), a piston stroke of 132 millimètres (5.28 inches), and a normal speed of 900 revolutions per minute. The

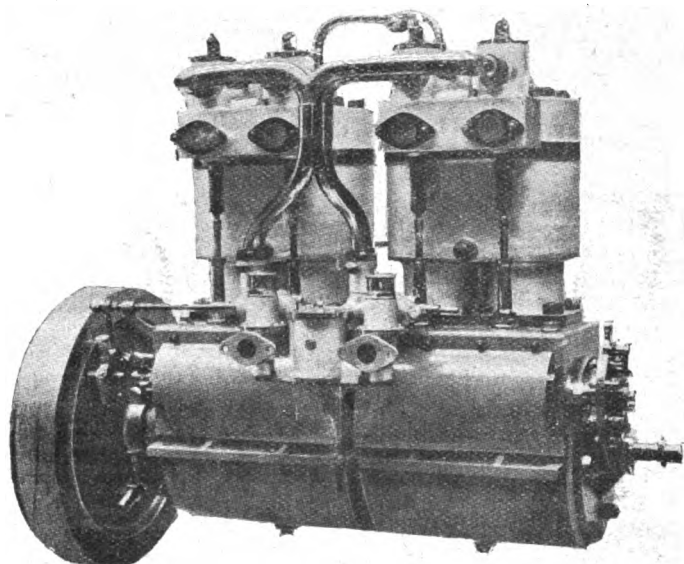
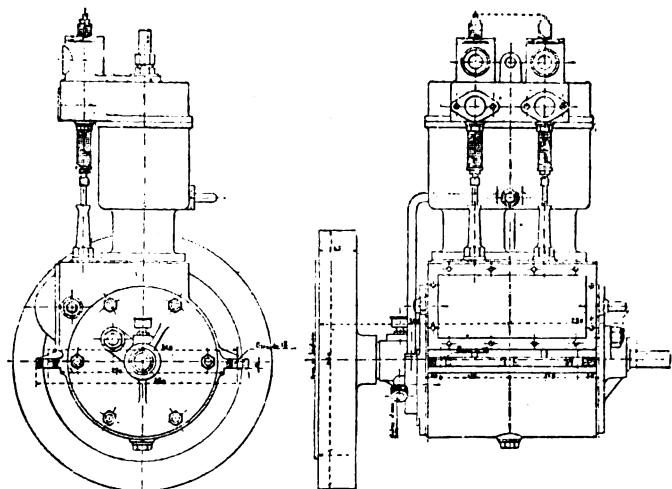


FIG. 1.—GENERAL VIEW OF FOUR-CYLINDER MOTOR.

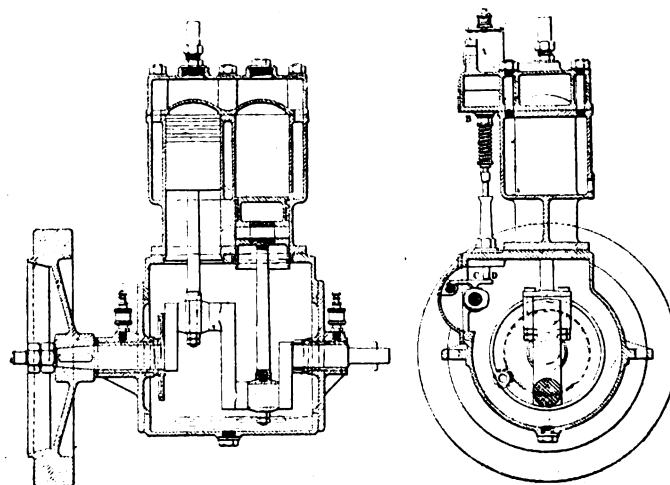
crank chamber is cast integral with the supporting brackets, which latter are strongly ribbed. This construction has been preferred to dividing the case on a horizontal plane through the crank axis, as in the latter case M. de Mesmay states that the entire impulse of the motor has to be borne by the bolts holding the two halves of the case together. To this casing are fixed the cylinders, cast integral in pairs, with their jacket, and surmounted by a double head. The jacket openings for the water are so located that every corner is cooled and no steam cushion can form. The valves can be easily removed without taking down any of the piping. Being placed one above the other, all



FIGS. 2 AND 3.—ELEVATIONS OF TWO-CYLINDER MOTOR.

that is necessary is to loosen a nut to withdraw first the inlet valve and its seat, and then the exhaust valve. The sparking plugs are placed vertically in the centre of the compression space. The crank shaft carries at one end a powerful flywheel forming part of the friction clutch, while the other end serves to start the motor. The cam shaft is driven by means of three pinions inside the crank case. The cams act on short levers, one end of which is pivoted to the casing, and the other end of which lifts the push rods and exhaust valves. The cam shaft extends outside the casing, on the front side, to receive the contact breaker. The

latter consists of a simple brush contact, and is used in conjunction with a magnetic-trembler coil, which avoids the delicate adjustments of the mechanical trembler. The other end of the cam shaft carries the centrifugal governor P acting on the admission through the intermediary of a valve interposed between the carburettor and the admission valve. When the motor is at rest, or when running at normal speed, the rod Q (Fig. 6) of the governor, forming a stop for the valve, holds the latter open in



FIGS. 4 AND 5.—SECTIONAL ELEVATIONS TWO-CYLINDER MOTOR.

proportion to the section of the passage by compressing the coiled spring R. When the speed of the motor increases the governor begins to act, and its rod ceases to act on the valve. The latter, pushed by its spring, moves into place on its seat and entirely interrupts communication between the carburettor and the engine. A charge being no longer introduced, the motor slows down and the governor resumes its original position; the valve opens and the mixture is again admitted. The periods of admission and cut-out follow each other very rapidly, and there is no sensible variation of the speed of the engine. This construction is claimed to have the following advantages:—
1. High economy, since the consumption of fuel ceases completely when the normal speed of the motor is exceeded.
2. Great simplicity; the governor acts directly without any bell

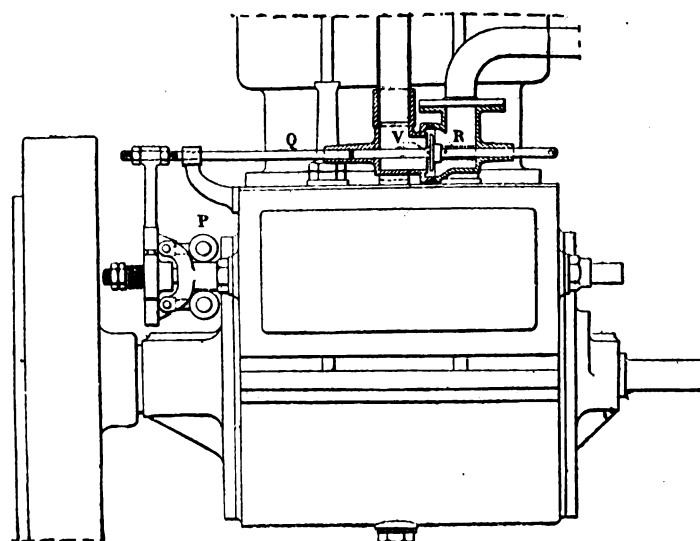


FIG. 6.—GOVERNOR ARRANGEMENT.

cranks, etc. 3. The motor can never race; because, if the governor spring should accidentally break, the valve would close immediately automatically and stop the engine. The Abeille carburettor, used with the engine, is of the constant level spray type. The circulating pump is located on the rear bearing plate of the engine casing as low as possible, so that the water will always flow to it by gravity. It is operated by a toothed wheel keyed to the motor shaft and a pinion formed integral with the

shaft of the turbine. The wheel and pinion are enclosed within the crank casing. Lubrication is chiefly by splashing in the crank casing in which all movable parts are enclosed. Other parts which are not sufficiently lubricated by this means are provided with unions for connection to a multiple oiler. The motor, it is claimed, will operate equally satisfactorily with alcohol, without any changes or modifications having to be made. The rated capacity of the double cylinder motor illustrated in Figs. 2 to 6 is 8 h.p. A 16 h.p. 4-cylinder motor (Fig. 1) on similar lines is also being turned out from the same works. It may be added that the two-cylinder engine weighs 275lbs.

CARE OF TIRES.

NOW is the time to look to one's tires, whether the car be taken out for an occasional winter run, or stalled till brighter weather and cleaner roads come with the spring. In the first place the car should be jacked up till not a wheel touches the ground. Relieved from all weight it is neither necessary to remove or even deflate the tires.

The laying up of the car for the winter offers an excellent opportunity for investigating the condition of tires, also the rims; and, if necessary, of undertaking repairs. In any case the tires may be removed, and if found undamaged, wrapped in paper, which will preserve them from the deteriorating effect of the air, and consigned to some cool place which the rays of the sun will not penetrate. Should cover or air-chamber be found imperfect, now is the time to send them to the maker for thorough overhauling and repairing. The rims of the wheels, which are as liable to damage as the tires, and to imperfections to which many a tire trouble may be traced, require careful examination. To carry this out, the band which usually lies 'twixt tire and rim must be removed. This done, the wheel should be slowly turned and the rim closely examined with the fingers. Should the edge be found to be flattened, it is easily adjusted with a pair of pincers; if cut, a file will remove the roughness. Usually the rim will be found rusty, a condition most injurious to the tire cover. Apply emery paper with care, particularly in the locality of the cuts; then paint with two coatings of white lead, and one of varnish.

When satisfied that the rims are in good condition, the tires may, if perfect, be replaced. Care must, however, be taken that they are not exposed to the sun; also that they do not carry the weight of the car when standing idle.

SPRATT'S PATENT, LIMITED, have, we understand, placed an order for a one-ton Milnes petrol motor delivery van.

THE Sirdar Rubber Company, Limited, have taken larger premises at Shirland Mews, Paddington, W., where the complete process of tiring wheels is carried out.

THE popular *tonneau* body is finding a competitor in the double phaeton, in which the back seats are parallel with the front. For winter driving the double phaeton can be changed into a *limousine* by enclosing the back, like a small omnibus.

FOR the 1902 season the Hozier Engineering Company, Limited, of Bridgeton, Glasgow, will make a speciality of an 8 h.p. light car. This will be fitted with the Motor Manufacturing Company's De Dion pattern engine (bore 100 mm., stroke 130 mm.) or with the Simms engine having the Simms-Bosch ignition to the customer's order. The design of the gearing is the same as fitted to the voiturette, but all parts have been strengthened to transmit the extra horse power.

MESSRS. FRANK F. WELLINGTON, Limited, 39, St. George's Square, Regent's Park Road, N.W., intimate that they will in future require a subscription of 1s. 6d. per annum for their monthly list of motor-cars, etc., for sale. The reasons for discontinuing the free circulation of the list are the enormous cost of distribution and the knowledge that a large percentage of the buyers introduced by Messrs. Wellington fail to pay the commission due to them.

FLOTSAM AND JETSAM.

By "FLANEUR."

WHO are our enemies?" was a question I took occasion to ask in this JOURNAL some two or three weeks ago, and it is becoming daily more apparent that the Chief Constables of certain counties are qualifying for the doubtful honour. Some amount of pressure, no doubt, may be brought to bear upon them by interested or hopelessly unprogressive persons, but that the chiefs of the police should have so little backbone as to pander to foolish importunity is painful and deplorable. They must know perfectly well themselves that motor-cars are not the dangerous things that popular imagination painted them in the first instance, and they must equally well know that, speaking broadly, they are skilfully and carefully driven. Skill, indeed, is a prime essential wherever the driver is concerned, and, whatever may be done with horses, we cannot put boobies in command of automobiles. It is a pity, forsooth, that the Chief Constables do not pay more attention to the fact that three fourths of the horse-drawn vehicles one meets on country roads are in the hands of incompetent drivers, many of whom are boys barely in their teens.

As for the question of care, I must confess to feeling strongly on this subject. The phrase "reckless driving" as applied to automobiles and automobilists is one that gets appreciably on my nerves, for having seen as much, perhaps, of horseless traffic as most people, I want to know where the reckless drivers are. I do not say that the existence of a careless automobilist is impossible, but I must be allowed to protest against the use of the expression, "Oh, well, there are black sheep in every flock" whenever we hear of someone having complained of "reckless conduct" in respect of any particular *chauffeur*. Far better is it to assume the probability in the first instance of the complaint having been proffered by someone wholly ignorant of motor-car control. To this type of person everything about a motor-car is evil, and if a horse be frightened the fault must *ipso facto* be attributed to the driver of the car, who will likewise be accused of travelling at excessive speed. But to all appearances our Chief Constables are encouraging this species of complainant, and every police notice I have seen on the subject makes mention of "complaints" without any reference to whether they are just or not, or whether they have been investigated by the Chief Constable concerned.

TAKE, for example, the following precious document, with which I was served by a policeman in Hitchin market-place a few days ago. Knowing the narrow entrance to the town of old I had driven in extremely slowly, and then drew the car to a standstill in the square, as I was halting to buy petrol. Forthwith a policeman handed me this printed screed, dated from the office of the Chief Constable at Hatfield:—

"The Chief Constable desires to inform owners and drivers of motor-cars in the county of Hertford that constant complaints are made to him of the alarm and danger to the public caused by the reckless driving of some of these vehicles. The Chief Constable reminds owners and drivers that the speed at which a motor-car may be driven on a highway is limited by law to twelve miles an hour. It by no means follows that this speed may be sustained when motor-cars are passing or meeting other vehicles or horses, or when passing through towns, villages, or other inhabited places. On each of these occasions it is incumbent on the drivers of motor-cars to reduce their speed to such a pace as would be safe and reasonable were the vehicle drawn by horse instead of mechanical power. Failure to observe this precaution will render the driver of the motor-car liable to prosecution under Article IV., Section I., of the Locomotives on Highways Act, 1896. Owners and drivers of motor-cars are also reminded of the necessity of reducing the speed of the car when passing cross-roads or turning corners, and on approaching such cross-roads or

corners the horn or bell of the motor-car should always be sounded, so as to give notice of the approach of the vehicle."

HENRY DANIELL, Lt.-Colonel,
Chief Constable of Herts.

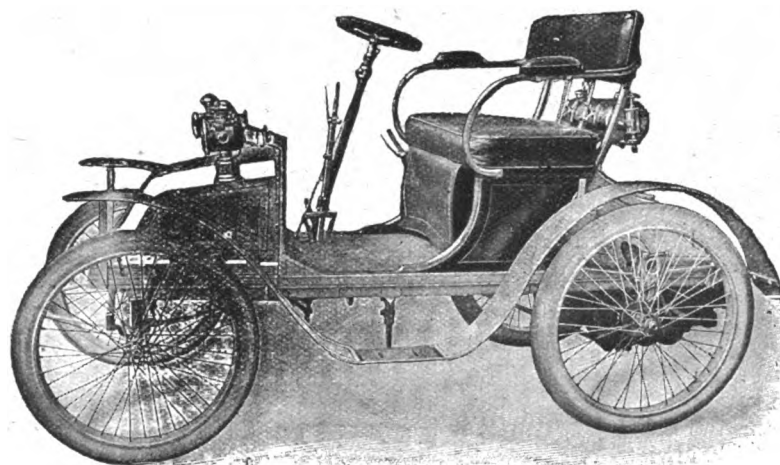
IN various respects this document calls for the severest condemnation. I dispute, in the first instance, the right to serve it in the manner which I have described. Had I driven into Hitchin at a somewhat rapid pace the constable in the marketplace might excusably have stopped me and handed me the leaflet as a salutary reminder that he might eventually be under the necessity of resorting to extremities in the shape of issuing a summons. But no; the mere fact of my having a motor-car appeared to render me in his eyes a suspect, and when I glanced at the document, gathered its purport, and put it in my pocket without reading it right through in reverent awe, he was so annoyed as to be scarcely civil when I asked for the address of a Hitchin firm. Now, I say deliberately that, without some measure of provocation, the policeman had no more justification for handing me or any other driver the notice above quoted than he would have to serve pedestrians with a printed intimation, for example, that watch-snatching was on the increase, and reminding them that stealing would render them liable to prosecution under such and such an article and section of the Larceny Acts. To treat a man as a suspect simply because he is seen dismounting from a motor-car is an abominable impertinence, and so far from wishing to direct such a criticism from the convenient shelter of journalistic anonymity, nothing would give me greater pleasure than to meet Lt.-Colonel Daniell face to face and express my views by word of mouth.

AND while charitably endeavouring to ascribe the best of motives to the Chief Constable of Hertfordshire in this matter I am bound to take into consideration the only facts in his career which have ever made me aware of his existence. Some years ago Lt.-Colonel Daniell issued an illegal placard, instructing cyclists *not to remove their feet from the pedals* when descending hills! This had to be withdrawn forthwith, and subsequently the Chief Constable became a cyclist himself and "coasted." Secondly, it was Lt.-Colonel Daniell who, at the Automobile Club conference with Chief Constables, endeavoured to burke the discussion in such a way as to make it appear that all present were in favour of the numbering of cars. When the only Chief Constable in the room who was a practical automobilist expressed his firm belief in the future of automobilism, and said that numbering was quite unnecessary, it was Lt.-Colonel Daniell who, instead of welcoming this valuable expression of opinion from one person who was competent to judge, brushed it aside in cavalier fashion, and "regretted that any attempt should have been made to destroy the unanimity of the proceedings." From which I was led to conclude that a desire for fair play and the quality of receptivity to new ideas were things it was scarcely logical to expect from Lt.-Colonel Daniell.

BUT if the issuing of his *pronunciamento* is open to question, an analysis of its terms finds the Chief Constable of Herts still more at fault. Really, one must need rub one's eyes in amazement at the magnitude of his claim in the fourth clause. "On each of these occasions it is incumbent on the drivers of motor-cars

to reduce their speed to such a space as would be safe and reasonable were the vehicle *drawn by horse* instead of mechanical power." As an individual automobilist I flatly challenge Lt.-Colonel Daniell to find one word in the Act which justifies this unwarrantable assumption, or even in the Local Government Board regulations which he has, singularly enough, confounded with the Act. The section to which he obviously refers is as follows:—"He shall not drive the light locomotive at any speed greater than is reasonable and proper, having regard to the traffic on the highway, or so as to endanger the life and limb of any person, or to the common danger of passengers." Where in this is the reference to the horse as standard? Within the limit of twelve miles an hour there is the obligation only to drive at a speed which is "reasonable and proper," and these adjectives must obviously be construed in relation to the particular circumstances of the traffic, coupled with the brake-power of the car, its compactness, and its qualities of quick steering. The horse is absolutely no criterion whatsoever, either in law or equity. It is bad enough that we should be forced to submit to the maximum of twelve miles an hour on the supposed basis of the quadruped's highest speed, but inside that ridiculous limitation a comparison to the horse is nothing short of attempted tyranny, and must be resisted accordingly.

THE BAILLEAU VOITURETTE.



THE BAILLEAU VOITURETTE.

WHILE naturally a good deal of our time, when visiting the recent automobile exhibition in Paris, was taken up in examining the latest productions of such well-known firms as Panhard, Mors, Delahaye, Decauville, Serpollet, etc., we did not omit to inspect, if but briefly, a number of the exhibits of small cars, and whilst doing this we came across a little vehicle which we deem worthy of illustration, if only on the score of the relatively low price at which it has been put on the market. Practically

speaking, the machine follows the lines of a motor-quadracycle, but instead of the riders being located one behind the other, they can sit side by side. The frame is of tubular construction, the engine being supported behind the rear axle, just as in the ordinary quad, the power being transmitted through a gear giving two speeds and free engine of the Dupont or Bozier type. The little car is fitted with inclined hand-wheel steering, and with foot and hand brakes. The cycle-type road wheels are shod with pneumatic tires, and furnished with wide mudguards. We have already mentioned that the car is relatively low in price. Fitted with a $2\frac{3}{4}$ h.p. De Dion motor, with water-cooled head, it is listed in France at only £96, while for an additional £8 a De Dion water-cooled (by natural circulation) engine can be substituted. The dummy bonnet in front, which is utilised as a tool chest, gives the car a smart appearance. M. A. Bailleau, of 61, Grande Rue, Longjumeau (S. et O.), the builder, is also making a specialty of converting motor-quadracycles to voiturettes on the lines of that illustrated, and has received so many orders for conversions that an immediate extension of his works has been rendered necessary.

A GREAT deal of surprise and no little amusement has been caused among the Chinese community in Hong Kong by the spectacle of a well-dressed Chinaman careering along the Praya on a motor-cycle.

THE NEW PEUGEOT CARS.

WE are this week able to illustrate two of the new types of Peugeot cars which are now being introduced into this country by Messrs. Friswell, Limited, the English agents. Fig. 1 shows the Baby Peugeot—a light two-seated vehicle with ample luggage room at the rear. The motive power is supplied by a vertical single cylinder engine of 5 h.p., carried under a bonnet under the fore part of a tubular frame. The ignition is electrical, while the water circulation is maintained by pump and radiators. Two speeds forward and a reverse motion, controlled by a single lever at the side, are provided.

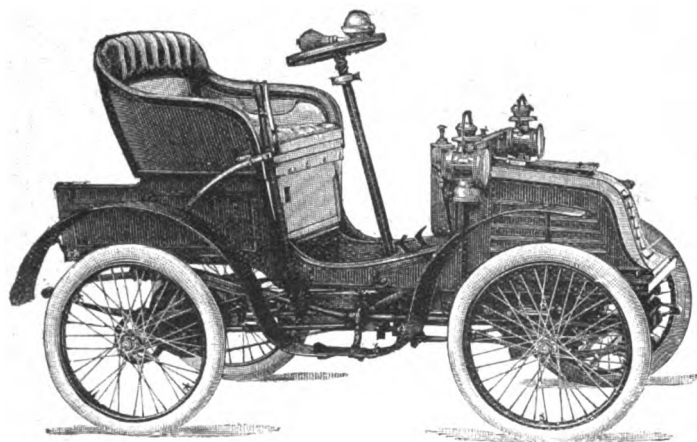


FIG. 1.—THE 5 H.P. BABY PEUGEOT.

The engine is connected by a friction clutch to the gear box, while from the latter the power is conveyed to the rear "live" axle by a universally-jointed shaft and bevel gear. A pedal, located close to the driver's foot, actuates a powerful band-brake on the differential gear; while there are hand-operated band-brakes on drums connected to the hubs of each of the rear road wheels. The petrol tank has a capacity of three gallons, sufficient for a run of about 120 miles. Inclined wheel steering, equal-sized road wheels of the cycle type, Clipper-Michelin pneumatic tires (650 x 65) are other features of the little car, which weighs complete about 5½ cwt., and which, in view of its relatively low price, should meet with a large sale in this country.

Fig. 2 shows the Peugeot 8 h.p. car, in which a number of novel features are to be found, more especially in connection with the vertical double-cylinder engine, which is set in the fore-part of a low-built channel steel frame, under a Mors-like bonnet.

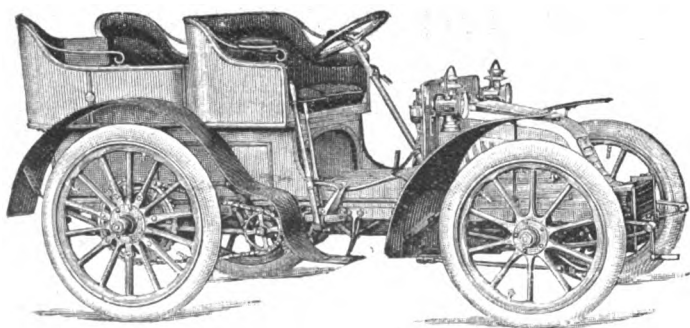


FIG. 2.—THE 8 H.P. PEUGEOT.

The engine, which runs at a normal speed of about 750 revolutions per minute, is fitted with duplicate ignition arrangements—incandescent tube, and the Simms-Bosch magneto-electric; pump and radiators maintain the water circulation, a feature of the gear-driven pump being its location in such a position that it cannot be damaged. Reversing the usual order of things, Messrs. Peugeot in their new double-cylinder engine have placed the

exhaust valve on the top and the inlet valve below, and operate the latter mechanically instead of by the suction of the piston. A governor is provided, which, should the engine exceed the normal speed, shuts off the petrol supply to the carburettor. As regards the transmission in the 8 h.p. car, three speeds forward and reverse motion, controlled by one lever, are provided; the arrangement adopted being very similar to that of the Panhard and Daimler systems, that is to say the engine transmits its power to the rear road wheels through the medium of a friction clutch, gear box, differential countershaft, and the usual duplicate set of chains and chain wheels. The car, which weighs complete about 14 cwt., is fitted with inclined wheel steering, pedal and hand lever operated band brakes, equal-sized artillery type road wheels, and 90 mm. pneumatic tires. As regards bodies, Messrs. Friswell intend to make standards of the *tonneau* and double-phæton types, the rear portions of each of which can be readily detached. In changing from horizontal motors at the rear to vertical engines at the front, Messrs. Peugeot have made a change which, while undoubtedly of a radical order, cannot by any means be termed a hastily-considered one, as an inspection of their latest productions will prove.

CONTINENTAL NOTES.

BY "AUTOMAN."

THE latest echo of the famous Paris-Berlin Motor-car race was recorded in the *Journal Officiel* a few days ago, where the name of M. Emile Mors, manufacturer of automobile vehicles, appears amongst the list of those to whom the coveted red ribbon has been accorded. As no doubt most of the readers of the *Journal* already know the Cross of the Legion of Honour is the distinction to which every Frenchman aspires, and those who are successful in earning it are entitled to carry a little red ribbon in their button-holes. M. Emile Mors, the head of the great concern in Paris, and the undoubted inspiring genius of the victories of the Paris-Toulouse, Paris-Bordeaux, and Paris-Berlin races, has now the Cross and red ribbon, which everyone will admit is well earned. His is the only concern that has been able to make headway against Panhard and Levassor.

SPEAKING of M. Mors takes me back in memory to the hot and dusty roads at the entrance to Aix-la-Chapelle and Hanover and to the racecourse at Berlin, waiting for the first glimpse of Fournier. All throughout that long and tiring three days, with its night journeys and long waits, I had the opportunity of making the acquaintance and appreciating the qualities of patient perseverance of M. Mors. Although he is thoroughly French, and Parisian at that, he is more like an Englishman in both appearance and manners—stout, small, and thickset, with long Saxon hair and beard and blue eyes, and a stolid, calm manner of speaking.

COMING back to Fournier, too, for a moment. I happened to be sitting with him the other day in the *tonneau* seat of a motor-car in the streets of Paris, and I was quite surprised to see how frightfully nervous he is when being driven. It was not that the driver was a bad one, but simply because he was being driven. I had the greatest difficulty, chaffingly, to induce him to light a cigarette and look the other way, and even when he did succeed in lighting it he could not smoke it, and this at a pace of about fifteen miles an hour!

LAST week I felt constrained to remark that it was raining automobile competitions in France, and I gave some particulars of the chief events. I find, however, that the list is by no means complete, and the Government now announces an official "alcohol" competition in May next, ending in an exhibition to be held

the last week in May. Alcohol is beginning to arouse interest, too, in Belgium, where a movement is on foot to get the Government to take off the tax on all alcohol employed for power, light, and heat, and to send a delegation to attend the French trials.

THE regulations for the Nice Cup have been somewhat modified by the A.C. of Nice. The following are the articles which have been changed:—Article 4. The Nice Cup shall be competed for every year, between March 1st and June 30th, over a route chosen by the member of the Club who holds the cup. Article 6. The race is open to all four-wheeled vehicles weighing more than 5 cwt., and less than 1 ton, etc. Article 11. For 1902 the date and the course shall be notified by the member of the Club holding the cup, after the necessary permissions have been obtained. Article 13. No vehicle will be classed that has not averaged over 18½ miles an hour.

WE shall soon again have the general interest aroused in the experiences of M. Santos-Dumont. His balloon shed is now completed on the shores of the Mediterranean, and the inflating of his airship has begun. In a very short time he will be out, this time above the ocean instead of over the tops of trees and chimneys. It is to be hoped that the sea will be as kind to him as were the roofs and trees, if he should happen to come down accidentally. Needless to say his faithful henchman, M. Emanuel Aimé will be there to report his prowess and second his efforts. For the present his experiments will be confined to journeys in the famous No. 6, with which he secured the Deutsch prize, and he will, after a few successful trials, attempt to fly over the sea to Corsica, a distance of about 120 miles. It is a hazardous undertaking, and few others besides the little Brazilian would dare to attempt it. True, he will be accompanied, or rather followed, by quite a fleet of fast yachts, but as he expects to do the journey in three hours an accident *en route* will leave little chance of help arriving in time to be useful.

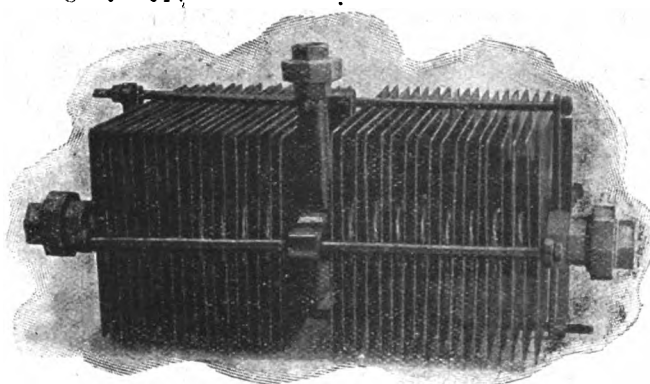
THE postal authorities in various continental countries are beginning to wake up to the superiority of the automobile over horse traction. It is I suppose a gradual transformation which will take place steadily during the next decade, when manufacturers have a little more time to devote to the business outlets of the trade instead of giving all their attention to the pleasure side. The Paris petrol postal vans are quite an institution now, and there is a movement on foot in Brussels to carry the postmen to the various points of the town and suburbs where their beats begin, by means of motor-cars instead of the horse-drawn vehicles employed at present for this purpose. A company is being formed for the purpose of contracting with the postal authorities to take over this work, at the same price that horse traction costs, the advantage being, of course, a quicker service. In addition to this a parcel post service by automobile is in the air and likewise a service from Brussels to Antwerp.

VERCINGETORIX, on his automobile chariot, has taken his last ride, and has at length arrived at his destination of Clermont-Ferrand safe and sound, and still brandishing the deadly weapon which gave Julius Cæsar's legions so much trouble. The motor vehicle that has carried this eleven tons of bronze is a De Dion and Bouton steam wagon with a 35-h.p. engine. All along the road the famous Gaul has caused a sensation, and it has been a grand opportunity for the stump orators of every little French "Slocum Podger" to air their rhetoric. However, he has arrived safely, and has done a great civilising work on his way by making many motophobes look more kindly on mechanical road traction.

MR. A. J. DAVIS, of Ringwood, Hants, asks us to mention that he has now storage accommodation for a number of motor-cars.

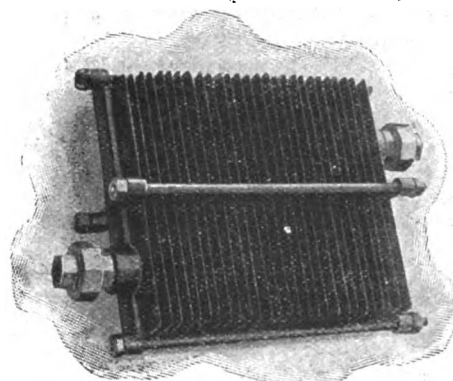
A NEW CONDENSER FOR STEAM CARS.

IN view of the recent police prosecutions in cases where white steam has been given off from the exhaust of steam cars when running, the means by which this trouble may be overcome are worth consideration. Given a sufficiently large area of surface exposed to the air, it is possible to condense the greater part of the steam, the residue being passed into the flue and burnt by the heated gases, but the difficulty hitherto has been to construct an atmospheric condenser, at a reasonable cost and at the same time neat and compact in form, so that it may be fitted under the body of the car without presenting an unsightly appearance. Messrs. Clubbe and Southey, who



have been experimenting in this direction for some time past remark that condensers with soldered joints sooner or later give way under vibration and leak. Those of tubular type are costly in manufacture owing to the large number of joints, and for the given amount of space they occupy do not altogether effect the purpose for which they are intended.

In most cases, considerable back pressure is produced in them caused by the "wire drawing" of the steam in the tubes, and the radiating plates, fitted on the tubes to increase the effective cooling surface, are liable to be choked with mud and are easily damaged when cleaning. In their new condenser, which we illustrate above, the objections to the tubular form are claimed to be overcome by substituting flat metal chambers between the walls of which the exhaust steam is caused to circulate; the joints between the elements are made with elastic washers, and are unaffected by severe and long continued vibration, there

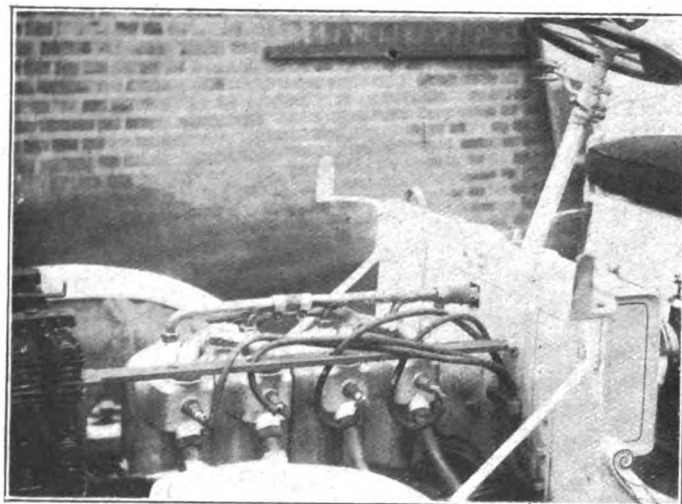
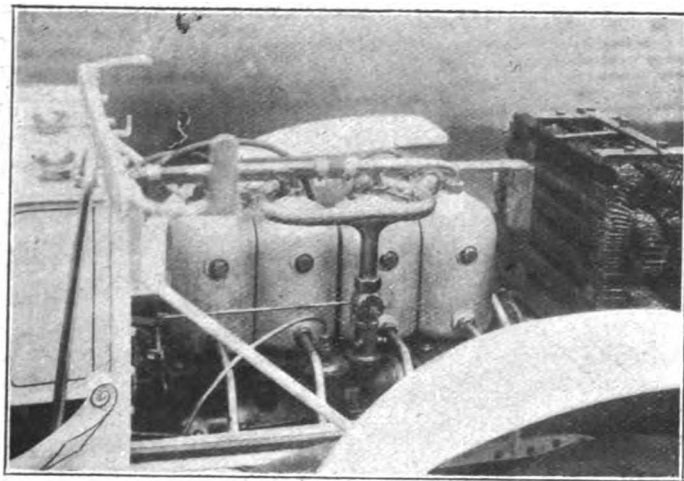


being a clear way of two squares inches area through it, after a few minutes' working. Another advantage claimed is that there is no back pressure. The elements are made of tinned iron sheets seamed together, and can be cleaned easily without fear of damage; they are held in a strong frame constructed of two gun metal castings, bolted together with steel rods which make all the joints automatically when clamping up.

In the condenser type the elements are connected in two sets in parallel, but the arrangement is also useful for radiators for cooling water on petrol cars, in which case they are coupled up in series as shown above. The condensers are being put on the market by the General Motor-car Works, 16, Elm Street, London, W.C.

THE NEW ORLEANS FOUR-CYLINDER MOTOR-CAR.

IN our issue of January 11th last we referred to a trial run we had experienced on the new four-cylinder car lately completed by the New Orleans Motor Company, Twickenham. We are this week enabled to publish some interesting illustrations of the new car, and to give a few particulars relating to it. We may first mention that the frame is of tubular construction, and, as will be seen, the four-cylinder engine is set in the fore-part, as usual under a bonnet. The normal speed of the motor is 850 revolutions per minute; it develops about 15 actual h.p., and is fitted with a governor acting on the throttle. The transmission is very much on the lines of the well-known 7 h.p. New Orleans car—that is to say, the power is transmitted from the engine to the



FIGS. 1 AND 2.—TWO VIEWS OF FRONT END OF NEW ORLEANS FOUR-CYLINDER CAR, WITH BONNET REMOVED TO SHOW MOTOR.

rear live axle through the medium of a friction clutch, gear box, universally-jointed shaft, and bevel gear. Four speeds forward, controlled by one lever, are provided, a second lever actuating the reverse motion. The car is built low and mounted on equal-sized artillery wheels, shod with 90 m.m. pneumatic tires. The illustration shows the vehicle fitted with a two-seated racing body, but, of course, other types, such as *tonneau* and double phaeton, can be fitted according to the desire of the customer. The vehicle complete weighs from 15 to 16 cwt.; it can attain a speed of about 36 miles an hour, while its hill-climbing capabilities are of a high order.

MR. ALBERT R. SHATTUCK, President of the Automobile Club of America, announces the following results of the census just taken of automobile owners in the Club: Total membership, 351; number of automobile owners, 254; number of automobiles owned by members, 358.

THE MOTOR-CAR IN FRANCE TO-DAY.

M. R. HART O. BERG, who has resided in Paris for the last ten years, and who has for most of that time been closely identified with automobilism, especially since the subject has become so widespread in general interest there, recently delivered a lecture on the above subject at the Automobile Club of America, before the largest gathering the Club rooms have ever held since the opening of the new headquarters. Mr. Berg, who is also a member of the A.C.A., commenced by saying that he had been asked to talk for an hour, the time it takes nowadays to run in an automobile over the ordinary country road from Paris almost to Rheims. With slight condensation the paper was as follows:—

Among the world's best examples of evolution that of the automobile has been more exaggeratedly rapid, more pronouncedly energetic than any other recent mechanical development. This terrific advance has not been without costly trials and experiments and a concentration of thought which, first finding its encouragement in France, still continues to hold the lead in that country. This is but natural. The topographical conditions of France lend themselves so well to the development not only of speeds and flying runs, but to long and continued excursions, which, added to the exhilaration of moderate speed, make touring both possible and enjoyable.

Less than ten years ago, the late M. Levassor, whom I believe to be the father of practical automobilism, using the hydro-carbon motor of Herr Daimler, tried again and again to construct a mechanically-propelled vehicle that would carry him but once around the fortifications encircling Paris without necessitating his stopping for repairs, or without his having some exasperating accident. It took him almost two years to fully accomplish this now almost ridiculously insignificant run. It was M. Levassor who first conceived the idea, as far as I know, of putting the motor in front of the dashboard, and it was due, I believe, to this disposition of the motor and the distribution of the mechanical parts of the carriage which necessarily follows when the motor is placed in front of the dash, that encouraged to ultimate success the various refinements which M. Levassor afterwards worked out.

The French are most prolific in ideas and have a power of concentration almost unlimited. No sooner is one machine built by a Frenchman than another is immediately planned by him to contain corrections and more recently developed practice, each individual inventor working well within the lines undertaken by him, and each one seemingly quite content to bring to perfection a specific organ or unit of the machine, disregarding in a measure the vehicle as an entity, led on, as it were, by the gratification experienced by him in realising the perfect working of one particular element or unit of the whole. In other words, the French type of automobile of 1901 is not the result of work of any one man or firm of builders, but the type has been practically worked out unit by unit by specialists who have made each particular organ a study of their own. For instance, M. Lemoine, the head of the firm of the largest French axle builders, has made a specific type of axle and hub which seems to meet the exigencies of road runs. Michelin has developed a tire, as you all know, to meet the conditions of the weights of French carriages and the peculiar roads which run through France. Longuemare has developed a carburettor of the float type which has long been recognised as standard.

Then comes the long list of motor manufacturers. Bouton of the De Dion Company, a man who even to-day can be seen from seven in the morning to seven at night in his blue blouse, superintending the manufacture of thousands of motors. Buchet, who has made a special effort to reduce the weight of high-speed motors. The little 20 h.p. four-cylinder motor which he manufactured for Santos-Dumont and which was used so successfully in all of the latter's experiments, weighed, I believe, but 82 kilos, and I am told that he actually got 24 h.p. out of this motor. I might go on and enumerate to you the names of men in France

who have in this way specialised and developed each particular organ of the now recognised types, and it is largely on this account that the French are to-day building carriages in which the element of experiment has been eliminated. There are three distinct types of automobiles manufactured in France to-day—the steam, the electric, and the petrol-propelled. In 1889 I spent most of the summer in Paris at the Universal Exhibition, and I was much impressed, as was everybody, with the boilerless steam-engine of Serpollet. In a small pavilion on the banks of the Seine Serpollet showed his little engine running, pounding, generating power, and using, as you all know, his capillary tube system. Serpollet was not long in building a motor-carriage in which he incorporated his little piece of copper tube, through which was pierced the smallest kind of a hole. Water was pumped through this, and by the application of heat, immediately produced steam, as it was needed, for his small single-action engines. Unfortunately, this hole soon became clogged: it was enlarged, and afterwards a series of tubes was used. Then Serpollet made a carriage with a device ingenious enough, regulating the supply of fuel and the supply of water, the relation of the proportion of these supplies being controlled by one lever. This is about the only steam carriage, other than those for heavy traction, which has appeared in France. It runs through the streets noiselessly, and is easily controlled, but I found as a result of experience that one had to have not only a knowledge of mechanics to run this carriage, but one also had to be on the constant alert at every change of grade, when more or less water or more fuel had to be sent to the flash tubes, and instead of looking at the scenery and enjoying the fresh breeze, the air often became blue

about me, and I became very tired of focussing my eyes on the jumping steam-gauge. I have seen very few other steam carriages of the light type running through the streets of Paris.

I now come to electric carriages. During the five years that I have run an electric carriage through Paris (and I was one of the first to have an electric carriage there), I have had but once what the French call a *panne*. I was just at the back of the Madeleine when I suddenly came to a stand. At that time there were not many electric carriages in Paris, and I was immediately surrounded by a gaping crowd. I sent a mechanic for the vehicle, and he found that a bolt had fallen into the motor and had broken a connection. I believe he fixed this in about five minutes and brought the carriage back to the charging station. I may tell you here of rather an amusing incident which helped to enliven a *fete* given some years ago at the French Automobile Club pavilion in the Bois de Boulogne. I had the pleasure of taking out Baron von Zuylen in my Columbia carriage to this *fete*. There were a number of electric carriages drawn up in the garden of the automobile pavilion, and while we were at dinner we were startled by a sudden cry of fire. I must tell you that it had come on to rain very heavily, and the downpour getting into one of Krieger's batteries, made a short circuit, causing his carriage to immediately burst into flames. I believe this is about the only instance I have ever known where rather a serious conflagration was brought about by too much water.

But these are all reminiscences, and Krieger soon found a way to protect his battery. To-day the Krieger type of electric carriage for coupes, victorias, landaulets, etc., is well established in Paris, and they have, I should say, perhaps 150 of them running about the streets. You will remember perhaps that this type of carriage has the steering and driving wheels in front; there are two motors, compound wound; the batteries are divided, part being in front and part in rear. The controller is vertical, having, I believe, at present seven positions, four ahead, one braking position, and two backward. The controller is of the recuperative type, and I believe works very satisfactorily. The control is hand operated and the lever is immediately beneath the steering wheel. This makes it very handy and quick in action. The front steering wheels with their attached motors, which now, by the way, are being hung on springs, are necessarily very heavy, and a big reduction in the steering gear is required. Pneumatic tires are used entirely on the front or motor wheels, while solid tires are being used on the rear wheels.

The Jenatzky type of vehicle is chain-driven, although this company has manufactured some carriages with two motors driven from the rear. Their distinctive feature, however, is a foot control in addition to the hand control; that is, a lever worked by the foot throws in more or less resistance and consequently regulates the speed of the carriage.

The firm of Jeanteaud has also constructed a number of electric vehicles, but rarely more than one or two of the same type, all of which, however, have features about them of the more or less automatic interlocking can't-make-any-mistake variety. Jean-teaud's motor has usually been hung on a frame, and the carriages have

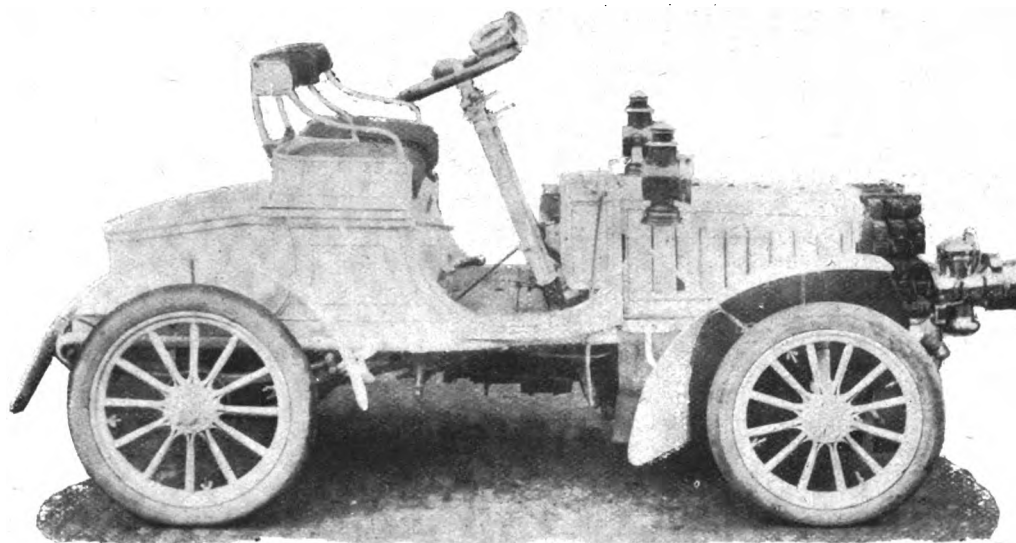


FIG. 3.—THE NEW ORLEANS FOUR-CYLINDER MOTOR-CAR. (See opposite page).

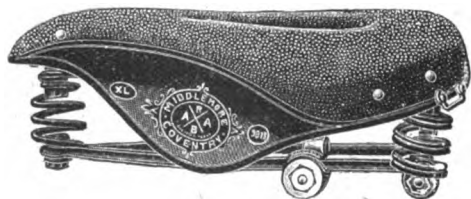
been chain-driven. There have been several other electric carriages built in Paris. Perhaps M. Milde has made more practical types than any other French manufacturer.

Let me here say a word about batteries which are so intimately connected with, and render operative, the electric carriage. I simply wish to recall to you the much-talked-of Fulmen type, which has very large capacity and more or less limited life. The Plante system has been almost entirely abandoned, as this type is too heavy for electric road traction. The Heinz and the Aigle battery, both being of the pasted plate type, are perhaps now used more than any others. The common pasted plate battery, such as is now produced by Heinz, one of the largest manufacturers, seems to work very well, is very cheap, and the positive plates can be changed at a small cost. Batteries of this type weighing under 500 kilos at a discharge of 20 amperes, have a capacity of about 140 ampere hours. A good feature of most of the French batteries, and one which has always recommended itself to me, is that each element of the battery is attached to its neighbouring elements by nuts and bolts. This practice has been carried to perfection in France, and when an element for some cause or another goes down in capacity, it can easily be removed and replaced by a new one, not necessitating any burning together, as was the practice at one time.

(To be continued.)

HERE AND THERE.

SINCE the introduction of motor-cycles Messrs. Middlemore and Lamplugh, Limited, saddle manufacturers, Coventry, have been devoting their attention to devising a saddle suitable for these types of machines. It has been evident to them that owing to a greater speed obtained on a motor-bicycle or tricycle it was



essential that a saddle should be produced that would minimise the extra vibration, and be sufficiently large to give a fair amount of comfort when the rider was not pedalling. The accompanying illustration of their saddle is the outcome of experience, and during the past few months one of our representatives has been testing the same on a motor-bicycle, and expresses himself well satisfied with it.

A WINTON motor-car has been tested at Utica, N.Y., in the collection of mails, and the vehicle covered the route in one hour and twenty-five minutes, as against over two hours taken by horse-drawn vans.

Two four-seated steam-cars recently made the journey from San Jose, California, to the Lick Observatory on Mount Hamilton, a distance of twenty-eight miles. The total height climbed was 4,400 feet, the first twenty-one miles having a rise of 2,200 feet, and the last seven miles 2,200 feet, or an average of 7 per cent.

ROME is about to adopt the automobile for postal service in the form of small vehicles, each of which will replace three carts and three horses. Preliminary experiments have demonstrated the rapidity of the mail transit between the various post offices and central depôt. It is now proposed to enter on a six months' trial, which, if found successful, will result in the permanent adoption of the motor mail cart, not only in the capital but also in the large provincial towns of Italy.

THE Brush Engineering Company, Limited, of Falcon Works, Loughborough, Leicestershire, are, we learn, commencing the manufacture of petrol motor-carriages. A car fitted with a two-cylinder engine of 8 h.p., at 800 revolutions per minute, is already on the market. This vehicle is of light construction, the weight complete ready for the road being 14½ cwt. It has a chain drive and equal sized wheels, fitted with 85 or 90 mm. tires. Two forms of ignition can be fitted, the standard being the Brush-Dawson magneto, but, in addition, the ordinary electric or tube can be provided. Two double-acting brakes are fitted, the sprocket bracket being especially powerful. The clutch spring is mounted immediately behind the single cone clutch, all parts of the clutch mechanism being therefore easy of access and adjustment. A four-cylinder 16 h.p. car will be completed next month, two of these vehicles being already sold to well-known automobilists. The weight of this machine complete will be well under a ton. The wheels will be of equal size, 870 by 90. With the exception that four speeds will be fitted instead of three, the car will be similar to the two-cylinder type. Both frames are made to the new standards adopted by the French makers, that is, the size of the frame behind the dashboard is, in the case of the two-cylinder car, 80 centimetres wide by 1 metre 75 centimetres, and the four-cylinder car 85 centimetres wide by 2 metres long. The wheel base of the two-cylinder car is 6ft. 6in., and that of the four-cylinder 7ft. 2in. The Brush Engineering Company already employ 1,500 men, and have a high reputation for general engineering work.

At Messrs. Mann and Overton's depôt in Mortimer Street, W., we were shown the other day the 1902 model Marshall car. It was fitted with a *tonneau* body, and the long wheel base and skew splash guards gave it a very rakish appearance. The engine, fitted under a bonnet in front, is of the well-known Bûchet type,

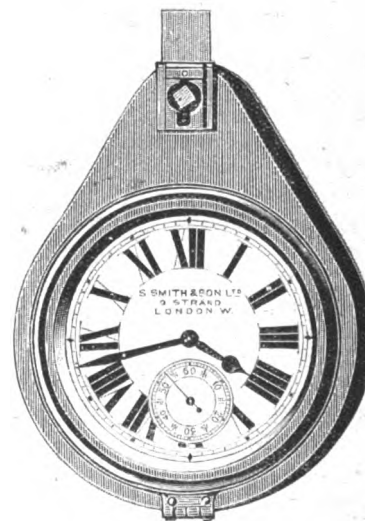
giving off 12 h.p. The gearing is of the usual Parhard type, giving three speeds forward and one reverse, actuated by a side lever. Equal sized wood wheels shod with Clipper-Michelin tires, 31½ in. by 3½ in., are fitted, to which the drive is carried through a "Cardan" joint on to a live axle. The compensated brake, the sprag abolished, and in its place a ratchet on the back axle, the governor of Marshall's design, the neat oil-tanks, etc., all show that much trouble and time have been spent on the details. A run round Regent's Park justified all we were told of the car, and unfortunately landed our driver in the police court, charged with driving at the rate of twenty-five miles an hour; he was also told that the limit of speed in the Park is eight miles per hour, a fact which we should think is not very generally known.

THE United Motor Industries, Limited, 42, Great Castle Street, W., ask us to mention that they believe some firm or individual in the suburbs of London are using the cans of their "D" oil and filling them with other and inferior quality lubricating oil, and selling it as genuine "D" oil. They warn the public to be on their guard against this form of fraud, and if they receive any oil purporting to be "D" lubricating oil, which does not appear to be the same quality and description as the genuine, to at once communicate with them.

A SIMPLE and yet effective arrangement has been invented by Mr. Lloyd, of the Quadrant Cycle Company, Limited, Birmingham, and applied to the "Quadrant" motor-cycles, whereby one lever combines the functions of the four usually required to manipulate the motor. This new single lever controls the supply of gas, the timing of the spark, the electric switch, and the valve-lifter, thus considerably simplifying the manipulation of the machine.

THE first annual "gravity feed" (dinner) of the Wolverhampton and District Automobile Club took place on January 16, Alderman Marston, J.P., presiding. An eight-course menu provided ample scope for many suggestive terms dear to the heart of the automobilist. "Float feed" stood for the usual thick and clear, followed by "water jacketed" (fish), "clutch levers" (oyster patties), and so on to "silencers."

ONE of the many useful accessories now frequently found fitted on the dashboards of motor-cars is a watch or small clock. Many forms of these are in use, but the accompanying illustration shows a timepiece which has been specially designed by Messrs. S. Smith and Son, of 9, Strand, London, W.C., for use on auto-



mobiles. The outer case, which is dust and rainproof, is made of hardened white metal, nickel-plated, and within it the watch is securely locked, the case itself being attached to the dashboard by screws, the heads of which are inside the case, thus making detachment of watch or case impossible. The movement of the watch, which is keyless with lever escapement, has been particularly designed to withstand vibration. The motor timepiece, as it is called—which, by the way, is not too large for the pocket—is carefully fitted into the locked case to prevent all shaking or damage, and has a distinctly printed dial.

IN our report of the Automobile Club Brake Trials a printer's error made "Flaneur" state that a car "when going at ninety miles an hour was stopped in 12½ yards." The speed should have been twenty miles.

IN answer to "Troubled," Messrs. Brandes and Perkins, of 178, Lockhurst Lane, Coventry, write that they are the general representatives of the makers of the ignition accumulators used by Messrs. Panhard.

LONDON EXPRESS MOTOR SERVICE, LIMITED, was registered last week with a capital of £20,000 in £1 shares. Object, to adopt a certain agreement, and to carry on the business of an omnibus company in all its branches (primarily between Putney and Piccadilly), with either steam, electric, petrol, or other power, etc. The first directors (to number not less than two nor more than five) are H. F. Highton, G. R. Roger, and G. E. Kent.

A FEW weeks ago we intimated that Messrs. Edward J. Morant and Hamilton H. M. Dent, two well-known New Forest motorists, proposed to open motor repairing works and a dépôt at Lyndhurst. We are now pleased to state that arrangements are so far advanced that there is every prospect of the new establishment opening its doors early next month under the name of "Imperial Motor and Cycle Repairing Works," not "New Forest" as we originally stated.

THE British and Foreign Motor-car Company, Ltd., has been registered with a capital of £10,000 in £1 shares. Object, to adopt an agreement made by this company with W. Price, and, generally, to carry on business as builders of and dealers in motor-cars and apparatus and implements connected therewith, and the component parts thereof, etc. No initial public issue. The first directors (to be not less than two nor more than five) are W. Price, of 50, West Derby Street, Liverpool, and H. B. Ingomalls, of Deane Road, Fairfield, Liverpool.

No one who has not had actual experience can appreciate to the full the delights of motoring on such a day as Sunday last in the London district. Well wrapped up, so as to be amply protected from the searching cold, the automobilist was a person to envy. The sun shone brightly, the air was as clear as the proverbial bell, fresh and invigorating in the highest degree, and everything conspired to set one's blood coursing through the veins at mill-race speed. We were only out for a short spin Richmond way, but even in that small distance we met quite a large number of motor-cars, tricycles, quads, and several motor-bicycles.

UNITED MOTOR INDUSTRIES, of 42, Great Castle Street, W., are issuing a new illustrated catalogue, in which "Loyal" radiators for water-cooled engines hold first place. An efficiency 50 per cent. higher, and a length of 25 per cent. less than any other radiator called upon to do the same work are claimed for the "Loyal." The long list of well-known cars fitted with this particular radiator are substantial guarantees of the genuineness of such claims. Other appliances connected with circulation, such as pumps, indicators, and pressure gauges, for which United Motor Industries are the sole British agents, are worth attention.

DENNIS BROTHERS, LIMITED, Guildford, of "Speed King" fame, have sent us a new and complete catalogue, in which their 8 and 10 h.p. motor-cars for 1902 figure conspicuously. The smaller car, a four-seated *tonneau*, is fitted with genuine De Dion-Bouton engine, is gear driven, with three forward speeds and reverse, will travel up to thirty miles an hour, is guaranteed to climb any hill on a main road, and turns the scale at something between 9 and 10 cwt. The larger car, 10 h.p., is seated for four or six, has a twin-cylinder governed engine, is practically noiseless, can travel at thirty-eight miles an hour on the flat, and mount a hill of one in ten at nineteen miles an hour. A convertible motor-quad (3 h.p.), which made a name for itself last year, appears, with certain improvements, this year. A 3 h.p. motor-tricycle, which carries with it a good record, has many points of simplicity to commend it. Lastly, the "Speed King" motor-bicycle with 1½ h.p. engine, easily detached, and capable of attaining a speed of thirty miles an hour, has many excellent points.

IMPORTS OF MOTOR-CARS, CYCLES, AND PARTS.

BELOW we publish our monthly official list of the imports of motor-cars and cycles and parts thereof into the United Kingdom during December, 1901.

Shipped From	To	Description.	No.	Value.
				£
Antwerp (Belgium)	Bristol	Motor car parts	—	80
"	Goole	"	1	120
"	Grimsby	"	5	1,900
"	Harwich	"	15	1,720
"	Hull	"	2	220
"	London	"	12	1,360
Brusse's	"	"	1	100
Ghent	"	frames	7	394
Ostend	"	machinery	—	282
"	"	"	4	783
Total Value of Imports from Belgium				£6,859
Bordeaux (France)	London	Motor cycle parts	—	5
Boulogne	Folkestone	" cars	13	3,510
"	"	" cycles	2	152
"	"	" cycle parts	—	114
"	Goole	Motor cars	2	180
"	London	"	2	300
"	"	" wheels	—	40
Calais	Leith	"	10	1,200
Dieppe	Newhaven	"	12	3,710
"	"	" parts	—	408
"	"	" fittings	—	230
"	"	" tires	—	14
"	"	" cycles	3	120
Dunkirk	London	Automobile parts	—	80
Havre	Liverpool	Motor car	1	260
"	Southampton	Automobile	1	240
"	"	Motor cycle	1	80
Marseilles	London	" car parts	—	80
Paris	"	" tricycle	1	50
Rouen	Glasgow	" car fittings	—	60
Total Value of Imports from France				£10,831
Bremen (Germany)	London	Motor wagons	4	2,675
Hamburg	Harwich	" car	1	160
"	London	"	1	250
"	"	" bicycle	1	25
Total Value of Imports from Germany				£3,110
Amsterdam	Goole	Motor car parts	—	4
Flushing	Queenboro'	"	1	100
Rotterdam	London	"	1	250
Total Value of Imports from Holland				£354
Boston (U.S.A.)	Liverpool	Motor car	1	140
New York (U.S.A.)	London	"	7	1,600
"	"	" parts	—	71
"	"	Locomobiles	6	735
"	"	" parts	—	425
"	Southampton	Electric cars	3	1,108
Total Value of Imports from the United States				£4,079
Value of Total Exports for December, 1901				£25,233
" " " " November, 1901				£34,574
" " " " October, 1901				£45,441

MOTORMOBILE, LIMITED, has been registered with a capital of £1,000 to acquire any patents and inventions in relation to cycles, motors, motor-cycles, motor-cars, or other carriages, to develop and to carry on the business of manufacturers of and dealers in cycles and motors, etc. The registered office is at 27 and 29, Laystall Street, Rosebery Avenue, W.C.

THE "automobile frown" is the latest result of automobilism. Dr. Carlton Simon (an American, of course) has discovered that with frequent riders on motor-cars "there is a distinct contraction of the muscles of the forehead and eyes, producing a frown which, by continued habit, remains in evidence upon the face." The "automobile wrinkle" will probably be the next development in this direction.

CORRESPONDENCE.

ACCESSIBILITY.

TO THE EDITOR OF *The Motor-Car Journal*.

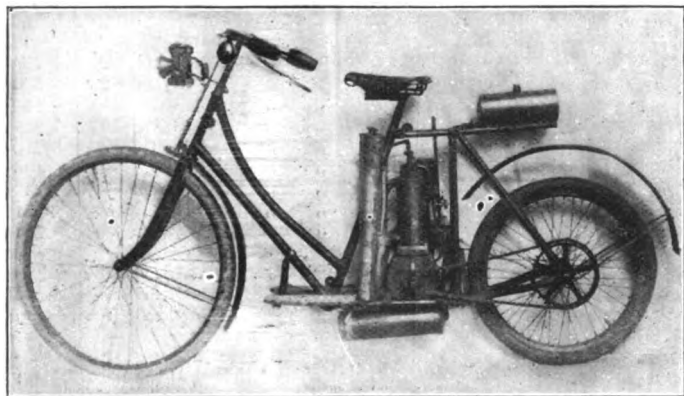
SIR,—I was somewhat interested in reading Earl Russell's account of a six days' tour in Sussex on my old Panhard car fitted with a Napier engine, in which he referred to the inaccessibility of the top of the gear case. This was one of the points that originally struck me when driving this carriage, and it has been entirely altered on the Napier, so that the removing of a very few nuts enables the whole gear case to be dismantled by the most inexperienced person. Points of this sort, although they do not appeal very much yet to many automobilists, will be great selling points in years to come.—Yours truly,

S. F. EDGE.

AN OLD MOTOR-BICYCLE.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Reading a comment in a recent issue of the *Journal* headed "Where do Old Cars go to?" I was prompted to send you the enclosed photo of what I should think is one of the earliest motor-bicycles made in this country. It was built by H. Taylor, cycle agent, of Kettering. You will notice by the photo that superfluous paraphernalia such as pedals were discarded. To mount required the acrobatic feat of running the machine along and jumping on from the side—no easy trick for an ordinary person to perform. The motor was water-cooled, had a spray



AN OLD MOTOR BICYCLE.

carburettor, tube ignition, and developed anything between $\frac{1}{2}$ to $1\frac{1}{2}$ h.p. This early automobile made its debut in Kettering about the middle of 1892, and had but a short and varied career.—Yours truly,

H. A. PALMER.

QUERIES RE DE DION MOTORS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I have a genuine $2\frac{1}{2}$ h.p. air-cooled motor (De Dion) complete with carburettor, silencer, coil, etc. After going to much trouble and expense, I have fitted it to a tandem bicycle. My trouble now is that I cannot get a regular make and break spark; the whole lot is new, including the "Meyra" battery, also the coil, which is, I believe, the old pattern having four terminals at one end, consisting of PP and MM and the usual sparking plug terminal at the other. I have wired it exactly according to the usual De Dion method, viz., the P and N of battery to the two P's on coil, and the two M's to the contact breaker (which latter I know is in perfect order), and the earth wire from the crank chamber to the brass band on coil farthest away from spark plug end. With this combination I get absolutely no spark at all. Now, after wasting much time and patience, I discovered that by connecting the battery to PP, one wire, however, passing through the contact breaker, the two M's on coil being connected in no way with anything with the blade in notch of cam, I could get a very fine spark by drawing the connecting plug sharply out of switch, the curious part, however, being that upon agitating the blade of trembler the plug would spark about once in ten times, although a large spark is visible at every touch between the platinum point and blade. Again, upon turning the starting handle, I could get absolutely no spark whatever. To make sure the wires are right I changed them, with a like result. From these experiments I gather that the two terminals marked M must be "shorted" inside the coil in some way, but would this matter if the two P's are carried through the contact breaker, in order, of course, to get the make and break that way. I have no instruments nor the knowledge to test the coil. In what way, therefore, can I find out if it is defective? On the other hand, if it is defective, how is it that I get a good spark by sharply withdrawing the connecting plug? Trusting that someone will enlighten me as to what is wrong.—Yours truly,

"PERIGRINE."

RENEWING SPEED GEAR WHEELS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Replying to Mr. Chas. T. Crowden's letter in your issue of January 11th, regarding my method of renewing a third speed on a Daimler gear sleeve, I would say, as one of the pioneers of the motor-car industry from the passing of the Act, and one of the first to take up Daimler cars on public seaside and private hiring services, that I claim to have gained a large and varied experience in reference to same, and I further claim during this time, simply from using ordinary intelligence and common-sense in dealing with a difficulty which everyone, more or less, has met with in reference to a Daimler car, to have met with no little success.

It is only right that credit should be given where credit is due, and as Mr. Crowden makes such a bold assertion that he was "the first one" to convert a Daimler gear sleeve, in order to arrive at this point, perhaps he will verify his statement by giving the date on which he first converted a sleeve on his system. For years I have been asking the Daimler Co. to supply a gear sleeve with a detachable third speed, and, although they have not supplied these with their standard type cars, they, in the early days, renewed third speeds for me as a special favour, and in confirmation of this I may state that I can, if necessary, produce invoices relating to charges made for converting sleeves to my order. I may state, however, that this system was not, in my idea, altogether satisfactory, as it necessitated specially designed and expensive third and fourth speeds, which were bolted together, and could only be used in conjunction with each other.

I am not applying for a patent for renewing a third speed itself, but upon what I claim to be an absolutely perfect system. Mr. Crowden states that he does not split his speed gear in two pieces, but maintains one solid ring. In the absence of any particulars, I take it that his system is similar to Mr. Gilbert's, which he also refers to, viz., cutting the sleeve in two halves to enable the third speed flange to be reached. Perhaps it will interest Mr. Crowden to learn that it was I who lent my good friend Mr. Gilbert the first Daimler gear sleeve he ever had to experiment upon, and that after its conversion the sleeve was used by me in one of my own cars for trial, and experiment. This system, as Mr. Crowden doubtless is well aware, cannot be considered an entire success, for many reasons. I have found the sleeve apt to twist where joined together, thus causing it to bind on the shaft, and there is also the great disadvantage that a sleeve must always be returned to the firm or person who converted it when future third speeds are required to be fitted. In my system the solidity of the sleeve is maintained, and anyone can fit future third speeds without calling in the aid of an engineer.

Mr. Crowden also states he has another method whereby he claims to be able to renew all of the speeds as required, but why is there any necessity for this? It is a well-known fact that the speeds on a Daimler sleeve are all detachable, except the first and second, and these require renewing very rarely indeed.

I do not claim any novelty in the mere fact of renewing a third speed, but for the system upon which it is renewed, and if Mr. Crowden will refer to the illustration showing my method of attachment, he will see that the flange dovetailing into the recess is the one vital point of the arrangement, and I claim that when bolted together with the four bolts the whole becomes as strong as the original solid third speed. Everyone conversant with a Panhard gear is aware that the drive of a fourth speed Daimler gear ring depends entirely on four bolts, whereas, in my system, my third speed, in addition to the four bolts, has the assistance of the deep recess and flange. Not only this, but after the sleeve has once been converted, the fitting of future third speeds is an exceedingly simple matter and can be done by anyone. Further, it is not necessary to interfere with the standard fourth speed in any way whatever. All the halves are made true to gauge, are interchangeable, and can be stocked and fitted in precisely the same manner as the present standard Daimler fourth speed rings.—Yours faithfully,

FRANK MORRIS.

THE MOTOR-CYCLE TAX.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I am writing to draw attention to the question of the motor-cycle tax. I am sorry to see that so little interest appears to be taken in the matter in connection with the new Motor-Car Act. I also think that the tax on small cars is unduly high, and should be lowered; the motor-cycle tax will be very heavy on cycle dealers when motor-cycles come to be much hired out.—Yours truly,

CECIL JACKSON.

MOTOR-CARS FOR THE TROPICS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Replying to Dr. Fowlie's letter in your issue of the 11th inst., we do not think the humidity of the atmosphere in the Straits Settlements would be likely to prevent the satisfactory working of a petrol motor-car. Thanks to the courtesy of Sir Fred. Abel, of the Imperial Institute, we have a summary of the meteorological observations taken at Singapore during the year 1900. He gives the mean temperature of the air there as 80° F., the computed vapour tension as nearly nine-tenths of an inch, and the mean humidity as 79 per cent. of the possible maximum. The meteorological reports show that the humidity of the air at Kew for the same year was also about 80 per cent. of the possible maximum, but, the mean temperature in this country being only about 54° F., the absolute amount of moisture in the air was only about one-third of that present at

Singapore, the average tension of vapour at Kew being computed as .34 of an inch.

It would not be difficult, however, for Dr. Fowlie to satisfy himself about this by testing the motors in a sort of Turkish bath atmosphere under such conditions as may be considered normal, say, at Singapore. The temperature of a small workshop—windows and doors being closed—might readily be raised by means of steam pipes, say to 80° or 90° F.; wet steam might then be gradually introduced into this room until its atmosphere became saturated with it, or, at all events, until it had taken up about 80 per cent. of the moisture it was capable of carrying. If the motors on trial were then tested, with satisfactory results, we think the Doctor would consider he could safely run the risk of taking them out with him. Of course, care should be taken that the motors had a fair trial under these peculiar conditions. Everyone knows that the carburettor has to be constantly adjusted so as to produce the best results even under the varying conditions of our own climate. It would probably be found that the proportion of air to petrol vapour which should be introduced into the cylinders of the motors to produce the greatest efficiency, would be different when moist air at 80° F. was used from that which gives the best results under the normal conditions prevalent in this country.

Dr. Fowlie says we omitted to state what the flash point of petrol really was. We said in our letter, "Petrol flashes at the ordinary temperature of the atmosphere or even at the lowest temperature known in this country," when tested by the Abel close test, as prescribed in the Petroleum Acts. Perhaps we should make our meaning clearer by saying that, whether the temperature of the air is, say, 10° F., which we suppose is about the lowest winter temperature in this country, or whether the temperature is 100° F. or any other temperature known to us, petrol, when gradually heated from some lower temperature in an enclosed cup, as prescribed in the Petroleum Acts, will give off such an amount of inflammable vapour as will ignite when brought into contact with a flame. The lowest point at which petrol will flash when brought into contact with a flame has, we believe, never been determined. It will certainly flash below 10° F. Dr. Fowlie believes that in the Straits Settlements no oil whose flash point is below 78° is allowed to be imported. We think he will find that he is mistaken in this, because our firm have shipped benzine, petrol, etc., to Singapore, and we have never heard that it was illegal to do so. It will most likely be found that the law of the Straits Settlements is probably much the same in this respect as the law of England, and that no mineral oil of a flash point of less than 73° may be imported except under certain specified conditions as to landing and storage. It is very possible that this is just where the shoe will pinch, and Messrs. Roots and Venables have drawn attention to what seems to show that this same difficulty undoubtedly exists in India, and they give one instance where on account of the excessively high price of petroleum spirit the cost of the running of a Benz car was as much as 5s. per mile. We would submit, however, that this is a case where our cousins, "the Britons beyond the seas," must help themselves, as we in this country have had to do in the past.

We all look on "The Locomotives on Highways Act" of 1896 and the Regulations issued by the Secretary of State under that Act, which, under certain conditions to ensure safety, permits the free storage without a licence of 60 gallons of petrol, as the Magna Charta of automobilism. Previous to that Act Mr. F. R. Simms had introduced Daimler motors into this country, and Mr. Hewetson Benz motors, but the efforts of these and other pioneers of automobilism would have been of no avail unless Sir David Salomons, the Hon. Evelyn Ellis, Dr. Redwood, and other men of light and leading, had seen the great possibilities of automobilism, and had used their influence to get the law altered which for so long a time had stood in the way of all progress in this country. We may add also that progress would have been very slow even then had not the Automobile Club so ably followed up these early efforts. For these reasons, therefore, we would appeal to Dr. Fowlie, to your correspondent in the last issue of the *Journal*, Dr. Rowland, and to other Britons beyond the seas, who believe in the great value of automobilism, especially in tropical countries, and who still labour under artificial restrictions, to approach their local Legislatures with a view to amend the law. We can state with full confidence that the authorities at the Home Office, if appealed to by the authorities of India or the Colonies, would be very glad to give them the results of their experience, so that rules could be framed which while securing public safety, would not kill automobilism by prohibitive regulations. If the industry were put on a proper footing there is no reason why petrol in India should cost much more than it does in many parts of this country. Unfortunately, however, it is not only with the legislators that there is difficulty. Some of the steamship companies refuse to carry petrol, even when it is packed under such conditions as would make an accident practically impossible. We have had a continuous experience of nearly forty years in shipping such liquids and, when packed under conditions which we would contend are amply proved by this experience to be suitable, we have not known of a single accident. Yet some steamship companies will not carry petrol at all, or only as a great favour. The consequence is, there is often a great delay in making shipments, and a large proportion of the trade is likely to be diverted to Germany or the United States, where the shipbrokers are less prejudicial or less bigoted. —Yours faithfully,

For CARLESS, CAPEL, AND LEONARD)

WM. J. LEONARD.

THAT WONDERFUL MOTOR.

To THE EDITOR OF *The Motor-Car Journal*.

SIR,—Since April last, when I read some remarks of the *Journal* as to the invention of a wonderful new motor, I have carefully searched your

columns week by week, but without result, as far as the new motor is concerned.

Where is the motor that Mr. Engleheart had seen in Paris, and which, it was stated, would use the crudest petroleum, that has so perfect an exhaust, and that enables all needful manipulations to be controlled in one switch? Is it a fairy tale, or shall we see it at the Exhibition in April next? —Yours truly,

ROBERT J. BIRT.

GOVERNORS OF DAIMLER CARS.

To THE EDITOR OF *The Motor-Car Journal*.

SIR,—I shall be glad if some of your correspondents would kindly advise me as to the desirability of removing the governor in a 6 h.p. Daimler car that has electric ignition, and say what would be the advantages or disadvantages of so doing. Could the valve rods then be made straight and without joints, i.e., simplifying the engine? I shall be glad also to hear of any other points that may be of value while the car is under repair. —Yours faithfully,

"TURNER."

MOTOR BICYCLES FOR 1902.

To THE EDITOR OF *The Motor-Car Journal*.

SIR,—With reference to Mr. A. J. Westlake's letter on the above subject, I may say that my cycle-motor has a cylinder bore 2½ in. by 2½ in. stroke, and the weight of the fly-wheel (there is only one) is 9 lbs., the diameter of same being 10½ in. Needless to say, the fly-wheel is outside the crank case. I find it to be of ample power, for I can start the engine by hand, if necessary, by pulling over the first explosion; and, moreover, the machine will drive quite steadily at about three miles an hour, which is a comfort sometimes in a crowded street. As regards the bicycle motors which Mr. Westlake has designed, I note that he has been sufficiently generous in the amount of metal which he has put into the fly-wheels, which I presume are of the enclosed type. This point is where the bicycle people seem to go wrong. In a well-made motor I recently examined (the Thomas), with cylinder 2½ in. by 2½ in., the discs were 5½ in. over all dia. and section of rim 1 in. by 1 in.; the combined weight would be about 9 lbs., and no attempt was made at balancing. Naturally, the vibration of the frame when the engine was running was excessive. I should be glad to know what transmission Mr. Westlake proposes to employ on his new machine, with 80 mm. by 180 mm. engine. Even with my motor, which is small in comparison, I find a 1 in. belt an improvement on one ¾ in. wide, but in the present instance no doubt a positive drive will be employed. —Yours faithfully,

W. M. W.

MESSRS. HUTTON AND COMPANY, of Warminster, Wilts, have just brought out a new double-lifting jack for motor-cars, somewhat on the lines of the Ailsa Craig.

At the quarterly meeting of the Kesteven Joint Committee, held last week, Mr. William Hutchinson called attention to furious driving of motor-cars on the Great North Road, and asked if the new Chief Constable could not be instructed to look a little more strictly into the regulation of the pace. The Chairman said it was a question which the Bench might mention to police superintendents. Sir Hugh Cholmeley remarked that people seemed to think they ought not to set traps to catch motorists. Mr. Hutchinson said reckless motor driving was not seen on one day only, it was an every-day occurrence.

IN this country, as in France, riders of the motor-quad, whilst admitting the handiness of the type, are alive to its discomforts, especially those of the back rider. The Princes Autocar Company, Northampton, are, we hear, introducing a voiturette which we think will make a favourable impression as a more comfortable and convenient substitute for the quad, especially as its price will not exceed that of the latter. It is an up-to-date model car in miniature, with two-seated light body on tubular frame, 4 h.p. Aster water-cooled engine, two-speed gear, inclined wheel steering, and pedal and lever brakes. On the high gear the car will attain a speed of twenty-five miles an hour, and on the low gear will, it is claimed, mount the worst of hills found on main roads. The Princes Company are also introducing a chain-driven motor-bicycle fitted with progressive engagement clutch. The engine is of 1½ h.p., and it is claimed that this machine is a long way ahead of any belt-driven bicycle in the application of the power of the motor. The clutch provides a free engine at will and renders any exhaust lift mechanism unnecessary, whilst the engagement can be made so gradually that the bicycle is put in motion without appreciable jump or jar. A new system of breaking the electrical circuit is used, which dispenses with the use of the switch handle.

CLAIM FOR MATERIAL SUPPLIED.

At Lynn, William S. Millett sued Frank Morriss, London Road, Lynn, motor manufacturer, for £1 5s. 8d. for materials alleged to have been supplied. Plaintiff's case was that he had made several motor-car bodies for the defendant, the last being a *tonneau* for which he had received £11. When that one was finished defendant said, "You can start on two more like that, and order the stuff immediately." Accordingly witness ordered some wood (oak, poplar, and American white wood) and also several locks for tool boxes. He commenced work on the two cars, cutting out the sides. He had not at that time delivered the first *tonneau* car, and when he delivered it defendant said the price of these two bodies was too dear and he could not take any more at the same price and offered £8 10s. Witness told him that he could not sell them at that price, and reminded him that he had given an order for two more and that he (witness) had bought materials. He then asked the defendant to take the materials off his hands, or refund the outlay, producing the invoices for them to show what he had paid, but defendant only offered 10s. Defendant said that during a conversation after the other cars had been completed plaintiff asked about future work. Witness reminded him that the work he had just completed was in the nature of an experiment, because aluminium was used, and he (Mr. Morriss) was convinced that they could be made much cheaper. Plaintiff then asked him his price, and he (Mr. Morriss) replied that it would be, roughly, about £7 or £8 and that he (plaintiff) could go on building two more bodies at that price. A little while afterwards plaintiff sent a quantity of wood to witness' premises, for which he (Mr. Morriss) subsequently offered 10s. George Wright, foreman coachbuilder, valued the wood in question at 9s. His Honour held that plaintiff was entitled to recover, and gave judgment for the amount claimed with costs.

FURIOUS DRIVING.

At Ayr, before Sheriff Campbell Sharp, E. J. Thomson, Montgomery Castle, Tarbolton, was charged with driving a motor-car beyond the regulation speed of twelve miles an hour. Accused pleaded guilty. The Fiscal said what called attention to the contravention was that a woman was nearly run down at a crossroads. This was the first prosecution of the kind in Ayrshire. It was the case that there had been considerable complaint and cause for complaint on the part of persons using the roads for other purposes than for motor-cars. Mr. J. E. Shaw, who appeared for accused, pointed out that there had been no injury to anyone by the action of accused, who was known as a careful driver. The Sheriff said the regulations must be respected, and imposed a fine of £2.

NO RED LIGHT.

AUTOMOBILISTS are largely unaware that they must either have visible red glass at the back of their side lights or exhibit a red light at the rear of the motor-car. For infringing this rule Mr. William Warren was fined 10s. at Slough last week, when he pleaded ignorance of this regulation.

LAUNDRY CART v. MOTOR-CAR.

MESSRS. GARDINER AND Co., who trade as clothiers under the style of the Scotch Stores, Limited, last week sued, in the King's Bench, the Anglo-American Laundry, of Lower Tooting, to recover damages for injury to a motor-car. Mr. Glyn, K.C., and Mr. Spence appeared for the plaintiffs; and Mr. Spencer Bower represented the defendants. Mr. Glyn said plaintiffs' case was that their motor-car, which was used for the delivery of goods, was, about one o'clock in the day of May 6th last year, standing outside their premises at Chapel Street, Edgware Road. The driver had just started his motor when the defendants' van, rapidly driven round the corner from the main thoroughfare, on the wrong side, collided with the motor-car. Plaintiffs' driver bore out the statement of counsel, and said he did not see the van before it struck the car. It came so quickly. In cross-examination by Mr. Bower, witness said the petrol for the car, which travelled sixty miles a day, cost £1 a week or more. He did not know anything about the cost of horses and vans. The jury returned a verdict for the plaintiff, with £40 damages and costs.

ALLEGED BREACH OF WARRANTY.

In the Brighton County Court, Akler v. Duck and Harris, a part-heard case was concluded, in which John Robert Akler sought to recover from Duck and Harris, 163, Western Road, motor-car agents, £25 as damages for a breach of warranty upon the sale of a motor-car. Mr. J. C. Buckwell now appeared for the plaintiff and Mr. E. M. Marx for the defendants. At the last hearing the case for the plaintiff—which was that he agreed to buy a hundred-guinea motor-car on the defendants' representation that it was a De Dion, but that after paying deposits amounting to £25, he found it was a Cudell car with a De Dion motor—was closed, and the defendant's case opened. Mr. Buckwell now asked his Honour to be allowed to amend the form of the claim. Mr. Marx opposed, and his Honour said the matter could stand over for the present. If he found a substantial case for giving plaintiff judgment he would amend if there

was any form standing in the way. Evidence for the defendants was then continued. H. C. Harris, one of the defendants, said that prior to October 17th the plaintiff made several trips in the car, and on that date he came back from a trip to Rottingdean, and said he was perfectly satisfied with the running of the car, and that he would have it. Next day he paid a deposit, and witness gave him a receipt. Subsequently plaintiff suggested that they should sell the car for him. In cross-examination, witness said he gave the plaintiff a receipt in which he described the car as a genuine De Dion voiturette, and he still contended that that was a proper description of it. He knew at the time that the body of the car was made by Cudell. Messrs. Williams (manager to Friswell, Limited, Holborn Viaduct, and D. Weigell (Managing Director of the British Automobile Commercial Syndicate, Limited), both gave expert evidence to the effect that the description of this car as a De Dion voiturette was perfectly correct. His Honour said that had plaintiff been entitled to a judgment he would have allowed any reasonable amendment of the claim; but as far as misrepresentation, which was the main part of his case, was concerned, plaintiff failed altogether, and he dismissed the action with costs.

NO LIGHT AND A SMASH.

At the Kidderminster County Bench, last week, Edward Marsh, metal dealer, was charged with having, on December 4th, driven a vehicle along the Bewdley Road without a light. Mr. Thursfield, instructed by the police, appeared in support of the charge, and Mr. Norris Foster (instructed by Mr. H. G. Ivens) for the defendant. Mr. Thursfield said that, owing to the defendant not carrying a light, a serious accident occurred. Mr. Rowland B. Worth and Mr. T. S. Smith were going along the Bewdley Road in a motor-car, when out of the darkness a horse and cart loomed up. The next moment Mr. Worth, who was driving the motor-car, found himself under the horse's neck. The car was practically wrecked. There was no light on the cart, which was defendant's, and it had been seen further along the road before this without one. Defendant admitted his lamp was not alight when the accident occurred. It had gone out previously, and he walked to the top of Lea Bank by the side of the horse. He was actually in the act of relighting his lamp when the motor-car dashed into him. The Bench said they had carefully considered the case, and should dismiss it.

MR. J. S. CRITCHLEY has resigned his seat on the Board of the Daimler Motor Company, as the Brush Engineering Company, of Falcon Works, Loughborough, and the British Electric Traction Company are entering into the manufacture of motor carriages.

THE Long-Acre Motor-Car Company, Limited, has been registered with a capital of £10,000, to carry on business as manufacturers of and dealers in motors of every description, and all apparatus and implements used in connection with the same. The management and control of the business of the company will be vested in Claude Browne (as the first manager).

MESSRS. MALICET AND BLIN, of Aubervilliers, near Paris, have sent us a copy of their new catalogue of motor-car parts. This firm appears to make a speciality of gear wheels of every variety and shape, differential gears, change-speed gears for motor-cycles and cars. Pumps, Cardan shafts, universal joints, and steering gears are other products of this firm, whose catalogue should be in the hands of all constructors of motor-cars.

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COMMENTS.



MR. WALTER LONG has intimated that he will receive a deputation from the County Councils Association who desire to support the following resolution on light locomotives unanimously adopted by their Executive Council:—“(1) That the general law of the land for all vehicles, as extended by the special regulations issued requiring the drivers of motor-cars to stop on the request of any police-constable or of any person having charge of a restive horse, if scrupulously observed and rigorously enforced, is at present sufficient to secure the public safety provided that each motor-car has affixed to it some number so as to afford an easy and complete means of identification; (2) that it is desirable that the statutory limit of speed be abolished; and (3) that the present penalty clauses of the Highways Act are insufficient as applied to motor-cars.”

A Good Move.

At a meeting of the London County Council last week, Mr. Foster moved: “That, in consequence of the growing evil, resulting in loss of life and injuries to persons, damage to business, and danger and delay to vehicular traffic, caused by the frequent and continuous opening of roads, it be referred to the Highways Committee to consider and report as to the best means for the Council to procure such statutory powers as to secure that all persons or companies having Parliamentary powers to open the roads shall be compelled to give adequate notice to the Council before exercising such powers, and that the Council shall have the power to make such regulations, and have such supervision as will ensure such work being done expeditiously, and with full regard to the public safety and business interests.” Captain Swinton seconded the motion, which was agreed to without discussion.

A Measured M Dover.

THE increase in the number of motor-cars passing through the town of Dover has caused at least one of the local town councillors to think. And, having thought, he has gravely suggested to his colleagues that a measured mile should be marked in one of the thoroughfares of the town and policemen with stop watches stationed at each end to test the speed of motorists passing that way. The idea provoked some discussion but no decision was arrived at. Probably the next proposal will be the erection of a fence against motor-cars or ploughing up a section of roadway to give them trouble.

A Scheme for Cheshire.

MR. CHAPLIN and others intimately interested in the agricultural industries of the country, have declared their belief in the value of the motor-car, so far as the development of the rural districts are concerned, and after much discussion of the automobile by the farming authorities of Cheshire a prac-

tical scheme has been drawn up by Mr. C. Basil Nixon. Mr. Nixon suggests that a company or syndicate of the agriculturists of North Cheshire should be formed with three specific objects: (1) the maintenance and repair of motor-cars, (2) the carriage of produce and goods, (3) warehousing and merchandising farm produce. Steam lorries are suggested for the work, and these would be “stabled” in a depot in the vicinity of Alderley Edge, while at that place and at Manchester arrangements could be made for the storage, cleaning, and repairing of automobiles belonging to private gentlemen and trading firms. The advantages of the employment of motor-vehicles are numerous, and the saving in carting to and from the respective stations at each end of the journey would be a substantial item. So far as the initial stages of the experiment are concerned three routes will be selected for the transit of milk, radiating from Alderley Edge, and having their extremities at Broken Cross, Marton, and Tibley Lane End. The cars would travel from these points to the Manchester depot, carrying fifty-six railway milk churns and moving at the rate of six miles an hour. The scheme proposed by Mr. Nixon is worthy the consideration of agriculturists and the co-operation of automobile manufacturers.

On the Portsmouth Road.

THE numerous automobilists who weekly pass through Guildford will be interested to hear that the awkward detour at the foot of the town will no longer be necessary for them. After a phenomenally long period of rebuilding, the old bridge is to be at last reopened to traffic on Tuesday next (the 4th inst.), and the numerous narrow shaves caused by the barricade at the foot of the steep High Street (fortunately unaccompanied, as far as we know, by any motor mishap, though we recently saw a carriage with wheel smashed by the unexpected turn) will be things of the past.

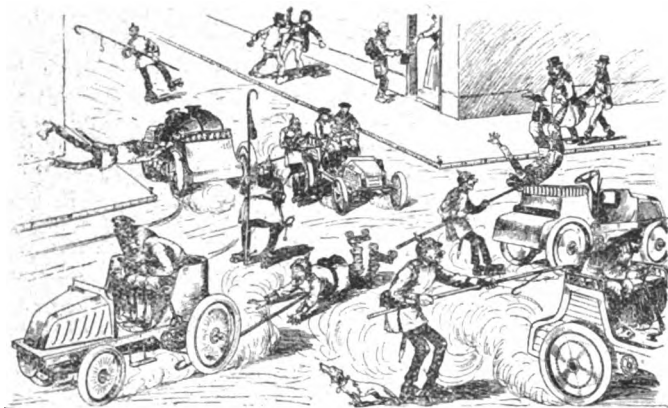
Engineers and Motor-Cars.

Dr. OLIVER LODGE, the Principal of the University of Birmingham, has been addressing the Engineering Society at the University on the advances to be immediately expected in the applications of science to ordinary life. He said he hoped to see a great development of the motor-car industry and especially of motor-waggons running on improved roads, and opening up agricultural districts. He urged the desirability of differentiating the traffic of a city—keeping some routes for quick vehicles, whether horse or motor, others for waggons and heavy traffic, and others for electric trams, etc. The Institution of Junior Engineers at their annual dinner on Saturday also heard something of the motor-car, Sir Alexander Binnie saying that we had got to a point where the roadways could not be maintained under the continual hammering of the horses' hoofs. While he spoke in high terms of electric traction he mentioned another method of locomotion which was rapidly coming to the front. Unfortunately, it was not coming so quickly as might be owing to the checks of legislation. Parliament had entirely misunderstood what was to come in the near future. They could look forward to the abolition of the horse on the public roads. The motor-car had come to stay, and it

was their duty to try and make it more sightly. It was a splendid mode of locomotion; but though it required improvement, still more it needed to be released from the trammels placed on it by short-sighted legislation.

The Future of the Police.

BRITISH motorists will sympathise with their German *confreres*, who, according to the artist of *Das Schnauferl*, have anything but a peaceful time. It is easy enough to deal with the motorist, but he has to be caught first. Therein lies the difficulty which the German police may eventually overcome by the adoption of roller skates for their pedal extremities and the use of long hooked sticks for arresting the motorists. While the enthusiasm of the police is thus finding vent on the roadway, the citizens may be developing the art of muscular development begging from door to door, and picking pockets with



impunity. Such is the prospect pictured by the artist, who thus conveys a timely hint to the police to mind their own business and leave unoffending automobilists alone.

Trials for 1902.

UNDER the chairmanship of the Hon. J. Scott Montagu, M.P., a meeting of manufacturers and others interested in the automobile industry has been held at the Automobile Club, to consider the question of trials to take place this year.

After much discussion it was agreed to have a trial as soon after the Coronation as convenient, that it should be limited to six days' duration, and that London should be the centre, the daily runs of from 123 to 164 miles, starting from and concluding in the metropolis. The organisation of the event will be in the hands of a committee of eighteen members, nine of whom will be appointed by the Automobile Club, the representatives of the trade being Messrs. Astell, Austin, Burford, Chambers, Critchley, Edge, Jarrott, Letts, and Lisle. With regard to the awards of the judges, it was resolved that they should follow actual results, and all points in reference to competing cars for which marks are given to be published with reasons for the same. Another suggestion which was made was that trials of delivery vans, the brake horse-power of motors, and the efficiency of transmission by registering brake horse-power on road wheels should be held. Discussion also took place with regard to the reliability of cars, and a proposal that makers should run cars under Club observation for 200 miles per day over a lengthy period was referred to the Organisation Committee of the Club.

"Cranks."

NOR the least instructive portion of mechanical exhibitions is that supplied by the "cranks," whose exhibits, if not serving as an excellent illustration of some natural law by their flat defiance of it, are frequently half-fledged anticipations of some principle which will reappear under more suitable conditions later on. It would be of interest to note how many

ideas which have fallen flat or been classed as fads at the cycle shows of the past twenty years have developed into more or less essential parts of modern automobilism; even the ordinary steering-wheel was applied in lieu of a bicycle handle-bar long before its use on modern cars, while the spring sprocket, to equalise driving effort, had its origin there some years previous to its reappearance—with rubber instead of steel buffers, a doubtful advantage—as an automobile component. The difficulty and expense of automobile experiments serve to keep most of the eccentric inventors away from motor exhibitions; but a good deal of harmless amusement, and possibly now and then a good idea, is lost thereby. Hence every encouragement should be given to the man with ideas.

The Decline of the Two-cylinder Engine.

A GOOD deal has been said lately about the diminishing number of two-cylinder cars that are produced, the statement, of course, rather referring to the trend of the industry in France than in this country, and being therefore interesting as a symptom which may probably show itself on this side in due course. It can hardly be said that it has done so yet, and the causes at work on the other side that have conduced to the popularity of cars with a rather large one-cylinder engine are not far to seek. A better appreciation of the value of speed with, it must be admitted, a concomitant indifference to durability, have led to a demand for the maximum of power at the lowest price among the purchasers of small cars. The development of the De Dion type of engine has provided a way of meeting this, and the practical success of the result has somewhat obscured the fact that if four cylinders are worth their price on a big car, two have an exactly proportionate value on a moderate-sized one, and it cannot be very long before the wheel will turn again in their favour. Though a perfect torque, at least approximately, can only be obtained by the former, the latter will give what is much more important, namely, a perfect balance of reciprocating parts, and it may be reasonably surmised that a two-cylinder motor with its parts arranged to attain this end will not lose the place it deserves among the engines of the future.

Motoring and Health.

A WRITER of a column of generalities about motoring in the *Newcastle Leader* urges that because of its effect on the complexion the pastime is not likely to remain permanently popular with ladies. This is hardly a new objection, but it deserves a word of criticism. So far as the external aspect of the matter is concerned, the veils and masks ordinarily used are sufficient to protect the delicate skin of the fairest lady; while the healthiness of the sport and its general effect in raising the tone of the system must favourably affect the appearance of men and women alike. The glow that is produced throughout the system by a motor ride has no mere transient effect; it restores health and promotes vitality, thus doing considerably more than all the quacks and their nostrums to preserve the complexion of the human race.

Exaggeration at Bristol.

BRISTOL papers have lately recorded an alarming accident caused by horses being frightened by a motor-car, and the case is a good illustration of the sensational methods by which automobilism is temporarily thwarted at the present time. The first account published in the Bristol daily papers reported that a coachman was taking two ladies for a drive across Durdham Downs. "Just as they were nearing the Gully," wrote the reporter, "the coachman saw a motor-car approaching him from the opposite direction. It was a large heavy car making a great deal of noise, and so he raised his whip twice as a signal to the driver to pull up. No notice was, apparently, taken and the motor-car came pounding along."

When the horses shied, the ladies jumped out, and the animals rushed towards the river, ending their careers by jumping over a precipice and wrecking the carriage. On the following day the same journal had to confess that the motor-car was only a small one travelling very slowly at the time. Neither the driver of the car nor the other occupant saw any signal from the coachman, and there was no sign of any restiveness about the horses until they were within twenty-five or thirty yards of the motor-car. Then one of the horses began to rear, and both the car and the motor were instantly stopped, the car being pulled up within two yards—evidence of the complete control which the driver had. The horses were then about twenty yards off. Both occupants of the car are of opinion that the coachman attempted to pass the car, but the horses suddenly swerved to the right, and the pole snapped. Then the animals became unmanageable, with the broken pole among their legs. The motor-car remained stationary for at least half an hour, and was not driven off as alleged. On the contrary, the driver of the car spoke to the ladies when they got out of their carriage; and later in the afternoon called at their residence and left his card. This is an illustration of how a good many similar stories are "written up" to the detriment of automobilism.

Automobile Houses.

PRIVATE owners of motor vehicles have not given that attention to the housing of their cars that the importance of the matter demands. Of course, owners of "studs" of four or five cars who have expert mechanics do not need any warning; but those who only possess one car should see that the shed or house in which it is stalled is properly protected from the weather and adequately adapted to the purpose. Otherwise disappointment may result from the neglect of ordinary precautions. This is a subject worthy of discussion by the Automobile Club or in our columns. Probably this paragraph may lead to useful suggestions and designs.

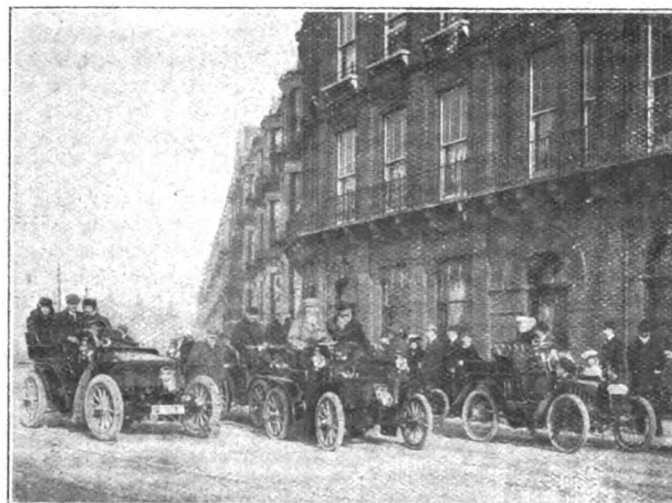
The King of Sports.

THE storm of denunciation that Mr. Kipling has drawn on his devoted head by sacrilegious treatment of the national deity of sport is enough to show the dangers of a frontal attack in such cases, and each patriotic defender has made an heroic effort to show that his particular pastime is the training ground of all the virtues. But if it be asked what sport does most to elicit the qualities of initiative, self-reliance, nerve, and pluck, few of us, after considering the records of "la haute automobilisme,"—in which we may surely include such events as our own 1,000-miles trial of happy memory—can long hesitate to express a verdict, though it does not now afford the opportunities for muscular development that it used to in the early days. Jestings apart, however, those who agree with the utterances of such a prophet as the author of "Anticipations"—and they have a weight of reason on their side—will see a mighty power for progress in a sport which does so much to lead its votaries in the ways of that future ruler of humanity—the engineer.

Progress with Electrical Accumulators.

A HIGHLY interesting lecture on "Some Recent Automobile Apparatus" was delivered at a recent meeting of the Automobile Club of America by Mr. Hiram Percy Maxim. The petrol engine and the electric storage battery were considered the only sources of energy that in the end would prove suitable for automobiles, the former for all work in which economy of power development is the main consideration, the latter where other factors prevail. The discussion was strictly limited to tried devices which have been before the public for some length of time, and it was pointed out by Mr. Maxim that the progress made during the past three years in storage battery efficiency represented an advance of more than one hundred per cent., and that the dangers of ruining batteries by incompetent re-charging

of them had been practically removed through the introduction of the automatic charging plant, which obviates the most prolific source of battery depreciation in the past. During the early part of his discourse Mr. Maxim expressed the opinion that the Automobile Club of America could do nothing of greater value for the advancement of automobilism than to arrange a competitive contest for electric storage batteries, by which all makers of batteries would have an opportunity to demonstrate what their batteries would do at the present stage of the industry, the contest to be uninfluenced by any ideas that might prevail in regard to the supposed commercial standing of the various makers.



A SNAPSHOT AT SOUTHSEA IN NOVEMBER.
Photo by (Mr. T. B. Perry.)

Motor Fire-Engines.

WHEN the various advantages of mechanical over horse traction are considered and a search is made for commercial applications in which these advantages stand out most prominently, fire service would seem to take the first place. Some of the requirements of vehicles in this branch are the ability to start at any time at a moment's notice, high speed and reliability. The automobile possesses all these, and in addition the important one of low cost of maintenance when not in actual use. Fire apparatus is used very intermittently; days and even weeks may elapse before a call is received. Yet all this time the horses must be fed to get perhaps an hour's use out of them at the end of the period. The automobile should prove much more economical, seeing that it needs but little attention when not in use. A start in the substitution of mechanically-propelled fire apparatus for horse-drawn engines has been made in many leading cities both in Europe and America. Fire departments are naturally conservative, but the advantages of the motor-car for that particular work are so obvious that a steady increase to a final exclusive application of automobile traction, in large cities, may safely be predicted.

Covered Vehicles.

THERE is clearly a demand for motor-cars which protect the occupant from inclement weather both in winter and summer. This class of vehicles should not be confined to electric power, which to a great extent is the case at present. Nor should it be necessary to add an immense weight to the car. It would seem that the longer mileage range a vehicle has, the more reason there is for closing at least some part of it in, for naturally a vehicle with long range of travel will be likely to have its passengers exposed more to the weather than where the range is limited.

Views of an Anti-Scorcher.

AN "Anti-Scorcher" sends the following suggestion for the suppression of the furious driving of motor-cars:—"Let every owner be forced to take out a licence, and let every car be numbered. On a first conviction let the licence be endorsed as with cabmen. On a second conviction let the licence be withdrawn for a month or more. A fine of £5 is a trifle." There is nothing very alarming in the idea, and we only call attention to it to emphasise the phrase "as with cabmen." There is a disposition on the part of some members of the public to regard motorists as hired drivers whose only concern is to get over the ground quickly. They forget that motorists are gentlemen—mainly gentlemen of leisure and almost universally of considerable means. The notion of the licence and the number is absurd. What is wanted is that certificates of competency should be issued, and no one allowed to drive on the highway without such permit. Competent drivers, sensible police, and a tolerant public would soon cause such letters as those of the "Anti-Scorcher" (who is probably an "anti-motorist") to be relegated to the waste-paper basket of daily newspapers instead of blossoming forth in their columns in the largest of print.

No Numbering Wanted.

At the same time it should be noted that the County Councils Association has declined to endorse the suggestion of the Gloucestershire County Council that certificates of efficiency should be granted by the Board of Trade, and the only suggestion that remains for practical discussion is as to the numbering of cars. This, however, motorists will dismiss at once. They have considered it, and rejected it, for it savours too much of the spirit evidenced by the correspondent referred to in the preceding paragraph, who would deal with motorists "as with cabmen."

Mud Plugging.

THE heavy going recently has strongly brought home to many motorists the utility of having a reserve of power in their engines. When thick mud prevails, the tractive power of a car diminishes very much; and unless the motor has ample strength considerable difficulty may be experienced in travelling up hills of even medium gradient—hills which when dry roads prevailed could be romped up. The motorist in selecting his car should not reckon the horse-power on too favourable a basis. If he wants a machine which will be efficient all the year round he must give due consideration to the circumstance that heavy and muddy roads must be provided for. It is always wise to be a little generous in the matter of horse-power. The feeling that even on the severest gradients the engines are not being strained to the utmost is most comforting. Of course, the horse-power must not be mere catalogue figures, but actual fact. The driver, too, must take extra care in heavy weather to see that every part is working at proper efficiency, for, if through bad adjustment, etc., there is a leakage of power, the advantage of extra strong engines is nullified to a great extent. There are few such exacting tests as a long run over undulating roads covered with thick mud. Both motor and motorists are severely tried.

Discussions at the Club.

THE last two house dinners of the Automobile Club have been followed by discussions on two such dissimilar subjects as "Proposed Amendments in the Law affecting Motor Vehicles" and "Steam Cars," the authors of the opening papers being Mr. Roger W. Wallace, K.C., and Mr. H. Staner respectively. As these papers will form part of the forthcoming Badminton volume on Motoring, our readers will have an opportunity of making their acquaintance at a later date. Suffice it now to say that a good

discussion followed the reading of the paper on Steam Cars, many useful suggestions being made by Messrs. Dugdale, Clarkson, Knight, Bayldon, White, Turnbull, Firth, and others. Colonel Crompton was in the chair, and paid a high tribute to the value of the idea embodied in the White steam-carriage, in which, by simply using the superheated steam, a great economy in the consumption of water and petrol has been secured.

"MOTOR-BICYCLES" is the subject of the next paper to be read before the Cycle Engineers' Institute on Thursday, February 6th, by Mr. A. Craig at the Grand Hotel, Birmingham. Considering the great interest now evinced in the motor-bicycle, there should be a large attendance.

ONE of the Motor Manufacturing Company's cars was driven from Coventry to London on Saturday, fitted with a set of Martin tires, with the object of carrying out a practical test of this make of tires by daily trips for the next ten days between London and Brighton.

FRANK F. WELLINGTON, Ltd., announce a competition among users of their sparking plug. The prizes will be awarded for plugs which have travelled the greatest distance and been in use for the longest period. The last day for sending in applications is the 17th inst.

ON Monday Dr. F. W. Hutchinson, of Cambridge, made a balloon ascent from the grounds of the Crystal Palace in order to make investigations into the presence of bacilli in the atmosphere at various elevations. The balloon descended in the afternoon near Canterbury.

BOTH candidates at the Hampstead Parliamentary election last week were well supplied with motor-cars by their supporters, Mr. Milvain having the assistance of a Weston steam car, which performed about three journeys to one of the horse-drawn vehicles engaged on similar duty. Motor-cars were also a feature of the Dewsbury election.

A MOTOR club for Southsea and district is in course of formation. Mr. W. S. Glasier, 5, Clarence Road, Southsea, is interesting himself in the matter, and the object of the Club is to form a programme of runs, to promote hill-climbing contests, and to affiliate with the Motor Union. The preliminary meeting was announced to be held on Friday, January 31st, at the Empress Hall, St. Edward's Road, Southsea.

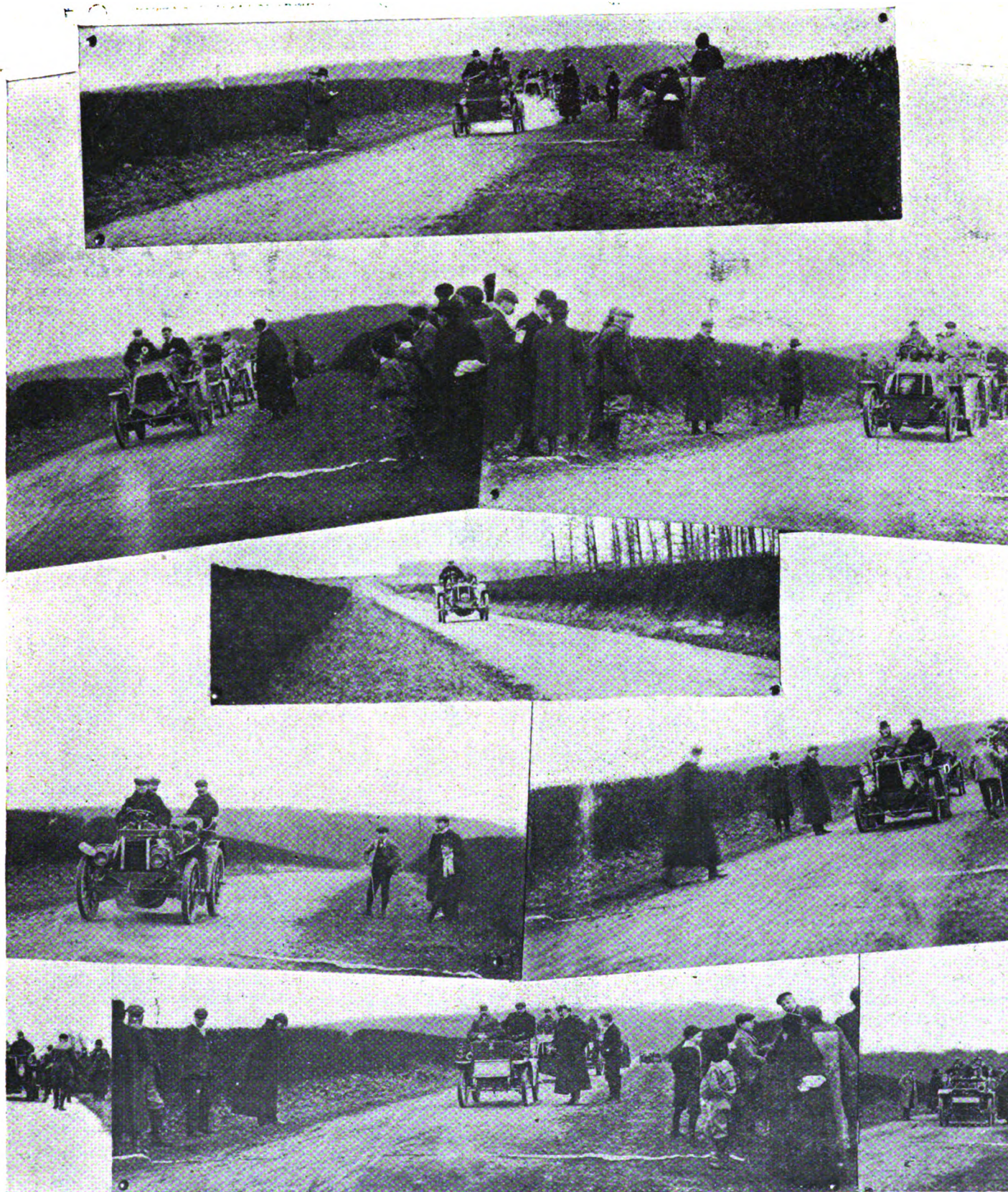
THE first annual meeting of the Wolverhampton Automobile Club took place at the Victoria Hotel, on January 27. The balance-sheet, which showed a balance in hand of a considerable amount, was adopted, also the report, which was very satisfactory. The president for 1902 was then elected, and fell to Alderman Levi Johnson, who was vice-president last year. The Mayor, Mr. C. P. Plant, was elected vice-president; hon. treasurer, Mr. A. E. Jenks; hon. sec., Mr. S. R. Rhodes. A vote of thanks to the treasurer and secretary for 1901 was carried unanimously.

THE recently-formed Long Acre Motor Car Company, Ltd., have now commenced business at 37, Long Acre, London, W.C. They are the sole London agents for the Wolseley Tool and Motor Car Company, Ltd., of Birmingham, and have several cars for immediate delivery. Mr. Claude Browne, the general manager, informs us that they are equipped for repair work of all kinds, have storage accommodation for a number of cars, and intend carrying a large stock of accessories. A speciality will be made of repairs to and spare parts for Wolseley cars.

THE first great result of the relaxation of frontier difficulties will, no doubt, be the creation of a demand for good roads, a demand which is keenly felt in Belgium, and which is already producing results. The creation of good roads in other countries will bring thousands of automobilists from France, their present happy hunting ground, and as travel and mutual intercourse between foreign nations very soon obliterate racial prejudices, important political and economic change is sure to follow as the indirect result of the popularisation of the motor-car.

The Automobile Club Brake Trials.

(See issue January 18th.)



[Photos by]

[Mr. J. A. Holder.

MESSRS. LETTS AND GINDER ON THE LOCOMOBILE.
MR. E. M. C. INSTONE ON THE 12 H.P. M.M.C. MR. LEWIS ON THE 18 H.P. DAIMLER.
MR. MARK MAYHEW ON HIS 20 H.P. PANHARD.
MR. C. JARROTT ON THE 16 H.P. PANHARD. MR. MIDGLEY ON HIS 16 H.P. NAPIER.
MR. J. W. STOCKS ON THE 4½ H.P. DE DION.

FLOTSAM AND JETSAM.

BY "FLANEUR."

WHEN the hardy annuals in the shape of works of reference begin to make their appearance in January or February it is not uninteresting to note their comments on matters that show signs of evolution from year to year. I have been conning over the motor "information" in "Whitaker's Almanack," and find it, alas! to be quite unworthy of that time-honoured publication. Clearly it has been written by someone quite unfamiliar with automobile topics, and scanty though it be it contrives to score several errors of commission, with a plentitude of errors of omission into the bargain. Under the head of "Regulations for motor-cars," "Whitaker" informs us that "a lamp is to be carried during the period between one hour after sunset," etc., etc., and that "If drawing another vehicle, it must have the name of its owner and his address conspicuously painted on it, together with its weight on the right or off side in letters white on black, or black on white, not less than one inch in height." One must regard the spectacle of a lamp drawing another vehicle as a distinct automobile curiosity, and one is altogether at a loss to know whether it is the lamp, or the front car, or the drawn car that must bear the name of its owner, etc., conspicuously painted on it, or whether it is the weight of the lamp, the front car, or the drawn car which is to be stated.

FURTHER on we are informed that in Scotland "the limit of speed is fixed at ten miles an hour if the locomotive be under one and a-half ton unladen," which, as Euclid says, is absurd. The ten miles limit was raised to twelve six months ago, as any one competent to write in works of reference would know. In another section of the volume, under the head of "Scientific and Engineering Summary, 1901," there is a twenty-eight line paragraph side-headed "The Motor-Car." It is as jejune a summary as could well be imagined, and consists almost entirely of descriptions of an automobile bakery and an automobile kitchen! Lastly, it winds up with the astounding information that "the greatest advance during the year"—the italics are mine—is the use of alcohol and ether instead of petrol for motor-car engines, a change to the advantage of the British farmer. Truly a mighty advance! It is to be feared that the distressed agriculturist who starts a beetroot plantation on the strength of this erudite deliverance and comes knocking at the doors of motor-car factories or depôts with tins of alcohol will find a rude awakening to be his fate.

THERE are certain precautions, in connection with car management, which become a matter of habitude, and yet which may well strike the casual onlooker as superfluous. Possibly the automobilist himself at times is tempted to relax his vigilance, but at a heavy cost. For instance, there is the matter of filling up one's tank with petrol. The usual thing, of course, is to use a handkerchief, piece of linen, or a gauze funnel in order to filter the liquid as it flows into the tank; but when one has poured out scores

and scores of gallons without observing any sediment it is easy to think lightly of the precaution, and possibly abandon it occasionally if in a hurry, and a tundish is not handy.

BUT it does not pay! It is easy enough to suppose that the petrol manufacturers are scrupulously careful, and that the presence of grit within their cans is rendered practically impossible. But mistakes will happen, and then there is the agent to take into account. You may buy your petrol from a local man, to encourage him to stock it, instead of from the manufacturers direct, and another chance of possible impurity is added in this way. The agent has probably a number of loose cans which are constantly passing to and fro between himself and his various customers, and which he replenishes when empty from a tank. No doubt he is as careful as may be, but one of his workmen may be otherwise. I was forcibly reminded of this possibility the other day, for after emptying a two-gallon tin into my tank I was horrified to find quite a number of particles of dirt remaining on the gauze membrane of my tundish.

SOME were as large as good-sized pellets, while there were plenty more which would have worked sad havoc with my carburettor but for the fineness of the gauze. For the benefit of

chauffeurs I may point out here what, of course, no experienced hand needs to be reminded of, namely, that nothing is more aggravating to a driver than interruption of the petrol flow through the presence of minute particles of sediment. They return again and again to the charge like hungry flies, and are more baffling even than troubles with the ignition. "Filter your petrol" is a maxim which cannot be too seriously laid to heart at the outset of every automobilist's career.



EN ROUTE FROM NEW YORK TO CHICAGO IN AN 8 H.P. PANHARD.

[Automobile Topics.]

IN another direction, too, I have lately had an illustration of the fact that one must not regard the petrol-can as necessarily without flaw. Before starting on a journey I had placed a couple of tins in my *tonneau*, after the plan adopted by many others of carrying a reserve, and keeping it as such by buying on the road whenever feasible; you thus make it worth people's while to stock petrol in various parts of the country, and are always sure of having some at hand in case you do not come across an agent. At the end of the journey I found the floor of my *tonneau* to be quite wet, and on examination discovered that petrol had been oozing out of one of the cans—in minute quantities, of course, but it was escaping all the same. Now one is accustomed to believe that one could build a fire round a tin of petrol, and that unless the heat were sufficient to melt the joints there would be no conflagration. But that a leaky tin is a possible, if uncommon, factor to be reckoned with is shown by the circumstance above described.

A MOTOR-CAR and cycle parade is among the suggested entertainments at Windsor in connection with the Coronation festivities,

Mechanical Flight Up-to-Date.

[All rights reserved.]

BY SIDNEY H. HOLLANDS.



CHAPTER III.—ANTI-LEVITATION.

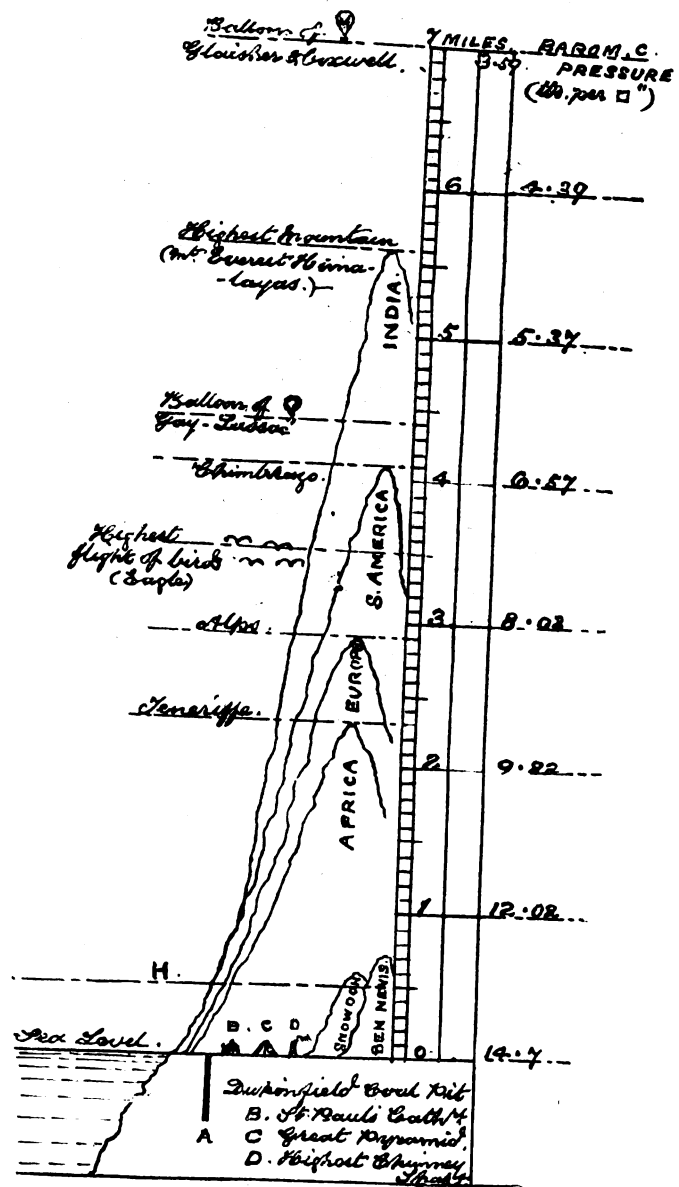
THE heading of this chapter may sufficiently indicate that the present writer holds adverse opinions—he will even go further, and say adverse convictions—on ballooning (with or without a self-contained motor) as a *definite* means of aerial locomotion. These views he fortunately holds in common with the best living and deceased authorities. The late F. W. Brearey, B.Sc. (formerly hon. sec. of the British Aeronautical Society from its foundation in 1867) truly said:—"A total misapprehension of the principles of flight is displayed whenever a balloon is recommended to take off part of the weight of any mechanical arrangement."

We have no better authority than the foregoing gentleman. The late Duke of Argyll—another sound authority on true flight—wrote, in his excellent book "The Reign of Law":—"Of one thing we may be sure, that if man is ever destined to navigate the air, it will be in machines formed in strict obedience to the mechanical laws which have been employed by the Creator for the same purpose in flying animals." Mr. George Griffith, a recent, but orthodox, authority, wrote under the heading "The Futility of Using Inflated Airships":—"If you make your gas-envelope sufficiently rigid (to be forced through the much denser air) you have to add so much weight, that the lifting power of the gas is, virtually, reduced quite two-thirds. Again, if you are to have a motor powerful enough to drive such a gas-envelope through the air its weight increases enormously with every horsepower that it develops; and here comes in the hopeless contradiction against which every aerostat has come to grief."

In the fish or in the submarine boat, moving in a medium over eight hundred times denser than air, these can be, and are practically unyielding solids, i.e., the conditions admit of such a rigid structure that they are enabled to force their way through the water without collapse or deformation. We can have no such conditions in the case of a buoyant, or semi-buoyant, gas-vessel forced through air. The following remarks, therefore, are not in advocacy of ballooning systems, but to indicate their fundamental fallacy, their uselessness for all practical commercial purposes, and their ultimate abandonment in favour of practicable systems of true controllable flight. The present writer, indeed, endorses the significant dictum of Mr. Lawrence Hargrave, who has remarked that:—"We should have been flying long since but for the unfortunate invention of the balloon."

To take first two ballooning schemes which have had, and still have, their advocates, viz.:—First, that of taking advantage of winds blowing in different directions at different altitudes, as this is perhaps the least extravagant of all the purely ballooning projects. It is probable, however, that no one has implicit faith in the *definite* navigation of the atmosphere by recourse to the little-known air-currents prevailing, if they do so, at various altitudes. This scheme, if practicable, would almost certainly be the only one by which balloons could reach any desired place, when any considerable wind was blowing. Supposing now that a balloonist desires to make a N.N.W. course, being in London and wishing to reach Glasgow; the wind at the earth's surface—and for perhaps 1,000 feet above it—happening then to be a ten-knot breeze from the westward. The balloonist has first to rise until he strikes an accommodating S.S.E. wind, of greater or less velocity, which is prepared to steadily continue in the same direction for at least ten or twelve hours, wafting him N.N.W., and this is supposing a speed with the assumed fair wind of about forty miles an hour at least. The gas-bag rises, but has to climb through the 1,000 vertical feet of the ten-knot breeze at the outset. It continues to climb, at an acute angle with the horizon,

steadily drifting eastward meanwhile; and by the time that height is reached, our ballooning friend may sadly note that he has made, perhaps, a mile to the east of his starting point. However, he still rises, and presently may find that his course has changed to the south-east; or he may not, but continue travelling east for an indefinite time and height. If the former alternative occurs, and he makes another mile or so to the south-east, his chance of reaching Glasgow in a hurry will not be promising. In short, if he has luck, and does eventually strike a current

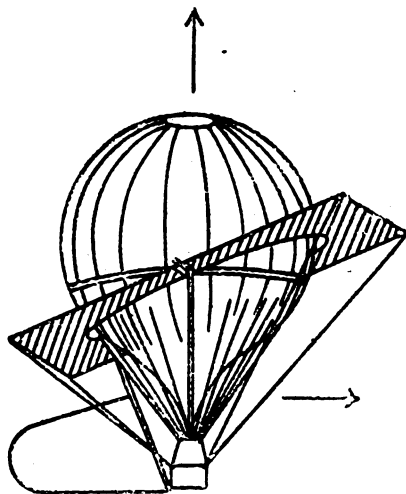


H = Height above which no Aviator need rise
Note: Each div. of scale = 528 ft.

just suiting his destination (even one point off his true course would land him very wide of the mark at the journey's end), that wind must be constant in direction and velocity for many hours, and he has then to climb down again through perhaps 8,000 or 10,000 feet of adverse currents of previously unknown

direction. If our hypothetical voyager struck anywhere within ten miles of Glasgow it would be by either a fluke or a miracle.

The second of these schemes for definite balloon-transit is as ingenious as it is impracticable. This, which was proposed many years ago, resembles the foregoing scheme, in that the balloon was to carry no motor (in the ordinary sense), but, unlike the other, was not intended to drift with the wind, but to make headway against it if need be, employing, alternately, levitation and gravitation to effect this. The appliance through which these forces were to act was a large rectangular pivotted aeroplane, on a central horizontal axis which intersected the vertical centre-line of the balloon, and had a very large oval hole in its centre, occupied by the balloon (see illustration). The ends of the axle, or rather the two gudgeons formed at mid-length on opposite sides of the plane-frame, were carried in lateral bearings on a light frame springing from the car, and embracing the balloon above. This aeroplane was, therefore, balanced, being mounted similarly to an ordinary swing dressing-glass, and was to be inclined in either direction by means of cords from the car. A rudder was to be carried in the wake of the aeroplane, on a vertical axis, and also worked from the car by yoke lines independently. The *modus operandi* was to be as follows:—The balloon, when on the ground before starting, would have its plane tilted up; and would be so placed that the elevated front edge of the plane faced in the direction it was desired to travel. The balloon being then let go, would ascend at a more or less



PROPOSED BALLOONING SCHEME—ALTERNATE LEVITATION AND GRAVITATION.

acute angle with the horizon, according to the degree of inclination of the aeroplane, and its vertical speed (neglecting, for the present, the effect of the prevailing wind), the air-pressure on the upper inclined surface of the plane, due to the ascending effort, effecting this.

When a certain altitude had been reached the "skipper" would swing his plane to the opposite slope, and immediately partly open the escape-valve to cause a descent of the balloon, which would then still be impelled ahead, but at a downward angle, the air pressure being then on the underside of the plane, and due to gravitation. When the balloon had approached the earth the plane would be swung back to its former upward angle, and some ballast at once discharged to bring levitation into play again, which would complete one cycle of operations. It is obvious from the foregoing description that unless there were an abundant and extravagant surplus of both—gas for the essential factor of buoyancy, and of ballast for that of gravity—one cycle, or one and a-half, perhaps, is about all it would run to, even supposing that other practical difficulties did not render the scheme unworkable. The balloon would still be at the mercy of the prevailing wind, and would travel principally to leeward.

Notwithstanding the qualified success of the recent Parisian inflated navigable air-ship—navigable only under favourable

weather conditions, and then, as was proved, with much peril—the position of aerial navigation is *not* materially affected thereby; not even when it is conceded that M. Santos-Dumont's plucky exploit is an advance on all precedent on buoyancy lines. The inherent and ineradicable defects of an inflated aerial vessel remain; whether it is wholly or only partly gas-sustained really matters little, it is still essentially a very-fair-weather vessel. We have seen, too, the enormous size of such a vessel necessary to carry only one passenger. If used in warfare it must form a gigantic target for hostile projectiles, must be very seriously affected by wind, rain, and unavoidable leakage of gas, with consequent loss of buoyancy; also by alternations of sunshine and gloom, causing fluctuations of buoyancy. Finally, it must ever be of perilous longitudinal instability.

It is still as certainly inevitable that the *ultimate* navigable aerial vehicle will *not* be an inflated one, but a true power-sustained aviator, or mechanical flying machine. The true flying vehicle is as independent of, and as unaffected practically by, average wind as those natural flying machines (and admirable studies!), the birds, the flying mammals, and certain flying insects are. A well-known smart engineer-journalist once characteristically remarked: "We have in the bird a machine burning concentrated fuel in a large furnace at a tremendous rate." Our artificial magnified bird must do likewise. An eminent French authority said: "The bird flies, and he is not a balloon; he is a beautiful piece of mechanism. An eagle would have to expand himself to fill fifty cubic metres in order to support himself by levitation. A balloon finds support from the air, so belongs to, or forms part of, the medium in which it floats. Under such conditions how can its mass (bulk), which offers such great resistance to motion *through* the air, make its way *against* the wind?" "The apparatus must be heavier in order to be stronger than air." Buoyancy eliminates gravity, and without gravity—in itself a *sine qua non* of true flight—we can have neither inertia nor momentum, which are also absolute essentials.

(To be continued.)

THE British Aluminium Casting Company, Limited, of Cambridge Street Works, Birmingham, are now turning their attention to aluminium castings for automobile purposes.

THE *Petit Parisien* states that in the early part of the spring experiments will be made with a new navigable balloon, constructed on the plans of Colonel Renard, Director of the French Military Aerostatic School at Chalais-Meudon. The balloon will be propelled by a petrol motor.

THE Liverpool Cycle and Motor Show, held under the patronage of the Liverpool Self-propelled Traffic Association, will be opened at St George's Hall, Liverpool, at three o'clock on Tuesday, February 4th, the ceremony being performed by the Hon. A. Stanley, M.P. for the Ormskirk Division of Lancashire. From what we can hear, the show promises to be very successful.

At the last meeting of the Standing Committee of the Automobile Club a letter was submitted from Mr. Rees Jeffreys, enclosing a copy of an article which he had contributed to the *Motor-Car Journal* of December 28th last with reference to the action of the police. It was recommended that no action should be taken, for the present, by the Club, and Mr. Jeffreys was thanked for the trouble he had taken in making the suggestion.

THE other day we had a look over the premises of Messrs. Friwell, Limited, of Holborn Viaduct, E.C., and were somewhat surprised to find that one floor has been entirely set apart as a shop where motor-cars can be repainted and revarnished. Messrs. Friwell are now in a position to undertake work of this kind to any private car, and at the time of our visit two or three vehicles were in the painters' hands. On another floor arrangements have been made for the re-charging of ignition cells at the shortest notice, upwards of thirty cells being connected up with the electric light mains on the occasion of our visit.

CONTINENTAL NOTES.

By "AUTOMAN."

THE Continental Rubber Company, of Hanover, who are rivals of Michelin in the manufacture of motor tires, have arranged with the Dunlop Company so that they will in future be allowed to import their tires into England under a royalty. They have made big strides during the past year, and have devoted time and money to perfecting and testing their outer covers. Happening to be in Hanover a few days ago, I called on the managing directors, and was shown over their extensive works by my friend Herr Tischbein, the manager.

AN old Canstatt Daimler car, weighing about 30 cwt., is used to test the tires, and Herr Tischbein explained by means of a tabulated register the positive economy of big tires over small ones, and the mathematically exact wearing powers of the different sizes, under, of course, similar circumstances. If there is any difference between the Michelin and the Continental tire it lies in the fact that the tread of the latter is slightly narrower, and the sides, perhaps, a little harder. It is claimed by some *chauffeurs* that they are faster and less liable to skid, because of the narrowness of the tread, but this is merely a matter of opinion, and I give it for what it is worth. It is said, too, that the Continental is harder to pull over the first time, due, no doubt, to the stiffness of the edges. The Continental-Caoutchouc and Gutta Percha Company, which is its full title, was founded in 1872, with a couple of hundred workmen, and it is now a vast undertaking employing more than 2,000 hands, the works covering nearly seven acres of ground.

JUST before leaving the works, Mr. Tischbein showed me his motor-house, in which, amongst other cars, I noticed the famous Mercedes that was run by Barras and which came to grief in a bad accident just before the Paris-Berlin motor-car race.

By degrees, slowly but surely, the automobile is becoming an important instrument for the propagation of civilisation in its various forms and phases. It has already, in the notable instance of the Paris-Berlin race, brought about a mutual intercourse between two great nations that have been divided and estranged for more than a quarter of a century, and gradually the Governments of the Continent are consenting to relax their frontier regulations in favour of the motor-car, so that the day may not be far distant when it will be possible to travel all over the Continent without let or hindrance. Unofficially, France and Belgium have now agreed on a mutual *tryptique* for the automobile, and I believe the decision will be made official before these lines are in print.

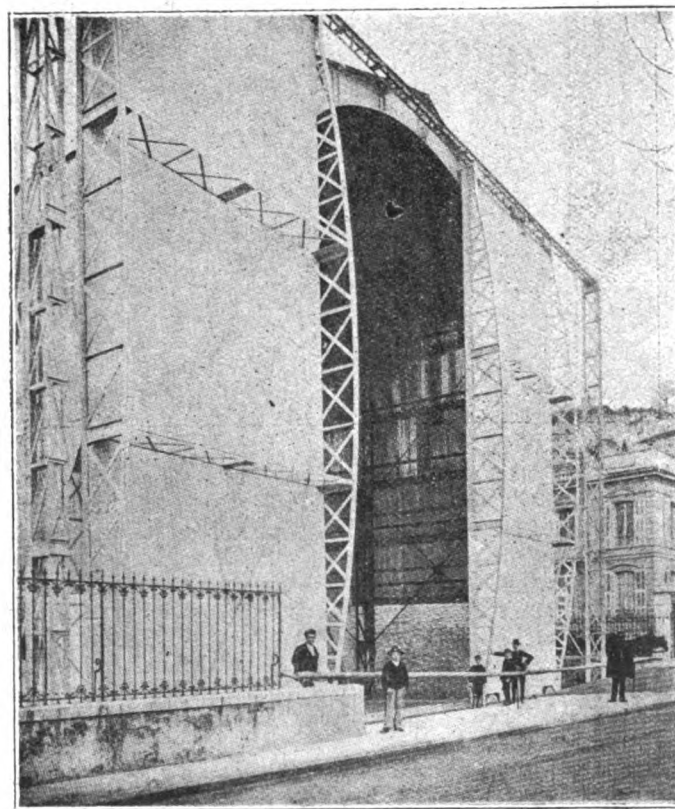
It must not be thought that Dogberry is only a native production of conservative England. He is also to be found amongst the "flora and fauna" of other nations, for only the other day an automobilist in France was condemned to "criminal responsibility" under the following conditions:—The noise of his automobile frightened a mule of recognised vicious habits, and the mule run away and smashed up the carriage to which he had the misfortune to be harnessed, and in the course of his "rake's progress," he spilled and injured the occupants of the vehicle. The automobilist was held by the country judge to be criminally and civilly responsible.

THE mysteries of the automobile racing season are beginning to leak out. Mors is bringing out two new cars, a heavy car just under the limit of weight and a light car weighing about 12½ cwt. Both these vehicles have an entirely new carburettor and an entirely new system of transmission. It is said that this

means of transmission is much more efficient than the present plan. Fournier, Foxhall Keene, and Rolls are down for heavy cars, and Gilles Hourgières is going to drive a light car.

FOURNIER has been chosen as one of the defenders of the Gordon-Bennett Cup, and he will drive a new Mors car with Continental tires if the Continental Co. succeed in manufacturing them in time in France. If not, Fournier will use Michelin tires. With regard to the new system of transmission of the Mors cars, Fournier says that the new system is so simple and practical that as soon as it was explained to him he made up his mind to have it at once. "J'ai signé des deux mains," said he. It is quite possible that Panhard and Levassor will not be represented at all in the Gordon-Bennett, on account of the personality of the *chauffeurs* who have been chosen as defenders, but it would be a great pity, for it would add immense interest to the race for it to be a three-sided contest, national as well as international, and a repetition of the old duel between the two French giants.

F. M. SANTOS DUMONT made two ascents in his airship on Tuesday at Monaco with brilliant success. The first was made in the morning, when the balloon was hauled out of the shed on to the beach, balanced, and the motor put in motion. The balloon ascended easily and gracefully. He ascended for the second time in the afternoon, and spent twenty-five minutes performing evolutions in the bay and before the pigeon-shooting ground.

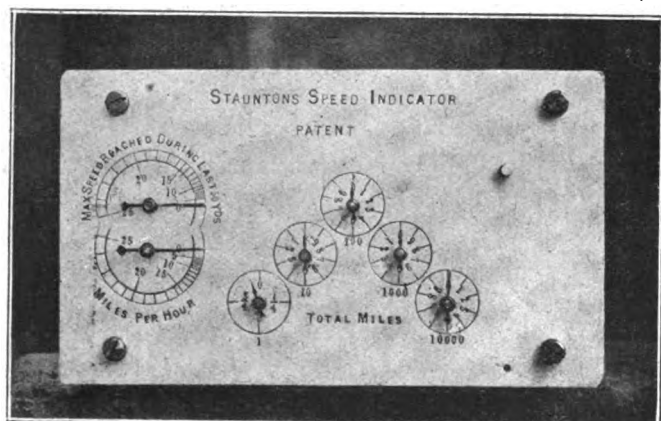


[La Vie au Grand Air.

The steering of the airship was entirely satisfactory. The above illustration shows the special house which has been erected on the Boulevard de la Condamine, Monaco, for the accommodation of the airship. It faces the bay, and has consequently had to be built very strongly. It is no less than 180 ft. long, 32 ft. wide, and 50 ft. high. The two heavy iron gates, which weigh over 4 tons each, run on wheels, and are so well balanced that they can be opened by a boy.

THE STAUNTON SPEED INDICATOR AND ODOMETER.

MOTORISTS mindful of the restrictions of the law are at present bound to keep well within the limits of the legal speed—twelve miles per hour. The statement is often made, that certain positions of the change-speed lever correspond to so many miles per hour, but this relation only holds good under certain conditions of the road and the motor equipment. Speed indicators of various types, which would relieve one of a good deal of anxiety when running through districts in which the attention of the police is devoted more to motorists than to such evil-doers as burglars, pickpockets, etc., have at one time or another made their appearance, and we are this week able to give an illustration and a brief description of still another speed indicator and odometer that has just been put on the market by Messrs. Staunton and Company, of the Excelsior Works, Blyth Street, Bethnal Green, E. Our illustration shows the dial of the instrument, which is contained in a metal case measuring four inches by three inches by three and a quarter inches, attached by clips to the dashboard in full view of the driver. There are, altogether, seven dials, five of which form a group to the right, showing the aggregate mileage travelled up to ten thousand miles. When this distance has been covered, the record commences again automatically. The upper left hand dial registers automatically the maximum speed attained by the car during each fifty yards, so that on stopping the dial shows the highest speed reached during the last fifty yards. If preferred



this dial can be made to register the highest speed for the last 100 or even 440 yards. The lower left hand dial registers the rate of speed at any moment. The instrument that we inspected the other day was arranged to register the speed up to twenty-five per hour, but it can be made to register up to forty, or even sixty miles an hour. As regards the operation of the device, a friction wheel is carried on the hub of one of the front road-wheels of the car. In contact with this is a second small friction wheel carried on an adjustable bracket attached to the axle or other suitable part of the vehicle, the connection between the friction wheel and the recording apparatus being by means of a length of flexible steel shafting. The indicator is the outcome of several years' experiment, and has, we understand, been submitted to a lengthy trial before being put on the market.

A COMMUNICATION from the Gloucestershire County Council with regard to the speed of motor-cars has been ordered to lie on the table of the Northamptonshire County Council.

A SURBITON correspondent reports that a dog was killed by a motorist driving along the Portsmouth Road, nearly opposite Uxbridge Road, the other day. Dogs must really be careful. If they persist in getting underneath a motor-car there is no more chance for them than in the case of a horse-drawn vehicle.

THE MOTOR-CAR IN FRANCE TO-DAY.

(Concluded from page 849.)

COMING now to petrol cars, let me divide them into two types—the carriage and the so-called *voiturette*. The carriage type has come to stay. It is almost perfection to-day, while the *voiturette* class is still undergoing constant changes. The carriage type, or heavier vehicle, has been the more successful, as makers could put weight into their carriage, and in order to run at the now desired speeds weight is what is necessary. The motors now being used in carriages of this type are so-called slow-running, the number of revolutions per minute, without acceleration, being limited to about 800, and in motors, where the stroke is short, the number of revolutions can be accelerated up to 1,100 and 1,200 a minute, without danger of pounding. There has been a gradual cutting down of stroke recently, the diameter of the cylinder and the length of stroke in many instances now being almost equal. Almost all the successful motors of to-day are of a vertical type, and are placed in front of the dash. Two cylinders are used almost universally in carriages developing up to 8 h.p. and four cylinders above this. The inlet valves are so arranged as to be easily removed and examined; the exhaust valves, made of a special steel, are lifted by cams, and are so arranged as to be readily taken out; the pistons are all fitted with oil grooves; the bearings of the crank shaft are large; in fact, all the bearings of the motor are exaggerated in every way, and on this account have long life and are not likely to heat. With a few rare exceptions two-cylinder motors are governed. Governors are usually of the ball type.

A method of control has been almost universally adopted in France, and this is entirely regulated, as you know, by the feet. There are two pedals, the left-hand one releasing the clutch, while the right-hand one releases the clutch and then applies the brakes. The hands are therefore always free for steering purposes, and, as the steering is done by a wheel and is non-reversible, except when very high speeds are obtained, the steering can be done very readily with one hand. The change gear is worked by a lever convenient to the right hand. But little attention has been paid in France to the silencer. People have become accustomed to the puff-puff of the exhaust; horses are no longer frightened, and in muffling the carriage too much there is some back pressure which naturally detracts from the maximum power of the engine. I have often heard French carriages called "noisy." I believe that they can all be muffled down to be as noiseless as can be wished; this, of course, as I have just said, with a slight reduction of the maximum power of the motor. The oiling devices are now taken care of automatically. When the motor is set in operation, oil or grease is sent to the various parts of the car needing them.

With regard to the subject of pumps, I may tell you that the gear-pump is not in great favour in France. The high-speed centrifugal pump, run by friction from the flywheel, has been adopted almost universally. The flanged radiator seems to give perfect satisfaction, although the Germans have put on some of their carriages the beehive radiator, cutting the supply of water down very considerably. But our good French friends argue this way against the beehive radiator: Suppose it takes 60 litres of water to cool an engine using a flanged radiator, and only 7 litres to cool an engine where a beehive radiator is used, if everything always worked perfectly, there could be no question, and the beehive radiator, although it costs more, would be preferable; but if there be a small leak somewhere, if one of the joints in the water circulation be bad, it might take three hours for the water to leak out of a 60-litre tank, when the same leak in the 7-litre tank would leave the tank dry in less than half an hour. Some day, I have no doubt, the water circulation, pipes, joints, etc., will be so perfected as to allow of the beehive or other similar radiator being used. The second type of petrol carriage, the *voiturette*, is still too young to be considered as definite. In *voiturettes* the general practice has been to use one motor of the

high-speed class. This represents a tremendous piston speed and a consequent wear, which, to my mind, is not practical. In other respects the organs of the voiturette are very similar to those of the carriage, but I am afraid that these voiturettes are now built too light, and it does not take very much pounding to knock them to pieces. I have still to say a few words about very heavy carriages and lorries in France. Very few large steam lorries have been built. England perhaps has made more advance than any other country in this direction. In Germany there is a large manufacturer who makes a specialty of petrol-driven lorries, and the recent trials of such vehicles at the German, Austrian, and, I believe, Russian army manoeuvres, have given much encouragement, and it is my opinion that this field is a very large one. The arrangement of the various organs of these petrol-driven lorries is very much the same as the general French type. They are much heavier and will stand much knocking about.

You will all be glad to learn, at least those who are more moderate in their ideas, that the speed question does not interest people in France so much now as it did a year or two ago. That carriages should be built with power to carry them up hill at a good rate of speed and through sand and mud everyone agrees, but this touring through the country at the rate of sixty or seventy kilometres an hour has done much to stimulate legal action against automobilists. Thirty miles an hour is a very fair speed, and when one can make an average of twenty-five miles an hour it would seem to me all that can be desired. In order to make this new means of locomotion popular outside of the more sportive element one must relieve it of the dangers consequent on excessive speeds. Really, a jolt through the country at from twenty to twenty-five miles an hour gives one the opportunity of seeing the scenery and of enjoying the society of one's travelling companions. The day of the leather jacket, black trousers and cap has passed in France; people get into their automobiles as they would into their carriages, and with just as much certainty of getting to their destination in the time calculated as they would by taking a train.

The great popularity of the automobile in France to-day is not altogether due to the perfection of the French machine. Credit must be given to the officers and members of the French Automobile Club, as they certainly have used all their energy, time, and efforts to gain the public approbation for a means of locomotion which, beginning in a sport, finds its own commercial side in its practicability. The officers of the French Club have done an immense amount of work in getting passed reasonable laws referring to the running of automobiles; they have stimulated the legislation and necessary appropriation for the maintenance of roads; they have encouraged the establishment of modern conveniences and good food in the hotels along the lines of communication, which long since had fallen into desuetude consequent on the abandonment of the ancient diligences; they have established intercommunications between countries, and made it possible for the touring automobilist to disregard the national frontier. A man may go now from Paris to St. Petersburg, or from Berlin to Madrid, but with few Custom House formalities.

BEFORE the Derby Society of Engineers Mr. Henry Fowler, A.M.I.C.E., read a paper the other evening on "Motor-cars for Heavy Traction," in the course of which he advocated the abolition of the present tare limit.

COMPARING the ways of the present with the manners of the past, the *Onlooker* says that at one time for a young girl to be seen driving in a hansom cabriolet argued a want of the domestic virtues. Nowadays she goes to dances in a private motor-car, and no one turns a hair.

THE congestion of traffic in Brentford since a double line of tram-rails was laid has caused much indignation among the market gardeners of the towns beyond. To provide for tramways without widening the roads is a foolish policy. The adoption of a motor-car service would have been as useful to the locality, without causing any inconvenience.

THE VIPEN DETACHABLE SIDE FLANGE RIMS.

THE following is a short description of an improved rim for the wheels of motor-cars or road vehicles having pneumatic or other elastic tires, which has been invented by Mr. H. Lavaggi, of the East Riding Cycle and Motor-Car Works, Grosvenor Street, Hull. The figure shows a sectional view of a motor-car wheel fitted with Mr. Lavaggi's improved rim. The rim is made in two parts, one part consisting of a hoop A provided

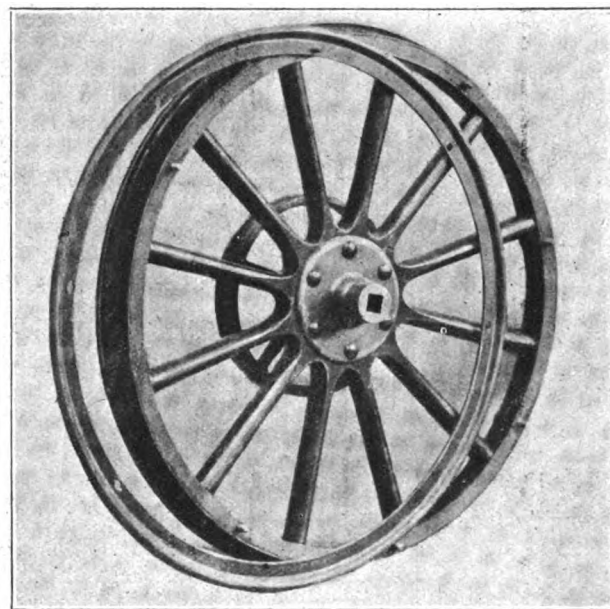


FIG. 1.—WHEEL WITH FLANGE DETACHED.

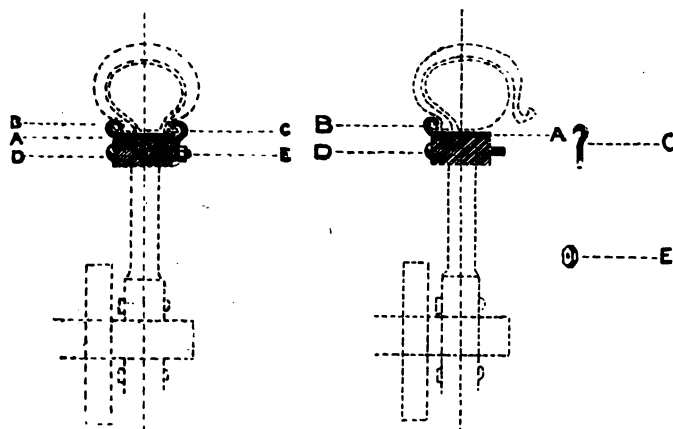
with an upturned side B, which forms one edge of the rim, the other side of the hoop being open. The other part consists of a loose ring C of suitable depth. The hoop is secured to the periphery of the wheel by means of bolts, or screws, and the loose ring C is fixed by bolts E to the side of the wheel, forming, together with the upturned side B of the hoop A, the complete



FIG. 2.—WHEEL WITH FLANGE IN POSITION.

rim. It may be mentioned that the loose side C is sufficiently large to enable its upturned edge to pass over the thickened edge of the tire cover when it is placed in position. By this means

the edge of the cover does not require to be forced under the turned edge. Another point to which attention may be drawn is that the bolts are fixtures, and when the tire is passed on to the hoop part A, the loose ring is slipped on to the bolts with the greatest ease and facility, it only being necessary to nip the nuts up to firmly fix the loose ring and so bind the tire within the rim. With this improved construction of rim, nothing can, it is claimed, be simpler than the removal or fixing of a pneumatic tire, as all that is required is to unscrew the nuts and remove the loose side, when the tire cover, and the air tube also, if necessary, can be drawn off the open side, no other tool beyond a spanner for the nuts being necessary. The rim has, we understand,



FIGS. 3 AND 4.—SECTION OF VIPEN RIM.

been thoroughly tested on the back wheels (32in. by 3 in.) of a voiturette, and has given the utmost satisfaction. The rim will take either a thickened edge, or a wired-on, tire, and can be fitted to any existing wooden wheel. The East Riding Company inform us that all their 1902 cars will be fitted with Vipen rims.

THE proprietors of the Westminster Motor-Car Garage in Page Street, Westminster, S.W., are, we hear, about to put down special plant for charging the batteries of electric vehicles. At present only ignition cells can be recharged, and the additional facilities will no doubt be greatly appreciated.

BOSTON, U.S.A., is to have a club for aerial navigation, like the one recently formed in London, and, like that club, too, the idea started with a certain group in the local organisation of automobilists. The new organisation, which has adopted the name of the Aero Club of New England, will study the general subject of aerial navigation, but more particularly is intended to make ascents and to own an airship.

A NEW sparking plug has been devised by Mr. R. J. Paton, of 37, Gunnersbury Lane, Acton. The feature of the plug is that no cement whatever is used; the porcelain is in one piece, of special design, and is held in position by a nut and lock-nut. The plug is made gas tight by asbestos washers and asbestos string. Another feature of the plug is the adjustable sparking points; the metal portion of the plug terminates in a bridge piece, in the centre of which is fitted a small screw forming a point, which by means of the screw thread can be fixed in any desired position. The plug is neatly made, and its design is such that it should prove an addition to the already long list of various sparking plugs on the market.

MR. WALTER CREBER, of Barrhead, N.B., not being able to have a motor inspection pit, has sent us a photograph of a portable stand he has made to enable the under side of his car to be examined in comparative comfort. The stand, which also facilitates the operation of cleaning the car, practically consists of two stout trestles connected together by two strong planks, thus forming a platform for the car, which can be held in position by wedge blocks. The car is got on to the stand by means of two planks running from one of the trestles to the ground. Mr. Creber considers that hotel proprietors not able to have an inspection pit in their yards would do well to equip them with a platform of the type above outlined.

JOINTS AND PACKINGS.

BY R. W. BUTTEMER.

A LARGE proportion of the minor troubles which fall to the lot of the automobilist have their origin in faulty and leaky joints, and, in view of the large and increasing number of recruits to the ranks of car-owners whose mechanical training is only at its commencement, a short and somewhat elementary treatment of the usual methods of packing and re-making such joints may not be without its uses. Joints are numerous—often unnecessarily so—in most modern motor designs, and any improvements which reduce their number or size—as the frequent practice of casting cylinder and cover in one piece, or that provide for ground joints without packing—are to be welcomed, provided that they do not involve castings being too complicated or necessary renewals being costly; but some will be inevitable in any design, and the materials available for making them may next be considered. Of these the principal are soft metals, fusible or infusible, as lead and copper; asbestos, in the form of soft or hard sheet, string, and sheet of a third variety on a wire-gauze base and containing some rubber admixture, which, though used for steam-pipe joints, is to be avoided for most motor-car purposes; leather; rubber; and finally the old familiar hemp and red lead, which latter is mixed with an equal part of white lead and made into a thick paste with linseed oil, and is always useful when making screwed unions in pipes which do not have to be often disunited.

The selection of these will depend on the purposes of the joint, whether it has to resist high temperatures, steam heat only, water, oil, or petrol; and the best joint of all is one in which no packing is needed, i.e., when the surfaces can be got to such a degree of truth that when drawn together with only a smear of oil or red lead, or even without this, a tight union is obtained. This may be done easily and cheaply by grinding when the surfaces are not large and studs or other projections do not interfere with the necessary rotation of one surface on the other; while when this is impracticable it must be done by scraping, which, though an expensive method, requiring some skill, would, in the writer's opinion, repay its more frequent employment. In default of this, packing is necessary, and the most usual material for this is asbestos, the chief objections to which are its fragility, necessitating care in handling, and the fact that it does not stand water well, though unaffected by heat or dry steam. One principle to be borne in mind when making joints is that the thinner the packing is, the better, and the thin hard blue asbestos sheet is on the whole most satisfactory, especially where a water joint is unavoidable. For this purpose it should be soaked in linseed oil, or smeared with tallow (the writer generally makes the tallow into a thin cream with a little petrol, which ensures its rapidly penetrating the sheet), and may be also blacklead on each surface to render its removal easier when the joint is to be re-made; but with a difficult joint this is better omitted. Blacklead has an awkward way of forming hard concretions on iron surfaces which are very adherent, and the greatest care must be taken in removing such, with any fragments of old packing, especially about the bases of studs, etc., before beginning to make a joint, and clearing out the grooves usually present to retain the packing. Bolt holes should be punched (or, better, cut with small curved scissors) amply large, and burrs of asbestos round them avoided, while there should be no broken lines or folds in the sheet. Where the bolts are light, or few in number, the softer white asbestos may be employed, and screwed up at intervals, allowing time before the engine is used again. For combustion joints only, the asbestos may be used plain, or rubbed with a little blacklead and grease.

A useful packing is made of asbestos covered with thin copper where small joints only are concerned, but it is not easy to get sufficient pull on it safely in the case of a large area. In small cycle engines, where such a joint is used for the cylinder head, it is frequently left too broad, and cutting it down to about one-eighth or three-sixteenths will enable a better joint to be made without excessive pull on the bolts.

Water and steam joints in circulating pipes may be made with good rubber, which is not always easy to get, or more usually with leather; this, however, when the joint admits of it, is apt to swell and partially block the pipe. Asbestos will do, but does not always last; while hemp and red lead do very well in the case of screwed unions, though inapplicable to flange joints. A ring of soft sheet lead also makes a good packing where the union is strong enough to admit of screwing it up. For high pressure steam asbestos is most suitable, but joints should not be in positions where condensed steam may soak them.

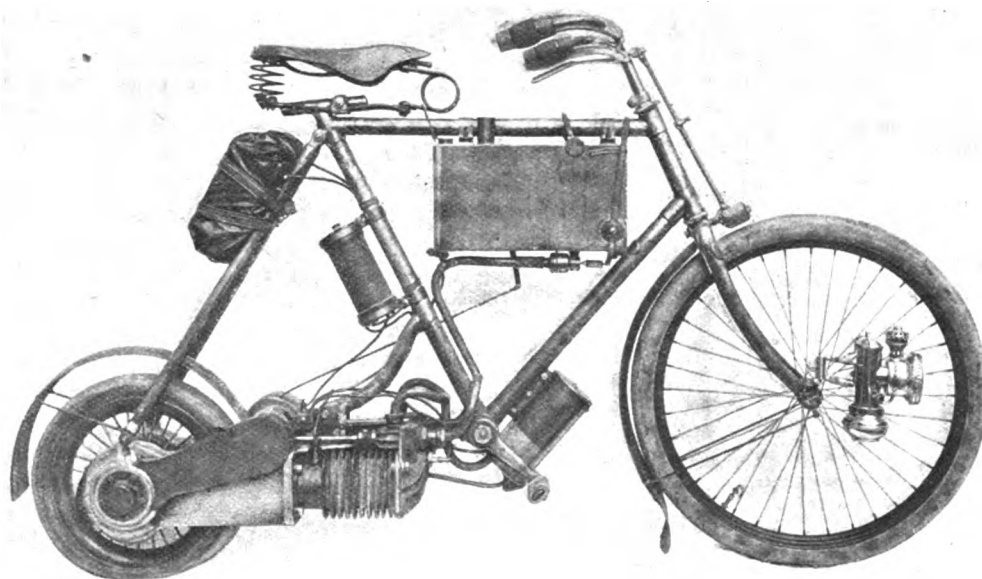
Joints in petrol pipes are best made with leather washers, softened with water, not oil; while a useful tip that the writer has found handy in emergency is that the glue and treacle mixture used for printers' rollers forms a cement, unaffected by petrol, capable of fixing a gauge-glass or stopping a leak, which is better if made with more glue and thus harder than usual; or glue with a small addition of glycerine will answer the same purpose.

If a joint is not tight with gentle screwing up, it is probable that the cause is to be found in want of care in cleaning the sur-

THE TREVISAN MOTOR-BICYCLE.

A SOMEWHAT novel motor-bicycle has lately been devised and put on the market in Italy by Signor A. Trevisan, of Padua. An illustration of the machine is given herewith, from which it will be seen that the engine is of the horizontal type; it comprises two air-cooled cylinders, the piston rods of which are directly connected to the spindle of the rear wheel. Electrical ignition is employed, while the engine is provided with a special arrangement of valves. The machine weighs complete 80 lbs., and can, it is stated, attain a speed of twenty-five miles per hour. The maker claims great stability for his motor-bicycle by reason of the low centre of gravity.

THE works, plant, and business of the Kingsburgh Motor Construction Company, Ltd., at Granton, Edinburgh, are to be put up for sale by auction on the 5th February, as a going concern.



THE TREVISAN MOTOR-BICYCLE.

faces, and re-making is necessary. Violence will seldom mend matters, and usually leads to that most awkward of accidents—a broken stud.

DURING his last week-end visit to Dalmeny, Lord Rosebery made use of a motor-car in his journeyings to and from Edinburgh.

THE car entered by the Wolseley Tool and Motor-Car Co., Ltd., for the Gordon-Bennett race will, we hear, be fitted with Collier Twin tires.

THE new three-cylinder motor-car introduced by Messrs. J. W. Brooke and Co., Ltd., was out for its trial run at Lowestoft last Saturday, with, we hear, successful results. We hope to give full particulars of the car in an early issue.

MR. C. JOHNSON, of 18, Argyll Mansions, Addison Bridge, W., would be glad if the gentleman who is a motor cyclist and who was standing with the policeman, by the Obelisk, at the fork of the road near Alconbury, on Sunday, 12th January, would communicate with him immediately.

At a Board meeting held on Tuesday, the 21st ult., the directors of Friswell, Limited, declared a dividend of 6 per cent. on the preference and 9 per cent. on the ordinary shares for the year ending 31st December, 1901.

MESSRS. PETO AND RADFORD have found it necessary to increase their sales department, and have therefore fitted up the whole of their premises to accommodate the electric ignition trade, additional offices having been taken at 55, Hatton Garden, E.C. They are also introducing this season an entirely novel accumulator plate, specially designed for motor-car work, and are devoting particular attention to motor-cycle batteries.

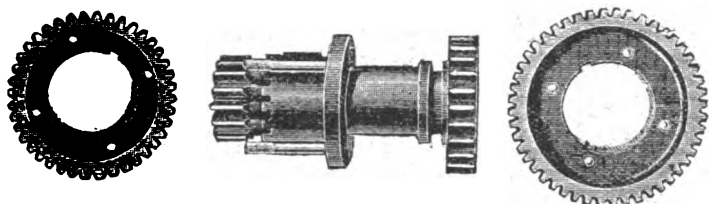
MR. MARK MAYHEW, L.C.C., the vice-chairman of the Automobile Club, has sent a vigorously-written letter to the press, protesting against the way in which the roads in Lincolnshire and Huntingdonshire are repaired. He points out that if the roads were mended by stages and rolled at once their surface would be at all times greatly improved, and the amount of mending eventually required considerably reduced.

HERE AND THERE.

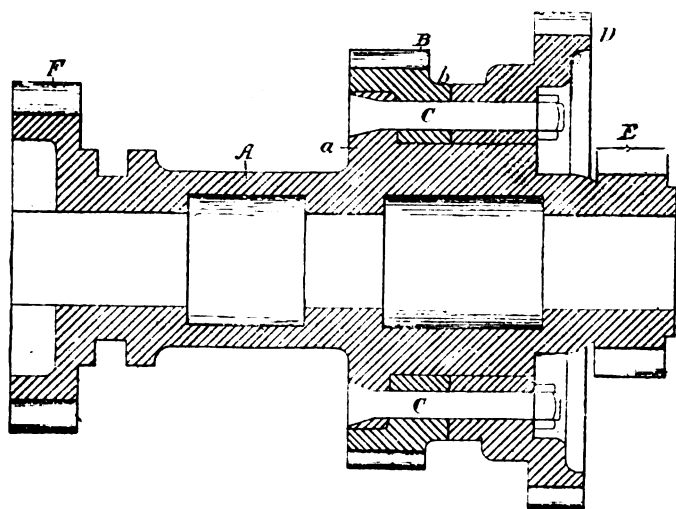
A SERIES of weekly lectures on internal combustion motors is about to be given at the French Automobile Club, in Paris, by M. G. Moreau.

MR. T. BARON RUSSELL declares that in twenty years' time it will be illegal to use a horse in the streets of London—a sanguine declaration that is not likely to help the automobile movement, no matter how well-intentioned is the author.

STILL another arrangement for renewing the third-speed rings of change-speed gears of the Panhard and Daimler types is that which has been lately introduced by Mr. J. F. Scott, of 37, Elm Row, Edinburgh, the rings being made detachable



from the sleeve. Fig. 1 is a longitudinal sectional side elevation of the new sleeve, from which it will be seen that the sleeve A is provided with a flange *a* to and upon which is bolted the toothed wheel ring B, or third speed wheel, by means of the bolts C. As shown in Fig. 1 the third and fourth speed wheels abut: the required distance between the two wheels being obtained by forming the third speed wheel B with a flange or collar piece *b* which abuts a similar flange or collar piece on the side of the fourth speed wheel D. The bolts C are passed through both collars or flanges and into the flange *a* of the sleeve. The ends of the bolts which pass into the flange of the sleeve are formed with a tapered head so that the head of the bolt is flush with the side of the flange. The other ends of the bolts are provided with nuts, as shown, so that the whole can be screwed up tight. Thus, by unscrewing the nuts and withdrawing the bolts, the



ring of the fourth speed gear wheel D can be withdrawn from off the sleeve and then the ring of the third speed wheel B can be similarly removed and be substituted by a new third speed wheel. We understand that the manufacture of the Scott sleeve has been taken up by Messrs. Smith and Coventry, Ltd., engineers, Salford.

MR. G. W. DAVEY, Stoke Bishop, Bristol, invites drivers of motor-tricycles or motor-bicycles to drive to his place by appointment, and give his horses a little tuition. He has a motor-car, and will be pleased to give similar education to the horses of anyone in Bristol.

THE Hon. C. S. Rolls and Mr. S. F. Edge have been elected members of the Aeronautical Society. The next meeting of the society will be held in March, when Mr. Rolls will exhibit a collection of old prints descriptive of ballooning.

JUSTICES of the peace, says *Truth*, regard the motor-car driver as a legitimate prey for the county funds. They are only too pleased to get the full fine out of the driver, and the intelligent constable is naturally delighted to find such an easy victim.

INDIANA horsemen are complaining of the alleged encroachment of the automobile upon the primary use of the public highways. They denounce the courts for holding that automobiles have equal rights with other vehicles drawn by horses, an attitude not wholly unfamiliar in this country.

AMONG the honorary members of the Acetylene Association which has lately been registered by licence of the Board of Trade are Sir David Salomons, Bart., Professor C. Vernon Boys, F.R.S., and Sir Hiram Maxim. The object of the Association is to advance acetylene gas engineering and manufacture in the interests of the public, and of the industry.

AN attempt at humour in the *War Cry* consists of a cartoon in which two motor-cars are depicted—one, the Speedwell, goes steadily on its way; the other, the vehicle of the Snoretown Corps, which has got into ruts, and consequent difficulties. Apparently the moral to both motorists and Salvationists is to avoid ruts. So far as the former are concerned, it depends upon the road surveyors.

FROM Messrs. W. J. Davies and Sons, of the Emery and Blacklead Mills, Weston Street, London, S.E., we have received a sample tin of a very fine emery powder specially prepared for the grinding in of the valves of petroleum spirit engines. It is used with thick oil as usual, and is guaranteed to do its work in half the time of the ordinary flour emery, and to leave a much more durable surface. We hope to try the new powder, and report upon it in due course.

MOTOR-car insurance, including the cost of legal defence in cases of alleged furious driving, is the latest development of the Compensation and Guarantee Fund, Limited. For an annual premium the fund insures owners of private automobiles to the extent of £200 against claims by members of the general public for accidental injury to person or property, against loss by theft, and against the costs of legal defence, in cases of alleged furious driving.

"MOTOR-CAR Impressions" is the title of a slight sketch in the February number of *Harper's Magazine*, by M. Maurice Maeterlinck, the Belgian dramatist and poet, who writes dreamily and enthusiastically about the automobile. "I touch the magic handles," says the author, who has mounted his "poggriff." "The fairy horse obeys. . . . I conquer the plains, which bow down before me. The pace grows faster and faster; the delirious wheels send forth a shrill and eager cry. The trees shrink back in dread of disaster; or bend tumultuously forward, and their myriad leaves, quick to the almost insensate joy of the force that is chanting its hymn, breathe in my ears the eloquent psalm of Space, admiring and welcoming the enemy that has hitherto always been vanquished, but now is triumphant—Speed."

A NEW catalogue of electric carriages has been issued by the City and Suburban Electric Carriage Company, of 6, Denman Street, W. The selection of vehicles illustrated includes a dog-cart to seat two, the Victrollette as supplied to the Queen, three-seated and four seated electric mail phaetons, a touring phaeton fitted with a battery giving a distance of 100 miles at thirteen miles per hour, or seventy miles at twenty-six miles per hour on one change of current, and a rear-driven victoria, electric landaulettes, broughams, hansom, omnibuses, and delivery vans are also included in this catalogue of vehicles of good and fashionable design, embodying the most recent improvements, and the results of six years' public experience. The City and Suburban Electric Carriage Company have supplied their carriages to many members of the nobility.

CORRESPONDENCE.

FRANCE COPYING ENGLAND.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Referring to the letter of a correspondent of yours signed A. J. Westlake, in the issue of January 18th, he suggests that the Napier was not the first to use a number of improvements in motor-car engines which have since been copied by the French. On going into dates I find that the first Napier engine was designed with the separate water-jacket, so that aluminium could be used, in October 1898. Even your correspondent does not suggest that Mors used this before 1899. I myself actually had a car running in France in 1900 made on this principle, but we had the Napier engine made before the Napier car. In regard to the straight exhaust valve stems, Napier was the first firm of repute to use these with the modern type of vertical engine, and we used these before Mors even made a modern type of engine.

Re maximum power for weight; there need be no argument on this point. The 50 h.p. Napier engine can be tested on the brake and weighed by any competent person, providing Mr. Westlake will produce the necessary evidence in regard to the Mors. I quite appreciate his wish to see the Napier car succeed abroad, and I feel sure under the circumstances he will not object to my clearly setting out the facts of the matter, all of which can be proved by documentary evidence.—Yours truly,

S. F. EDGE.

THE AUTOMOBILE CLUB SHOW.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Allow me to burst forth with a few remarks on the subject of the forthcoming Agricultural Hall Show. In company with various exhibitors within the last few days, many remarks have been made with regard to the opening day; it was pointed out that, if the show was to be opened under very grand auspices, the exhibitors would have to have everything ready by 10 a.m. on the opening day, April 19th.

If we look back to the last show, and remember how many of us were behind in our exhibits, we cannot help but feel that to be dilatory a second time, and under such great auspices as we expect to open with this year, it will seriously affect the show; therefore, as a means to preventing a recurrence of the delay in this respect, allow me to suggest that the exhibitors agree to a £5 fine in all cases where their stands are not ready at the time as above specified; or, if it would be better, make it £5 for the first day's tardiness, and £1 per day for each successive day.

Further, that these fines, which would be collected by the management or a committee, would go to a fund for the purpose of ending up the show with a grand dinner, or for some philanthropic cause.

I would like to hear the opinions of other exhibitors through the *Journal*.—Yours faithfully,

THE NEW YORK TYRE CO., LTD.

BERNE NADALL.

Managing Director.

THE HERTFORDSHIRE POLICE.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I have read with surprise, and certainly regret, the references, in "Flotsam and Jetsam" last week, to the Hitchin and Hertfordshire police. I cannot enter into the rights and wrongs of the incident "Flaneur" records against them for obvious reasons, but as a resident in Hitchin, and as one who has been for the last two and a half years a constant driver of a motor-car in Hitchin, and throughout every portion of the county, I cannot endorse the remarks as to the general bearing of the Hitchin or the County police, or of the Chief-Constable, Lieut.-Colonel Daniell, towards automobilists. As far as I know there has as yet been no persecution whatever in Hertfordshire, and no prosecution for riding beyond the legal limit on an open road away from towns, and only isolated cases of driving to the common danger in towns, notably, I am told, a flagrant case at St. Albans, for which we as a county and "Flaneur" himself are suffering and must expect to suffer.

For my own part I have ever found the Hitchin police, from our Deputy-Chief-Constable downwards, civil and obliging to a degree, and so far as my knowledge goes they have never even held up a hand to the driver of a motor-car, although some of them travel through the streets of the town quite as fast as they should. I have made enquiries and am told that "Flaneur" is mistaken in thinking the policeman who handed him Colonel Daniell's recently issued notice did so in any other than a polite and well-meaning way. Surely it is better for the police to issue a warning and to hand copies of it to drivers, than suddenly act in a more aggressive manner without first doing so. With regard to the remarks as to Colonel Daniell himself, I am also at variance with the writer of your notes, for I am certain that had the Colonel been strongly prejudiced against motor-cars, we should have had many more "furious" driving prosecutions in the county than we have had. How happy would the life of the automobilist be if he only had the Hitchin and the Hertfordshire police to deal with!

Is not "Flaneur's" article, written it would seem without intimate knowledge of the attitude of the police of the county in question towards

motor cars, likely to do more harm than good? Who can wonder if the Hitchin police force, for instance, come to the conclusion, after reading it, that they may as well have something to be blamed for, as be blamed for nothing, for I am convinced that their behaviour towards motor-cars has been up to now decidedly lenient, to say the least.—Yours very faithfully,

F. R. CARLING.

THE RECENT BRAKE TRIALS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—In a recent issue of the *Journal* I note that in the report of the Automobile Club brake trials the distance from London to Welbeck is stated to be over 150 miles. I think it is a pity that the Club should have to go this great distance, when Cirencester Park, within ninety miles of town, would be an absolutely ideal place in which to hold motor-car trials, especially speed tests, as a perfectly straight run of about five miles could be indulged in over a broad and slightly undulating road.

Might I suggest that the Automobile Club should endeavour to obtain Earl Bathurst's permission to hold their next trial in this beautiful park? I am confident that all automobilists who are acquainted with the locality I refer to will endorse my opinion that no better place for the purpose can be found in all England.—Yours truly,

F. M. BOSTOCK.

MECHANICAL FLIGHT UP TO DATE.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I have read with great interest the articles on arial flight by Mr. S. H. Hollands, but I have seen no mention of the tail of a bird being used for soaring purposes. I have lately been carefully watching the flight of crows in a strong wind, and it seems to me that the bird, by inclining its tail (with the same action as a ship's propeller), with its windward edge down and its leeward edge up, so lets the wind glide over the upper surface of it as to force down its tail end, and incline its aeroplanes, or wings, at an angle with the wind and shoots up a short distance like a kite, then it brings its tail to a horizontal position, and falls at a slight angle by gravity, then twists its tail again, and shoots up again, and so on in a switchback manner.

I think that if an airship could be constructed (or perhaps has already been) on these lines, and given some sort of push upwards answering to a bird's spring at starting, it could successfully fly in a strong wind. I am a beginner in every sense of the word in this subject, and perhaps this theory is quite an ancient and long ago discovered one, but I have not heard of it, and I thought it would raise an interesting discussion on the flight of birds.—Yours truly,

A. C. E. WHITTARD.

MR. FRANK MORRIS writes:—Permit me to apologise for a mistake that was made in my letter *re* Renewing Speed Gear Wheels in the last issue, owing to the omission of a line in par. 4:—"It is a well-known fact that the speeds on a Daimler gear sleeve, 'after being connected upon my system,' are then all detachable, &c."

In connection with the discussion on motor-bicycles for 1902, Mr. G. H. Smith, of the United Motor Industries, Ltd., writes:—"Judging from Mr. Teschemaker's letter in your issue of January, 18th I judge that that gentleman, although he knows evidently a good deal about motor-bicycles, is not yet acquainted with the Chapelle motor-bicycle with two speed gear, or he could not have made the remark that motor-cyclists are generally to be seen assisting their vehicles up hills, without in fairness alluding to the Chapelle, which machine is a brilliant exception in this respect. Being fitted with a two-speed gear there is practically no hill that the bicycle will not surmount without pedalling at all, and even if a precipitous path is encountered on some mountain side that no horse vehicle could possibly surmount, even then, thanks to the two-speed gear, the Chapelle will take itself up and half pull its driver who is walking by its side. If Mr. Teschemaker would kindly give me an opportunity of doing so I shall be very pleased to give him a practical demonstration of the hill-climbing qualities of the Chapelle."

ALLEGED THEFT OF A MOTOR-CYCLE.

FREDERICK WILLIAM DAVIES, 22, a cycle maker, of 18, Mansfield-street, Aldgate, and Andrew Mabon, 28, a cycle maker, of 17, Birnam-road, Tollington Park, Holloway, were charged, at Clerkenwell Police-court, with being concerned with others, not in custody, in stealing and receiving from the Agricultural Hall on December 2nd a motor-cycle, value £35, the property of Edward De Poorter and Co., Ltd. On the day following the conclusion of the Stanley Show, December 2nd, a Derby motor was missed from the prosecutor's stall. Recently an advertisement appeared in a cycle paper offering a Derby motor for sale at 19, Clerkenwell Road. The prosecutor's manager, Theodore Andrae, went to the address, and there saw the stolen motor. It was not fitted to the same machine to which it was attached when stolen. Mabon said he purchased the machine from the prisoner Davies. Subsequently Davies was visited at his address, and said he purchased the motor, which was detached, for £7. The defence was that Davies purchased the motor from a traveller for £7, and sold it the following day to Mabon for £8. A stout denial was given to the charge. Prisoners were committed for trial, Mabon being allowed bail.

NO LIGHTS.

At the Iver Petty Sessions, Cecil Hamilton, of Windsor, was summoned for driving a motor-car on the highway at Iver without showing a light at the rear, on the night of January 2. The chairman said it ought to be more widely known that it was necessary to have a light behind on a motor-car as well as in front. Defendant was fined 2s. 6d., and 7s. 6d. costs.

At Arundel Petty Sessions, Mortimer Mievill was charged with driving a motor-car without having a light placed thereon in the proper position—the right side. In defence defendant said the light was blown out, but there was a strong light on the left-hand side of the car. He was fined £1, including costs.

At Tunbridge Petty Sessions, Frederick Clarkson was summoned for driving a motor-car without having a lighted lamp attached, at Southborough, on January 2. P.C. Marsh proved the case, and a fine of 19s. 6d., including costs, was imposed.

THE FAULT OF THE TRAM-CAR.

In the Southampton County Court, Augustus Lickfold, commercial traveller, Southampton, sued H. H. Reynolds, former, of Pink's Farm, Diben, from whom he sought to recover £1 2s. 6d. in respect of damages to his motor-car. Plaintiff said his motor-car was standing outside Messrs. Tyrrell and Green's premises in Above Bar Street, Southampton, on the occasion in respect to which the claim was brought. Defendant, who was leading a horse and cart past at the time, had to pull up behind the motor-car whilst a tramcar passed, and on proceeding to pass the motor-car did not allow sufficient clearance, and knocked off the mudguard and smashed the lamp on the motor-car. To repair the damage would cost £1 2s. 6d. A porter in the employ of Messrs. Tyrrell and Green said he witnessed the collision. Defendant had plenty of room to pass the motor-car with his cart, but did not draw clear, and the cart collided with the motor-car, which was stationary close to the causeway. Defendant said his horse had been startled by the motor-car just previously, and a tramcar coming up behind made it restive. He was leading his horse, but it jumped in towards the causeway and the cart caught the motor-car. The tramcar passed his horse on the opposite side to the motor-car. His Honour said the defendant appeared to have done what he could to lead his horse, and the tramcar was to blame. He gave judgment for the defendant, but refused defendant's application for costs.

THEY NEVER WOULD BE MISSED.

With Apologies to Gilbert and Sullivan.

Often at a motor show some awful bores are met,
I've made a little list, I've made a little list,
Of some that we could do without—they're many—and you bet
They never would be missed, they never would be missed.
There are confounded people, who to the enclosure go,
And when a motor goes wrong say, "I always told you so,"
And all those who to play with the little taps insist
They never would be missed, they never would be missed.
There's the local record-breaker, and the friends of his who race,
The great and mighty country judge—I've got him on the list,
All folks who come to the gate and want to pay half price,
They never would be missed, they never would be missed.
There are lots of country Bobbies there, all eyes, and mouth, and ear,
We got 'em on the list, we got 'em on the list,
The folks who look on motors as things you may curse yet fear
They never would be missed, they never would be missed.
There's the man who drives an awful creak, and swears it is the best,
And other chaps most up to date all touring with the rest,
In fact, it hardly matters whom you put upon the list,
For they'd very few be missed, they'd very few be missed.

MOTOR MAD.

COLT V. MOTOR-CAR.

At the Stowmarket County Court, before Judge Eardley Wilmot, R. Bird, horse dealer, Saxmundham, sued Frank Lanchester, Birmingham, for £10 10s., the value of a colt killed by the defendant while driving a motor-car at Trot Hill, Stowmarket, on December 12th last. There was a counter-claim against Bird for damage to the motor-car, caused by the pony, which formed one of a herd being allowed to travel on the highway untethered. Mr. E. Holley appeared for the plaintiff; defendant did not appear. In stating the facts, Mr. E. Holley said the defendant was travelling on his motor-car at a very high speed, and ran into a drove of ponies belonging to the plaintiff, one of the animals being so seriously injured that it had to be shot. Defendant's solicitors had wired on the previous day, saying they were willing to abandon their claim, and would agree to pay his client's claim, promising to remit the amount by telegraph. Nothing had been received from them, and he now applied for judgment and costs. This his Honour (Judge Eardley Wilmot) at once granted.

ISSUING A WRIT.

A motion has been heard in Dublin, on behalf of Mr. Lane Joynt, Merrion Square, Dublin, for leave to issue a writ for service out of the jurisdiction upon Hutton and Co., who carry on business at Northallerton, Yorkshire, claiming damages for breach of warranty of a motor-car supplied to him. The court granted the order sought.

ALLEGED NEGLIGENT DRIVING OF A MOTOR-CAR.

At Marylebone County Court, on Tuesday, before Judge Stonor and a jury, Mr. Emmanuel George Holt, cab-driver, 22, Monro Mews, Golborne Road, North Kensington, W., brought an action against Mr. Fred Frentzel, 119, Elgin Crescent, Notting Hill, W., and Norland Mews, Addison Road, W., and Dr. E. Lehwess, 66, Holland Park Avenue, W., claiming £50 damages in respect of personal injuries, said to have resulted from the negligent driving of a motor-car by the defendants.

Mr. Bartlett Ellis appeared for the plaintiff, and Mr. Staplee Firth on behalf of both the defendants.

The plaintiff stated that on March 20th last he was driving a four-wheel cab along the Bayswater Road, in the direction of Notting Hill. He was keeping well in to his near side, being only about two feet from the kerb, and proceeding just beyond a walking pace. When he had reached Albion Street something came "bash" into the rear of the cab. He was pitched into the gutter. The next thing he remembered was lying upon the pavement, with a crowd of persons standing around. Then he was taken by two constables in a cab to the hospital, and afterwards home. Two of his ribs were fractured. For five weeks he remained in bed, and then pleurisy and pneumonia set in. He was unable to go back to work for nine weeks, and while prior to the accident he was able to earn about 30s. a week, he could now only clear about 25s. On the day following the accident Dr. Lehwess called, and gave half a sovereign to his (plaintiff's) daughter, and two days later both Dr. Lehwess and Mr. Frentzel came and gave another half-sovereign. In correspondence, however, the defendants denied liability in regard to the accident.

After medical and other evidence in support of the plaintiff's case, Dr. Lehwess said Mr. Frentzel was driving the car. When it was almost abreast of the cab the latter suddenly turned, the horse evidently crossing to turn down Hyde Park Street, and the hind off wheel of the cab caught the front near wheel of the motor-car. The cabman, who appeared to have been asleep on his box, then fell into the gutter.

After further evidence the jury were unable to agree. A new trial of the case was put down for March 11th.

FURIOUS DRIVING.

At Altrincham, Ralph Jackson, motor and cycle maker, Altrincham, was summoned for furiously driving a motor-car on the highway, and also that in passing another carriage he did not keep his car on the off side of the road, and further did not give notice by horn or other instrument. For the first and second charges he was fined 40s. and costs in each case, and for the third 20s. and costs.

THE PURCHASE OF A CHAR-A-BANC.

SHERIFF HENDERSON has decided an action in the Edinburgh Sheriff Court at the instance of Frank Morris, King's Lynn, against the Edinburgh Autocar Company (Limited). The pursuer sought payment of a sum of £24 17s. 6d., and the facts of the case as set forth by him are as follows:—On or about April 20th 1901, pursuer, by letter, purchased from the defendants an M.M.C. char-a-banc belonging to them, at the price of £40. One of the conditions stipulated was that it be despatched to the pursuer, free of rail, from Edinburgh. The defendants accepted that offer, and the pursuer remitted a cheque for £40 in settlement of the price agreed on. The pursuer further averred that the char-a-banc was not in accordance with the statement in their list of cars for sale, in respect that several expensive parts were wanting, and that the top and bottom portion of the gear box of the machine had not been forwarded. Although written to, the defendants have refused or delayed to forward the necessary parts, and the pursuer claims the sum mentioned. In their defences, defendants referred the pursuer to their offer, the list of cars, and letter of acceptance for their terms. After hearing counsel at a debate on the matter, the Sheriff found for the pursuer, and granted decree for £15, with expenses on the higher scale.

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THE Motor-Car Journal.

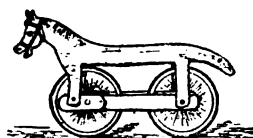
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COMMENTS.



NOW that a general agreement seems to have been arrived at in favour of abolishing speed limitations with regard to motor-cars, suggestions for the identification of owners are being considered by the Local Government Board. At the deputation, to which reference is made on another page of the present issue, Mr. W. W. B. Hulton, the Chairman of the Main Roads Committee of the Lancashire County Council, said he hoped Mr. Long would consider that the crest or the coronet on the carriage and the livery of its owner formed a sufficient means of identification within six or ten miles of the permanent residence of the owner. If it were considered necessary to have some mark, then it should not be put on a conspicuous place, but so located that a police-constable could get the information required as was now done with hired hackney carriages.

Yorkshire Automobile Club.

UNDER the presidency of Dr. Thresh, the Yorkshire Automobile Club has held a very successful annual meeting. The membership has increased to forty-six, and candidates now awaiting election will bring the number up to sixty. The accounts showed a balance of £4 in hand, and after the report and balance-sheet had been adopted the following officers were elected for the current year: President, Lord St. Oswald; vice-presidents, Mr. H. Benn (Cleckheaton), Mr. T. E. King (Harrogate), Dr. Farrow (Cleckheaton), Dr. Thresh (Armley), and Mr. A. W. M. Bosville (Bridlington); Mr. L. Hey was re-elected hon. treasurer; and Mr. A. W. Dougill (Leeds) hon. secretary, with Mr. H. F. Cheswright and Dr. Allbutt representatives of the Club to the A.C.G.B.I. and the Motor Union.

Motor-car Stabling.

A LARGE majority of motorists are converts from what our Gallic neighbours call "hippisme," and consequently use their old stables for their new steeds; but though a good stable is adaptable as a very satisfactory motor-house, the problem of automobile accommodation is not best solved by the architect who proceeds on old-fashioned stable lines. In towns, the stable is generally perforce in close proximity to the house, but in country districts it is usually as remote from it as possible, an arrangement obviously preferable for hygienic reasons where horses are concerned, but quite unnecessary and inconvenient in the case of motors. A motor-house we saw recently was built abutting on the outer wall of the kitchen, from which hot-water pipes, forming part of the house system, were carried to warm it in cold weather; while in another case the car-shed, also warmed in a similar way, took the form of a well-appointed room accessible from the hall, so that preparations for starting could be made comfortably in cold weather. Such luxurious appointments cost little where a new house is concerned, and deserve the attention of architects.

Warming Motor-Houses.

THE warming of existing stables is a more difficult question. It is objectionable to leave lamps burning in the proximity of petrol containers, unless a safety stove somewhat on the Davy lamp principle could be supplied for the purpose; a flue under the concrete floor, with an outside grate like a greenhouse or a Roman bath, would be better, but is expensive. Well-closing doors, the exception rather than the rule in ordinary coach-houses, will do much to keep frost out of a brick building unless severe, but, of course, a corrugated iron one—often used for cars—is no protection against cold. With oil cars, the use of glycerine in the cooling water, or the emptying of tanks, removes the risk attending frost, except that of injury to the tires, which do not benefit by low and variable temperatures; but with steam cars the trouble of running off the water is too great for some protection against frost not to be demanded. Where the stabling has to adjoin the house, the advantage of the automobile over the horse is manifest; and apart from questions of hygiene, there is the fact that—if oil and grease cans are securely closed—no attraction is left for the ubiquitous and troublesome rodent!

Nottingham Automobile Club.

THERE was a good attendance at the second annual meeting of the Nottingham Automobile Club, when Mr. E. W. Wells presided in the absence of Mr. R. M. Knowles. The Club now numbers sixty-five members, and the committee have held twenty-five meetings during the past year. Among other useful work accomplished has been the reduction of the toll at Gunthorpe Bridge from 2s. to 1s. The balance-sheet presented to the meeting by Mr. A. R. Atkey, the hon. sec., was extremely favourable, there being several pounds in hand. Mr. R. M. Knowles was re-elected president, Messrs. T. Bayley, M.P., E. W. Wells, G. H. Kirk and G. Cowen vice-presidents. Mr. A. R. Atkey was unanimously re-elected hon. secretary and treasurer, and the following members were chosen on the committee:—Messrs. W. D. Wells, H. Rimington, S. Harvey, sen., R. Cripps, R. Harbidge, M. Ross Browne, T. Sharp and B. Winter. The president and secretary were elected as representatives of the Club upon the Council of the Motor Union.

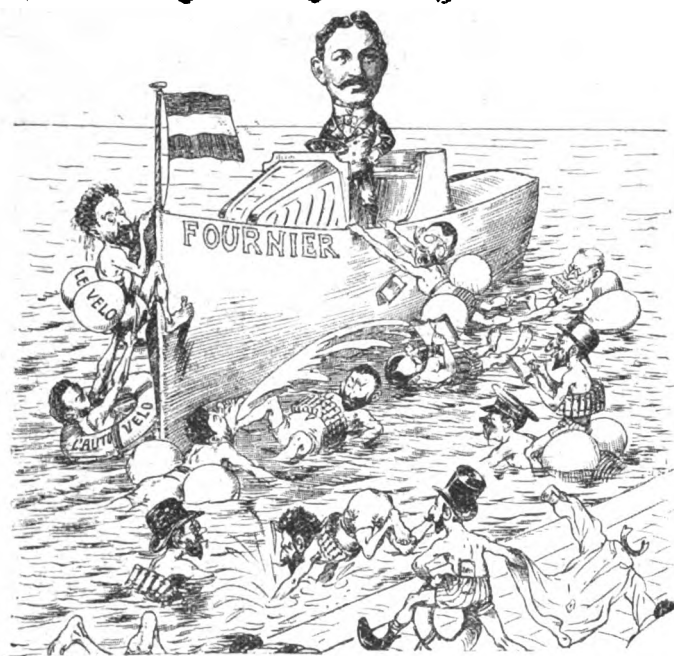
In South Africa.

ON a previous occasion we referred to the boom in motor-cars that was to be expected in South Africa, and already news comes that this has fairly set in. Automobiles are now to be seen in the streets of Capetown, Port Elizabeth, Kimberley, Durban, and Johannesburg, while Bulawayo has also joined in the favourable attitude which South Africa is assuming towards automobiles. As soon as the railway arrangements will allow of their being brought up from the coast in larger numbers than at present a great many will be employed along the Main Reef. At Mafeking the automobile movement has received some little discouragement; otherwise the outlook

for business is decidedly good. During the present week the Motor Manufacturing Company, Limited, has booked an order for twelve 12 h.p. public-service cars for use in South Africa.

Welsh Neglect of Main Roads.

AMONG Welsh main roads, that from Aberdare to Aberaman is of considerable importance, and a favourite one for public services of brakes, cabs and motor-cars. There is complete unanimity among the owners of these various types of vehicles in condemning the County Council, which has neglected this road in a disgraceful fashion. It runs through the most populous district in the Aberdare Valley, and lately presented the appearance of a canal of mud. To spoil that, very rough stones were laid down in such large quantities that traffic has been impeded, and some of the motor-cars have been prevented from completing their journeys owing to the terrible state of the roads. In the early days of the last century the turnpike people laid stones upon the roadway to endanger the experimental motor-cars then running in some parts of the country; and the action of the Welsh county authority is singularly similar.



FOURNIER RETURNS FROM AMERICA--THE INTERVIEWERS' RACE.
[Das Schmaufert.]

Law and Justice.

A RECENT case of the attempted enforcement of an obsolete law—it may not be unnecessary to say it had no connection with automobilism—has elicited a comparison of the opinions of two Chief Justices, one at the commencement of last century, the other of the present date, on the subject of obsolete laws still unrepealed, which may interest motorists at the present juncture. The last-century jurist opines that “these laws were not intended to be enforced except at proper seasons, when there is a necessity for it, or, more properly speaking, were not intended to be enforced at all, but were merely made *in terrorem*.” The modern lawyer holds that “efforts to thus evade an obnoxious penal statute can hardly be justified, and the better course would be to allow it to be enforced, so that, its injustice being made manifest, it might more speedily be repealed.” The remark of a daily contemporary on this is “that experience has shown that an obsolete law can only be removed from the statute book by the constant breaking of it.” Comment is hardly necessary, though it may be remarked that the last argument of motophobes against “repeal” is the now repudiated idea of a century ago, that a law may be made not for consistent enforcement, but *in terrorem*.

Horses as Public Dangers.

IN 1862 a learned judge declared that a horse which would not stand the sight or sound of a locomotive constituted a public danger. Hence he said, the owner should be punished, not the owner of the locomotive. If such a decision was regarded as wisdom in 1862 it surely ought to be accepted in 1902. In fact, its recognition is even more desirable now than then, for the number of locomotives on the road has been supplemented by hundreds of light locomotives whose owners run many risks from the wild and fractious horses they meet on the King's highway. It seems eminently reasonable to make owners of horses careful as to their training and watchful as to the danger their animals are likely to do by shying or other equine antics.

Out of Date.

SOME of the illustrated papers must be sadly in want of subjects, for the *Pictorial World* lately published a page of illustrations which, however accurate they might have been five years ago, are certainly out of date at the present time. The reader is led to imagine that nothing can be seen of the country owing to the dust raised by the automobile, and a car in the midst of a drove of pigs is certainly depicted from imagination and not from observation. “And when the benzine gives out,” we are told by the letterpress, “the result is apt to be ignominious, with a horse drawing the car and its passengers on its homeward way.” Really the *Pictorial World* ought to know better.

An Interesting Experiment.

It is stated that an interesting experiment is being carried out on an American railroad. A new engine has had all its component parts carefully weighed prior to being put on the road, the intention being to re-weigh them after a definite term of service, and so estimate the proportional durability of the several parts of its design. We have some recollection of a similar experiment having been made with a bicycle of Professor Boys' some years ago, and it would certainly be instructive in the highest degree if made with a modern automobile. The ideal car should be like the deacon's “one-hoss shay,” so designed that as far as possible necessary repairs should all be required simultaneously, but the variable way in which different cars fail shows a state of things far from realising this aspiration. A really good series of scientific automobile experiments is a field which—except perhaps in the electrical branch—has hardly yet been touched, but should (in supplement to ordinary road trials *bien entendu*) prove particularly valuable to modern constructors.

A Sheffield Absurdity.

WHEN will the police authorities add common sense to their qualifications? Recently a Sheffield engineer was out with an experimental car, which broke down, as it happened, opposite the residence of a limb of the law. The engineer removed the car to the side of the road and went in search of a horse. While he was gone the policeman kept the car under observation, and lit the lamp when the night grew dark. A few days later the unfortunate motorist had to answer two charges in the local police court, (1) for causing an obstruction and (2) leaving the car without a light.

A Motor-Bicycle Trip.

MR. J. H. ADAMS went for a trip the other day on the Holden bicycle, filled with a trailer. The particular machine has covered 850 miles, and, starting from Brixton, the journey to Woking, *via* Barnes, Richmond Park, and Cobham, was accomplished in 13½ hours. Save for the spring of the saddle breaking a mile before Cobham, no stop occurred beyond that

occasioned by the greeting of a friend. All the stiff little inclines were taken without a stop, and on the return journey there was no stop till a voluntary one at Kingston. Then on to Brixton, the trip was completed in just under two hours. The occupant of the trailer rode the whole way, and seeing that no pedals were on the machine, pedalling was impossible. On the run of 61 miles a gallon of petrol was used.

How to Learn.

THE first object of every good motorist is, or should be, to get to know as much as possible about his car. It is related of a manufacturer who employed a Willans' steam engine in his factory, that his reply to some questions about its mechanism was: "It has three holes; steam goes in at one, comes out at another, and you put oil into the third; it works perfectly, and that's all I know or care to." Fortune seldom blesses car-owners with such limited knowledge, but it is quite remarkable what a small stock seems to keep some drivers on the road. It was different in the early days of motoring—and how small a proportion of modern automobilists remember them, recent though they were! But unpleasant—and educational—experiences are rarer now, and in the absence of any organised instruction, there is nothing more valuable than an afternoon spent in a good repair shop, if the civility of the proprietor and the affability of the motorist can bring such about. More may be learnt in this way than will ensue during weeks of uneventful driving.

Chased by a Runaway.

THE unusual sight was witnessed the other afternoon of a motor-car making a supreme effort to escape from the too pressing attentions of a runaway horse. A policeman was on duty at the Market Hall Corner, Redhill, when he saw a motor-car coming towards him at an excessive speed up the High Street. When the constable motioned the driver to stop, he called out, "Get out, there's a runaway horse after me!" Upon looking in the direction from whence the automobile came the constable had ocular demonstration that the statement was correct. A horse attached to a milk cart was apparently in pursuit of the motor-car at full speed. The efforts which the constable made to stop the animal were futile, and the chase continued as far as Boulton's Corner, where the animal veered round into Wiggie Lane, and was eventually brought to a standstill at South Merstham. What protection would local authorities afford motorists from such runaways?

Motor-Cars for Cycle Clubs.

IN order to increase the popularity of cycle clubs, a firm in one of our London suburbs makes a suggestion that is worth the consideration of those interested in the motor-car industry. It is that cycle clubs should possess their own motor-cars for the purpose of accompanying club runs, and when not wanted for that purpose, for the use of individual members. By getting the members to each subscribe a proportion of the cost a car could be purchased, and the delights of motoring extended to a wide circle. It would be interesting to have some idea of the life of a car under such circumstances compared with that of one driven only by its actual owner.

Is Noiselessness Desirable?

MANY men who are accustomed to driving both steam and petrol cars profess to find a disadvantage at times in the noiselessness of the former. Working through ordinary traffic the motorist experiences a constant need of making careless and thoughtless people aware of his approach. On a petrol

car this is automatically accomplished, as the noise of the engine and gear, etc., is generally sufficient to convey the necessary warning. Being a continuous sound it comes to the car of the pedestrian or other driver without the shock of suddenness produced by the striking of an intermittent alarm. He is prepared for it in a manner, and has time to collect his wits. The steam car, however, approaches almost noiselessly, and if the driver is maladroit in sounding his gong or horn, the effect may be discomposing. A pedestrian or horse driver roused from his road-reverie by a strident alarm tends towards panic. To avoid producing these sudden shocks the motorist very often is constrained to keep sounding his gong or horn continuously, and it is not pleasant to his ears. The bicycle is the only other noiseless vehicle on the highway, and riders have frequently found this property productive of accident. Every other vehicle makes a certain kind of noise, and this may often vary with the speed, so that the pedestrian, without looking round, can approximately judge of the pace at which such vehicle is approaching. This automatic noise reaches up side streets and cross roads, and warns approaching objects of its proximity. The driver of the noiseless vehicle, on the contrary, must look out for such crossings and openings and sound his alarm, or something may crash into him. On the whole, perhaps, he is constrained to greater watchfulness. Far be it from our intention, however, to deprecate silence. Many petrol cars could do with considerably less noise; and no one who has enjoyed the silent-running car will be inclined to consider the quality undesirable, though he may have to admit that it is not without its minor disadvantages.



COL. CROMPTON IN THE WARS AT WELBECK PARK.
Photo by [Mr. J. A. Holder.]

Raiment [Again]

THE vagaries of motor-car attire are a perennial subject of comment in the newspapers, as well as of candid criticism from the man in the street who does not rush into print, but vents his views in startling and striking language. Here is the *Irish Field* describing the raiment of motorists as "inex-

pressively weird," "offensively ugly," and "peculiarly hideous," while the *Birmingham Gazette* quotes the saying of Mr. Barry Pain to the effect that the possession of a motor-car implies at least moderate wealth, but the possessors invariably look poor. Probably in this, as in other matters connected with garments, Royalty will have an important influence, and we note with interest that in many motor-cars owned by fashionable people coachmen are being transferred to the steering wheel in the same costumes in which they were wont to direct proceedings from the box seat of the brougham.

Club Discussions.

NEXT Wednesday the Right Hon. Sir J. H. A. Macdonald will read the chapter on "Reminiscences," at the Automobile Club, which he has prepared for the Badminton Book. Sir Francis Jeune will preside. On Wednesday last the Hon. C. S. Rolls read his chapter on the "Caprices (Other Than Ignition) of a Petrol Motor," Mr. J. Ernest Hutton being in the chair. Mr. Rolls has also written a series of articles for newspaper publication. These will appear during March and April.

MOTOR-CARS AT LIVERPOOL.

THE sixth annual Liverpool Cycle and Motor Show was opened under the happiest auspices on Tuesday, the formal ceremony being preceded by a luncheon, at which about seventy were present. The Hon. A. Stanley, M.P., took the chair for the first part of the proceedings, but having to attend to his parliamentary duties that position was subsequently occupied by Professor Hele-Shaw. The Hon. Arthur Stanley wished the show every success. They must all welcome, he said, the recent pronouncement of the President of the Local Government Board as being a step in the right direction. He (the speaker) had just come back from South America, and he was struck by the fact that in this country more than anywhere else restrictions were put upon our trade by the Local Government Board, the Board of Trade, and other bodies. If this country were to fight the rest of the world successfully it must not be compelled to do so with one hand tied behind. This was especially true of the motor industry, of which he was glad Liverpool was a pioneer, and he therefore all the more cordially wished success to the present show. He believed the time was not far distant when they would have a regular and available motor service around the district, and with such a system in operation much less would be heard of agricultural depression.

The formal opening of the show was performed by Mr. G. H. Cox. Professor Hele-Shaw presided, and said that the presence that day of so many admirable motor-cycles showed that nowadays the automobile was well-nigh within the reach of everybody. He had been connected with the show since motors had been introduced, and on the first occasion there was only one motor-bicycle and one motor-car in the exhibition. Since then there had, of course, been great improvements, and last year thirteen vehicles undertook the trial to Ormskirk and back without a single hitch. This year twenty-one had entered for the run to Blackburn and back, which would cover a route of eighty miles, and there was every prospect of a most successful run.

Mr. G. H. Cox, in declaring the show open, remarked that it was the best ever held in the district, and every credit was due to the promoters and others who had assisted in the development of self-propelled traffic. With regard to the question of tare, however, he was sorry to say that in spite of the sympathy of Mr. W. H. Long—expressed in Liverpool a few months ago—nothing had so far been done to amend the present law.

The exhibition is the largest of the series yet held, and is a tribute to the organising capacity of Mr. Price, the secretary. As might be expected, motor-bicycles are largely in evidence; there is also a fine show of automobiles. As in all motor matters taking place in Liverpool, Mr. Shrapnell Smith is well to the fore.

Taking the first stands on entering the hall, we notice that

of the British and Foreign Motor-Car Company, Limited, of 27, Islington, Liverpool. Here are to be seen specimens, well finished and handsome in appearance, of the 4½, 8, and 10 h.p. Rochet cars; a Cottereau; a 6 h.p. M.M.C.; and a 4 h.p. two-speed quad. Messrs. W. T. Pritchard, Limited, of Liverpool, exhibit specimens of the popular Stirling cars, including a dog-cart, phaeton, and a light delivery van. One of the latest products of the Humber Company, with a 6½-h.p. Aster motor and *tonneau* body, attracts much attention. Messrs. Marshall and Company, of the Belsize Works, Manchester, show a motor-van and one of their latest 12-h.p. cars, with the radiating coil travelling round the bottom of the bonnet and the front of the dash-board, certainly a distinctive arrangement. Messrs. Bennett and Carlisle, of Deansgate, Manchester, are present with an Argyll light van and two *tonneaux*, well worthy of the makers' reputation. The Imperial Autocar Company, of Manchester, have two cars—one a 6-h.p., and the other an 8-h.p. This company's vehicles have previously been described in the *Journal*. The Vulcan Motor and Engineering Company, of Southport, exhibit a two-seated phaeton, driven by a 3½-h.p. motor. The car is provided with two speeds—eight to twenty miles per hour—and the power is transmitted by a single belt, which is adjusted by a patent lever attachment by means of which it can be tightened or slackened by the driver from the seat. Mr. W. H. Buxton, of Bold Street, Liverpool, has a very fine show of Locomobiles, including a *dos-a-dos*, a dog-cart, a phaeton, and the usual popular two-seated vehicle so largely in evidence in the south. The public interest in steam-cars has been proved by the crowds surrounding this stand. This display also includes what is termed a carbon-silicon carburettor, a device for carrying petrol in a solid form, applicable to both steam and internal combustion engines, stated to give 100 per cent. more energy or heating power than petrol when used in the ordinary way. This ingenious arrangement will be on view at the Agricultural Hall in April.

On Wednesday a trial of light motor-vehicles took place in connection with the exhibition, the route being to Blackburn, *via* Wigan, Standish, Chorley, and Feniscowles; and back by way of Preston New Road, Samuelsbury, Preston, Rufford, and Ormskirk. Professor H. S. Hele-Shaw and Mr. E. Shrapnell Smith acted as judges, Mr. C. Herbert Bishop as hon. sec. to the judges, and Mr. H. F. Wheeler as principal hon. observer. The competition included fourteen motor-cars, three motor-cycles, and a quad, while a goodly number of non-competitors also took part in the eighty-mile run. Only one of the machines failed to reach Blackburn, and this mishap was due to unforeseen circumstances. The hon. secretary to the judges was on this car, but he was picked up by Mr. Shrapnell Smith, and was carried nearly twenty miles on the axle of the motor-tricycle. The trials were divided into three classes, and we hope to publish the awards in an early issue.

We understand that the London Autocar Company, Ltd., is prepared to quote for the conversion of the 4½ h.p. De Dion motor for voituresses into 6 and 8 h.p. motors by the supply of new cylinders, pistons, and specially-weighted fly-wheels.

THE Holborn Tyre Company, Ltd., are about to be joined by a well-known rubber firm, and will be registered as a limited liability company with a capital of £5,000, under the style of the Holborn Motor Tyre Company, Ltd. New premises are to be acquired to cope with the growing business.

MR. E. F. USBORNE gave a lecture on motor cars at the Lowfields Lecture Hall, Newark, last week. He said he had journeyed 5,000 miles during the last eighteen months on a De Dion voituress, and the vehicle was good for many thousands more.

THE Motor Cycling Club is organising a race meeting at the Crystal Palace on the 22nd inst. The motor-bicycle races (5 miles on the track) will be three in number, for machines with engines up to 1½ h.p., 2 h.p., and more than 2 h.p. respectively. Full particulars can be obtained from Mr. A. Lloyd Owen, the sports hon. secretary of the Club, 40, Oseney Crescent, N.W.

MOTOR-CAR REGULATIONS.

THE PROSPECT OF AN IMPROVEMENT.

IT was an influential deputation that waited upon Mr. Walter Long, the President of the Local Government Board, on Thursday, the 30th ult. Organised by the County Councils Association, it was introduced by Sir John Hibbert, who said the Association thought the limit of speed might be abolished if drivers of motor-cars were subjected to certain regulations, chief of which was that some clear principle of identification should be adopted, a course that was endorsed by the Automobile Club, the particular plan being left to the Local Government Board. The County Councils Association was also of opinion that the present penalty clauses of the Highway Acts were insufficient as applied to motorists—a suggestion that comes as somewhat of a surprise when the remunerative character of motor-car prosecutions to the county funds are considered.

Lord Thring made a very practical speech. He said as regarded speed they contended that the present regulations were equally bad for the trade and the public. The trade were subjected to keen competition from their Continental rivals, who had an advantage because motor-cars were allowed to go at a much higher speed than in England. It was well known that the present speed of motor-cars in England greatly exceeded twelve miles an hour, and his long experience with Acts of Parliament taught him that it was no use making penalties which would not be enforced, and therefore the limit of speed should be abolished. To name a limit of speed was really authorising a driver to go at that maximum, even when it was to the common danger. All they wanted was that the drivers should exercise due caution. As to adopting a number for identification, he did not know whether it was practicable, but the Local Government Board might devise something.

Mr. Long's reply was sympathetic. He concurred with what had been said as to the effect of the present regulations with regard to speed; but urged that allowance should be made for the fact that they were framed when automobiles were in their infancy in this country. The other points of his speech may be summarised as follows:—

1. At present it is impossible to contemplate any method of identification which would not apply equally to all kinds of motor-cars.
2. Numbering cars or painting names thereon does not seem altogether satisfactory, because it would hardly be possible to identify a car as it was passing at a great rate of speed.
3. Great security might be found in strengthening the law with regard to public safety.
4. Might not increased powers be given the police in rural districts to enable them to control the traffic of country roads as it was now controlled in towns.
5. There were many objections to licensing drivers.
6. The demand that there should be less limitations upon the use of heavy motor-cars for commercial purposes had been justified by the Liverpool trials.

We recognise that Mr. Long has a difficult task in framing regulations which will suit everyone, and the reports of Belgian and French experience that he has received have been too varied to give him much guidance from the Continent. One thing, however, is certain, viz., that he recognises the desire of the automobilists of this country to conform to any regulations which are based upon recent experience, and worded with some regard to common sense. His reference to the assistance rendered him by the Automobile Club was exceedingly welcome, for it is clear that the Local Government Board is considering the position in all its aspects, and that its decision will not be hastily given on partial evidence. It is very gratifying to find that county authorities are as keenly impressed as are automobilists with the fact that the present limitation as to speed is unsatisfactory and impossible. Having reached that point of agreement motorists

will await the plan of identification to be proposed by Mr. Walter Long with an easy resignation. For they are willing to fall in with any reasonable proposal that does not hamper the progress of the movement, and Mr. Long's reply to the deputation seems to indicate that a sympathetic attitude will be assumed by the Government, and that a less harassing time is in prospect for motorists and for the industry.

THE HUDLASS DOCTOR'S CAR.

THE accompanying illustration gives a general view of a motor-car that has lately been completed by Mr. F. W. Hudlass, of the Phoenix Motor Works, Southport, for the use of doctors. The vehicle is propelled by means of a 9 h.p. double-cylinder motor, the cylinders being $4\frac{1}{2}$ inches diameter by 6 inches stroke. The engine is fitted with electrical ignition, and both the cylinders and heads are water-cooled. Three speeds forward and reverse motion are provided, the power of the motor being transmitted to the counter-shaft by wide belts tightened or slackened as desired by means of a jockey pulley. From the counter shaft the usual duplicate pair of chains and chain wheels



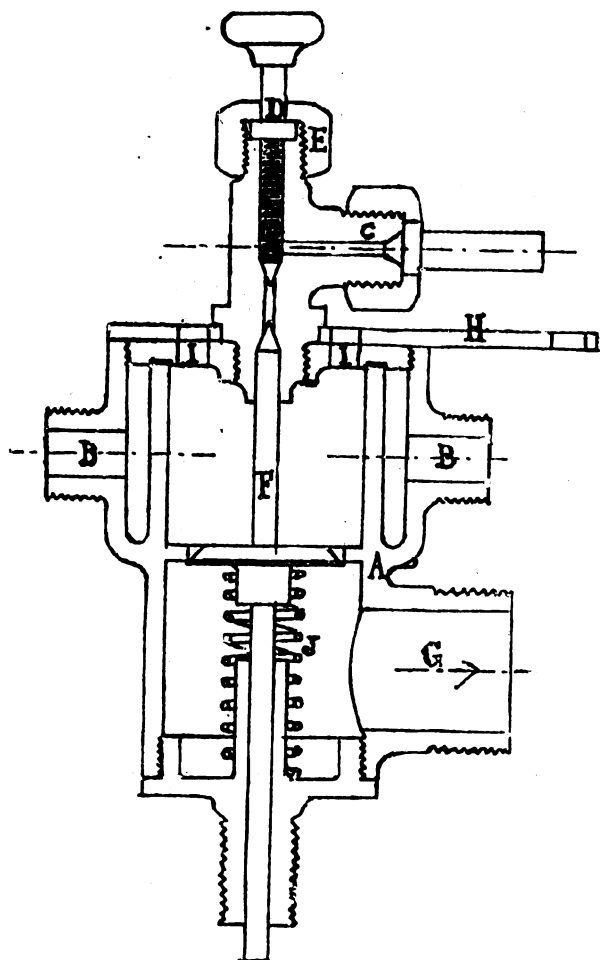
convey the power to the rear road wheels. A feature of the car is the special body with which it is fitted. As will be seen, the driver sits inside and is entirely protected from the weather. The glass front and door can, however, be quickly detached. It will be noticed that, with the front in use, the hood at the rear is not extended to its full extent. Should the user of the car prefer to go out without the front portion of the body, the hood when fully extended gives a large measure of protection to the passengers. Complete, as illustrated, the vehicle weighs 18 cwts. We are informed that it is a good hill-climber, it having during recent tests taken all the hills in the neighbourhood of Mr. Hudlass's works on the high gear.

A 10 h.p. Wolseley car has just been delivered to Mr. Cecil Rhodes, who has taken it out with him to South Africa.

THE London Distributing Kitchens, Ltd., of 121, Victoria Street, Westminster, which make a speciality of delivering hot cooked meals at any desired time to one's office or flat, has recently acquired from the British and Foreign Electrical Vehicle Co., of 4, Bloomsbury Place, W.C., an electric delivery van, with a capacity for carrying one ton. The van has been running in a perfectly satisfactory manner for a month or two. It is fitted with Leitner batteries, and will run at a speed of about twelve miles an hour. The British and Foreign Co. attends to the charging of the batteries, and makes an inclusive charge for the services of a driver and maintenance of the vehicle and accumulators.

THE MEREDITH CARBURETTOR FOR SMALL PETROL MOTORS.

A SECTION of a new carburettor for use in connection with the small petrol motors of motor-bicycles is shown in the accompanying illustration. It is being introduced by Messrs. John Child Meredith, Limited, of Summer Lane, Birmingham, who state that their object has been to produce a carburettor which is simple, neat, light, and not expensive. The drawing is full size, so it will readily be seen that the device will not take up much room. One of the great features claimed for the carburettor is that it can be used in the coldest weather, and that, however rough the surface of the roads, it does not



A. Pulveriser.
BB. Inlet and Outlet for Exhaust
to heat Pulverising Chamber.
C. Petrol Supply Pipe.
D. Regulating Tap.

F. Admission Control Valve.
G. Mixture Outlet to Motor.
H. Air Lever.
I. Inlet for Air.
J. Spring.

affect the working of the appliance. The petrol is admitted at the top, and the flow controlled by a regulating screw passing through a stuffing-box. The pulverising chamber is closed at the bottom by a valve of large diameter, carried upon a needle passing through a still lower chamber, whence the vapour enters the pipe to the motor. This lower chamber contains a spiral spring, which closes the flat valve except when the piston is making the induction stroke, when the suction opens the valve and compresses the spring. The pulverising chamber is warmed by a jacket through which a certain portion of the exhaust passes, being allowed to enter at one side and escape at the other. The top of the carbureting chamber is provided with holes closed by the usual form of revolving cap, by which the air-admission is easily controlled.

FLOTSAM AND JETSAM.

BY FLANEUR.

THE ways of the British Post Office are notoriously difficult to understand, and those of the Inland Revenue Department, if less extensive, are none the less peculiar. For the moment I have no old licences by me for purposes of comparison, but am considerably puzzled as to the right interpretation of the wording on the licence for 1902, which I obtained a few days ago at a suburban post office. The authorisation it confers is to "keep one carriage with four or more wheels, and fitted to be drawn by two or more horses or mules, or to be drawn or propelled by *mechanical power*, from the date hereof until the 31st day of December next following, the sum of two pounds and two shillings having been paid for this licence."

So far so good; but the third clause of a triple "notice" which figures at the foot of the document expressly states as follows:—"This licence is not applicable to a carriage which is a light locomotive as defined by the Locomotives on Highways Act, 1896." Curiously enough, moreover, the same contradiction in terms appears on the schedule which one is asked to fill up and sign when taking out a licence for a car. The problem which now presents itself is this: If the licence that has been officially vouchsafed to me be not applicable to "a carriage which is a light locomotive as defined by the Locomotives on Highways Act, 1896," what is the nature of the proper one which is to be obtained; and why, too, is it not obtainable? The post-mistress rejoined, when I pointed out the discrepancy, that that was the kind of licence she had always issued, and that she was not aware of the existence of any other; from which I infer that all the car-owners in my district are, like myself, the proud possessors of a car licence which is not applicable to a car!

ONE is moved to ask, moreover, what type of carriage it is that is "drawn or propelled by mechanical power," and is yet without the pale of the Locomotives on Highways Act of 1896. Traction engines we know, and there are tram-cars; but do these vehicles require a carriage licence of the ordinary kind, and is two guineas all they pay per annum, the one for cracking the road crust, and the other for enjoying a monopolist right of way? Never having kept a tame traction engine or an electric tram I am ignorant as to this point, but pending explanation I "hae ma doots." Perhaps—happy thought!—the Inland Revenue authorities were in league with Mr. Thomas Weeding Weeding when he essayed to eradicate the light steam car, and, fondly predicting the success of his campaign, they caused the form of licence to be printed for this present year of grace, 1902. But, joking apart, what will be my position if at any time I should be challenged by an Inland Revenue official to produce my licence? All that I can show him as a licence for my car, which is unquestionably a light locomotive as defined by the Act of 1896, is a document bearing clearly on its face the proviso that it is not applicable to a vehicle of that description. I have my own theory as to how the error has arisen, but will defer further comment until I have heard from the Commissioners of Inland Revenue.

MR. F. R. CARLING'S letter on "The Hertfordshire Police," which was published in the last issue of this journal, contains the welcome intimation that those persons have not, up to now, displayed the persecuting spirit of their Huntingdonshire confreres. I am right glad to hear it, and as Mr. Carling lives in Hitchin he ought to know the usual condition of things in Herts. But I am by no means able to acquiesce in the justice or the relevance of the major portion of his letter. I made no general charges against the Hertfordshire police, but addressed myself to two items of fact: (1) The serving of the Chief Constable's notice; (2) the terms of the notice itself.

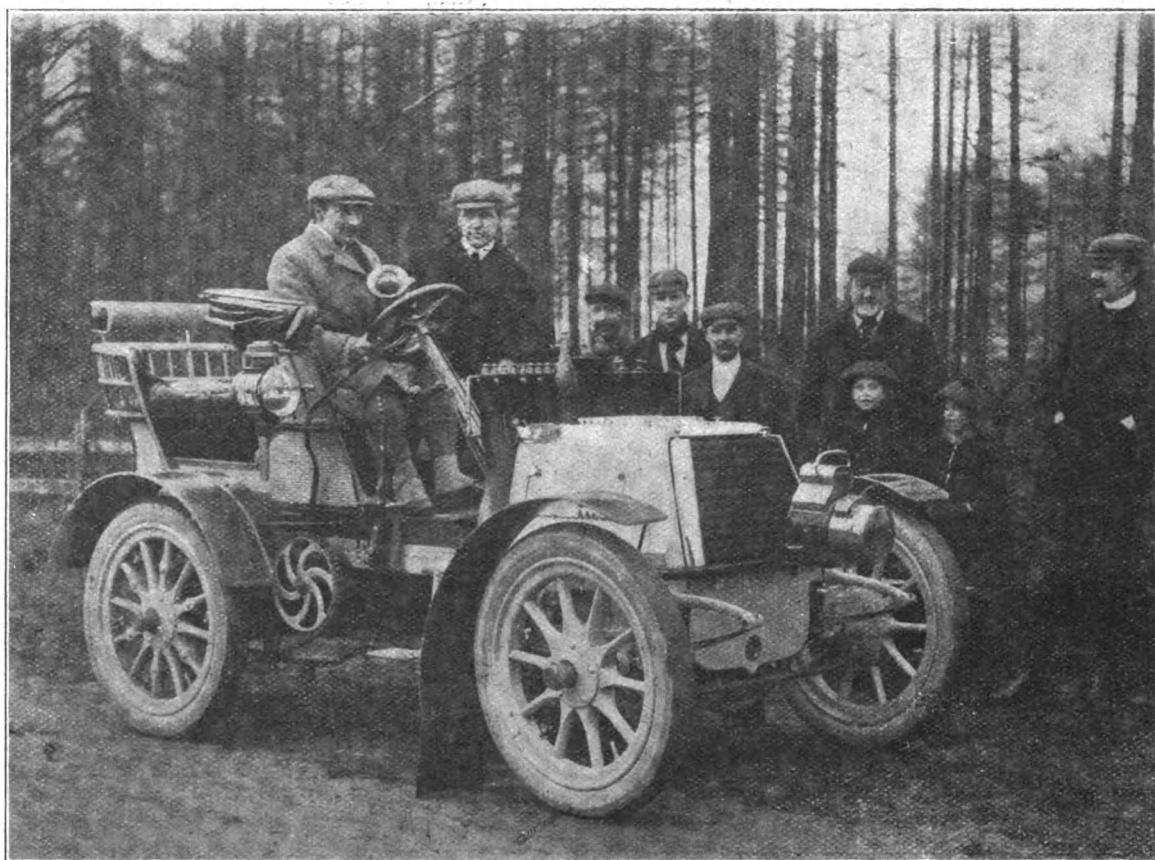
WITH regard to the first. Mr. Carling in his first paragraph states he "cannot enter into the rights and wrongs of the incident," and contradicts himself in his second by saying "I have made enquiries, and am told that 'Flaneur' is mistaken in thinking the policeman who handed Colonel Daniell's recently issued notice did so in any other than a polite and well-meaning way." Now, the incident occurred in the early morning, when there was nobody about, and the only individual alive who could know anything about the affair besides myself was the policeman, whom Mr. Carling has apparently consulted. Police evidence may be sacrosanct in a Huntingdonshire court, but to the automobilist the word of a gentleman usually carries more weight, and it is surprising, to say the least, that Mr. Carling should uphold the doctrine of police infallibility at the very time when he is endeavouring to prove that Hertfordshire policemen are not as other men are.

policeman who needlessly addressed me, to the document he as needlessly gave me, and to certain facts, not opinions, which had come within my cognisance concerning the Chief Constable. There is far too much submission to this sort of thing all the country over, and protest from long-suffering automobilists is imperatively required. Let the notice be withdrawn, and then we can accept the whitewashing Mr. Carling has provided; but, meanwhile, one can only ejaculate, with Bernal Osborne—

"'Twas all very well to dissemble your love.

But—why did you kick me downstairs?"

It is scarcely safe to make mechanical deductions from the evidence of a photograph alone. *La France Automobile*, in its current issue, has an article on "English Voiturettes," and is consists of a reproduction of illustrations of the "Mabley" car, built by John Marston, Limited, of Wolverhampton, and the



MR. J. R. HARGREAVES ON HIS NEW 22 H.P. DAIMLER.

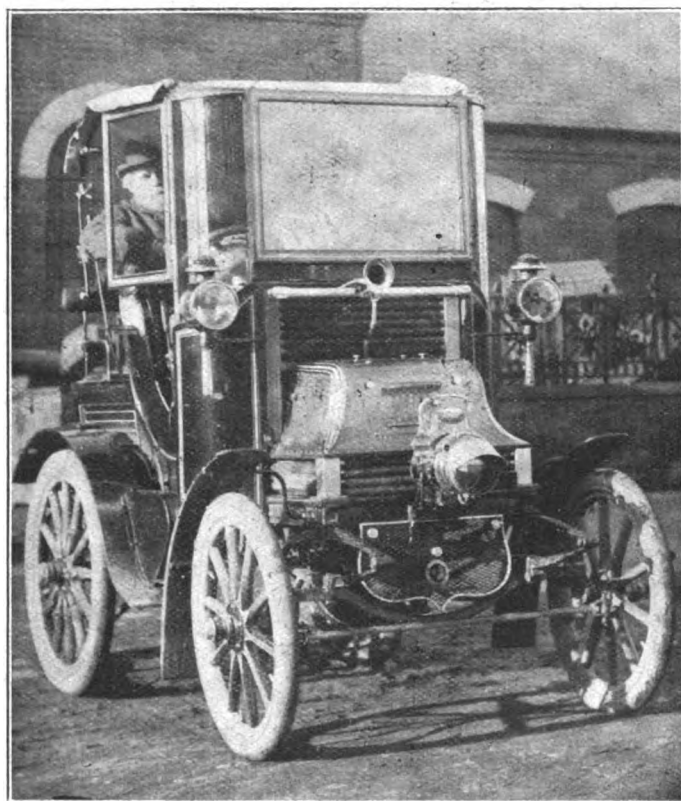
As for the Chief Constable's proclamation, I have nothing to withdraw, and nothing to add, concerning the merits of that document. I quoted it for all men to judge by, and anyone who feels disposed to defend its terms is welcome to do so. But I notice that Mr. Carling wisely shirks the task. If the constabulary intentions are so amiable in Herts, the logical course would be to refrain from issuing a superfluous and illegally worded manifesto. A man driving through the country can scarcely be expected to know the personal disposition of its officials, and would be loath enough to proffer any opinion whatsoever on the subject without evidence; but when a policeman flaunts a notice in his face with an "I could an' I would" sort of air, and the notice itself is found to be inherently indefensible, the stranger may reasonably draw conclusions from the facts, and state them. It is as absurd as it is palpably unfair for Mr. Carling to speak of my remarks on the "general bearing" of the police in his town or county. I confined my comments to the individual

Singer voiturette formed by placing a chair seat over the back axle of a Singer motor-tricycle. It is in respect of the vehicle first named that the French journal has fallen into error. Those who have seen the Mabley will remember that it is built on very original lines, the idea of its designer, a London gentleman, being, I understand, to make the body of the car as much like a boat as possible, though the stem and stern are necessarily truncated, and wheels placed there instead. Amidships are two large wheels, but only one of these is visible in a side elevation of the car. Hence *La France Automobile* has jumped to the conclusion that the vehicle is akin to the old country rotary tricycle, of blessed memory, a machine which was revived some time ago, in one solitary instance, for the use of the then Princess of Wales, our present Queen. The type was never conspicuous for stability, particularly at corners, and no wonder that our contemporary, in the light of its false deduction, should appear sceptical as to its merits when furnished with mechanical power.

A DAY AT LOWESTOFT.

MR. E. ESTCOURT is well known as an enthusiastic motorist who indulges in his favourite pastime in all weathers. When yachting claimed the hours now devoted to land voyaging he was delighted with rough weather, and hugely enjoyed the winds that sent fair-weather sailors to the nearest haven. Living now at Lowestoft in a delightfully situated house commanding the sea and the park, he delights in daily motor trips along the bleak east coast. All through the winter he has motored, his daily mileage never falling below thirty, and often advancing to fifty.

Last Friday we journeyed to Lowestoft for a few hours' re-invigoration on the breezy coast, and, in company with Mr. Estcourt and Mr. Mawdsley Brooke, whose new car will be on view at the forthcoming exhibition at the Agricultural Hall, we indulged in several short spins to Oulton Broads, and other



MR. ESTCOURT ON HIS WEATHER-PROOF CAR.

adjacent places—now deserted villages, but quickly to be re-animated after the coming of the spring.

The wind blew directly from the sea, and came upon the car with all the keenness and the boisterousness of a hurricane. But, comfortably ensconced on the front seat of Mr. Estcourt's well-known Daimler, we heeded not the biting welcome of the elements. In fact, we were as warm and cosy as though taking a trip in one of the new carriages of the northern railway lines. The wind blew, but we felt it not—and people gazed with wonderment as we glided along.

The secret of our comfort is apparent in the accompanying photograph. Mr. Estcourt has fitted his car with a striking carriage front—the most attractive and effective arrangement that we have yet investigated. When the passengers have mounted the car the glass doors at the right and the left are fastened to the top by means of spring clips, and thus those within are secured from the elements without. One day last week Mr. Estcourt drove in the face of a fall of snow which clung to the front window and obscured the vision, but through the rounded panels he was able to see his way without hindrance.

The top and front arrangement is removable—an operation that can be easily performed in ten minutes. It thus converts an open phaeton or car into a closed vehicle of a stylish and taking appearance. The way in which the idea has been worked out is certainly an important contribution to the automobile industry, for it renders a vehicle readily adaptable for wintry and wet weather. Thus the old story that the motor-car is only a fair weather vehicle is losing its point and accuracy.

In our little trip we had the opportunity of comparing the roads of North-east Suffolk with those of Norfolk. The latter county has splendid roads, but in Suffolk their surface is a varying quantity. Some of the minor roads are better than the main highways, and it is about time the authorities began a careful survey of the whole county, with a view to a general and uniform improvement being made. Automobilmism is going ahead around Lowestoft, where the consideration of motor-car drivers for those on the roadway is recognised by the police, who, in their turn, have shown a tolerant disposition. All that is now needed for its early development is that more attention should be paid to the condition of the main arteries of traffic, not only in the district, but throughout the county.

It is reported that a service of motor-cars between Bonchurch and St. Lawrence, Isle of Wight, will soon be inaugurated.

We learn that the Clarkson and Capel Steam Car Syndicate have taken the large works at Chelmsford until recently occupied by Messrs. Crompton and Company, and that they will shortly remove to them from Deverell Street, Great Dover Street, London, S.E.

THE Aeronautical Institute and Club is now being formed to encourage experiment in aeronautics and to diffuse a knowledge of the science thereof. Mr. O. C. Field, 20, Adelaide Road, Brockley, S.E., is the hon. secretary, *pro tem.*, and a meeting will be held at the Society of Arts, John Street, Adelphi, W.C., to-day (Saturday), for the confirmation of rules and election of officers.

A GREAT development in motor-car passenger traffic has taken place between Folkestone, Hythe, and Shorncliffe. For several years past horse conveyances have served the five-mile road between the two first-named towns. Now a rapid and frequent motor-car service has been established. As compared with horse-drawn vehicles, there is a saving of half an hour on the double journey, while the Sandgate Hill, which required the services of four horses to negotiate, is now taken by the motor-cars unaided.

THE Millford trailing car occupies considerable space in the latest catalogue issued by Messrs. Mills and Fulford, of the Crown Works, Coventry. This trailer is of neat and effective appearance, while the method of attachment is extremely simple—a clip encircling the seat pillar immediately above the frame. The joint is the makers' own patent, and the connection works well. Other trailers made by Messrs. Mills and Fulford include a juvenile car suitable for children up to ten years of age, and the "Millford Favourite." Specially made for use with motor-cycles is the Millford motor trailing car, which is of particular interest to our readers.

FROM the accounts given in the local taxation returns recently presented to Parliament it appears that the highest item of expenditure of the County Councils was the sum of £2,024,711 expended on main roads. The length of roads repaired by the County Councils themselves was 15,670 miles, and the amount spent on the maintenance, repairs, and improvements of these roads during the year was £931,263, being at the rate of £59 per mile. With regard to the main roads repaired by urban authorities under the Acts of 1888 and by Urban and Rural Councils it appeared that the mileage so repaired during the whole or some portion of the year was 10,928 miles. The payments of the County Councils in respect of the maintenance, repair, etc., of these roads amounted to £1,093,448, which was an average contribution of £100 per mile.

CONTINENTAL NOTES.

BY "AUTOMAN."

NICE-Abbazia-Nice has received the official sanction of the Italian authorities some ten days ago, and now there is feverish excitement and preparation for the great event, not only at the Automobile Club of Nice, but also in the machine shops specially engaged in the automobile industry. Entries are rolling in, and may reach the number of one hundred. It is going to be a great event. The reason for all the excitement is to be found in the absurd extreme to which the French Chamber of Deputies rushed, under the interpellation of M. Gautier de Clagny, during the Paris-Berlin race, and after the unfortunate accident to Brasier. It looks paradoxical to find the reason for the Nice-Abbazia-Nice race in this event, but it is nevertheless true, for had it not been for this absurd decision there would have been the usual short race in Nice. There would have been a little excitement about it, but it would still have remained a minor race, and attracted but little attention.

COMPARATIVELY few people in England have ever heard of Abbazia, which might be, judging by its name, a Turkish or Egyptian possession, or even some far-away oasis on the African

A MOST useful work is being quietly and unostentatiously undertaken by the *Chambre Syndicale de l'Automobile*, which is affiliated with the A.C.F., and has its headquarters at the *Place de la Concorde*. With every different make of motor-car special spanners are required to fit the various sizes of squares, for no two cars employ the same dimensions of nuts, bolts, and coach screws. Just in the same way, wheels vary in dimensions, and sometimes one make of tire will fit and another will not. Frames, too, vary as much as English weather, each one having its special dimension of body. The *Chambre Syndicale de l'Automobile* has set about to standardise all this work, and the advantages will be inestimable both to the user and also to the manufacturer; there will also result an economy in the price of manufacture.

FRENCH statistics, referring to exportation for the year 1900, have just been published, and in the category of complete motor-cars show a trade equal to nearly 950 tons, valued at about £380,000; more than 25 per cent. of this being for England. A comparison of the exportations since 1897 gives the following results:—1897, 62½ tons, value £25,000; 1898, 175, £70,000; 1899, 426, £170,000; 1900, 941½, £376,000. The trade has more than doubled itself every year; 1901 has more than made a

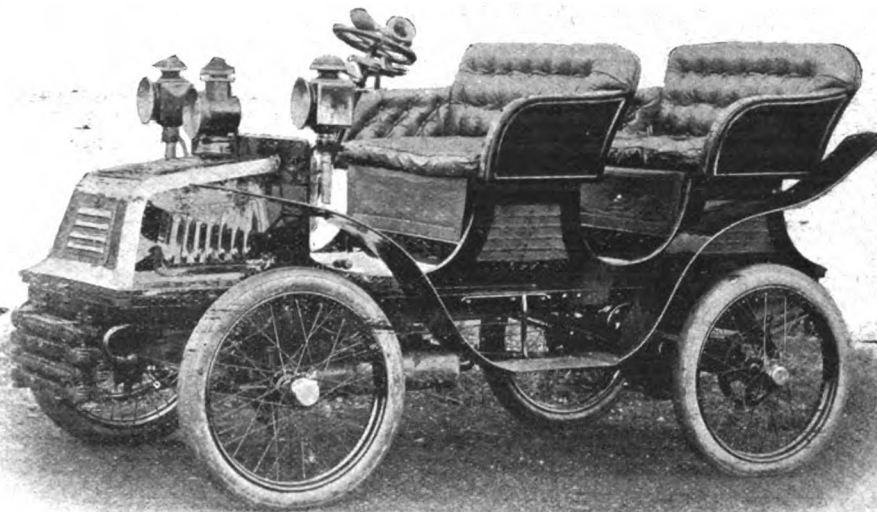


FIG. 1.—THE BROOKS LIGHT CAR. (See page 83.)

desert. Abbazia is a little watering-place on the Gulf of Fiume, in the Adriatic Sea, opposite Venice. It is about seventy-five miles from the Italian frontier, which joins the Adriatic Sea just by the Gulf of Trieste. It is nearly in the same latitude as Bordeaux and Turin, Milan and Venice, and considerably north of Nice. The route of the race will lie through Coni to Turin due north, then westward to Milan and to Mestre, near Venice, then north again to Oderzo, and west to Cervignano, the Austrian-Italian frontier town, and lastly south-west for seventy-five miles to Abbazia.

IN France, as well as in Austria, there will simply be touring because France has refused to allow racing and Austria has not been asked, but across Italy it will be a race, with nothing to limit the speed except the powers of endurance of the cars and the shockingly bad roads.

THE Emperor of Germany still continues to be a fervent *chauffeur*. His latest acquisition is a 16-h.p. Mercedes, which has just been turned out of the workshops of the German Daimler Company, at Cannstadt. The car is capable of reaching a speed of thirty-seven miles an hour on the level. The body is a *tonneau*, and the Imperial arms are painted on both sides of it. Needless to say it has all the latest improvements, including front and back glass screens to arrest the dust.

similar record, and I may be permitted to prophecy the following minimum figures for 1901, 1,900 tons, value £752,000; 1902, 3,800, £1,604,000. All this is for export only, the overflow, so to speak, of an industry which finds its great market at home. This export trade of France is directly due to the universal success of French makers in public competitions, and yet I only know of one English-made car in any French competition for 1902. It is to be noted that the average value of an automobile per cwt. is £20, and this value seems to have been pretty evenly maintained.

SANTOS DUMONT is out again, and his famous navigable balloon No. 6 has been "the" thing to see on the Riviera, sailing out over the Mediterranean, to and fro, with the usual grace and ease, and so far without the slightest mishap, and also, so it is said, without the objectionable pitching, which was one of the chief troubles in his experiments over Paris. In the meantime, M. Severo, the other Brazilian who is wooing fame by projected aerial flight, has completed his air-ship, and is busy inflating the air-vessel with coal-gas, in order to test it. The coal-gas will then be replaced by hydrogen, and M. Severo speaks of taking a preliminary canter round and above the fortifications of Paris. I have already briefly described this air-ship in these columns.

A MOTOR and cycle exhibition is to be held at Antwerp, from the 6th to the 14th of April next.

THE BROOKS LIGHT CAR.

OUR Midland representative, in company with Mr. H. Brooks, took a short spin of about twenty-five miles last week on a Brooks light motor-phæton. The car, which is being put on the market by the Brooks Motor Company, Limited, of Foleshill, Coventry, is designed to seat either two or four persons, is very comfortable when riding, and has a wheel base of some 6 feet, and is 3 feet 10 inches in width. The frame, which is of channel steel, is so constructed that either a pleasure or trade body can be fitted. The removal of either can be effected by simply releasing four balls. The engine is a Pinart, supplied by Messrs. Van Raden and Co., and all future Brooks cars will be fitted with either an 8 b.h.p. or a 12 b.h.p. engine of this type. Electrical ignition is adopted, while the water circulation around the cylinder is maintained by pump and radiators. The pump is operated by a 2 to 1 skew-reducing gear, which gives a positive and silent drive. A point of interest in connection with the double-cylinder motor (Fig. 2) is that very wide bearings are used. There is a $2\frac{1}{4}$ -inch centre bearing between the two cranks. The side bearings—two on each side—are $1\frac{1}{2}$ inch and $\frac{3}{4}$ inch respectively. A very heavy fly wheel, which forms part of the clutch, is fitted, and between the fly wheel and crank chamber is a ball thrust bearing, so that none of the friction from the clutch spring can come on the crank shaft. Another feature is

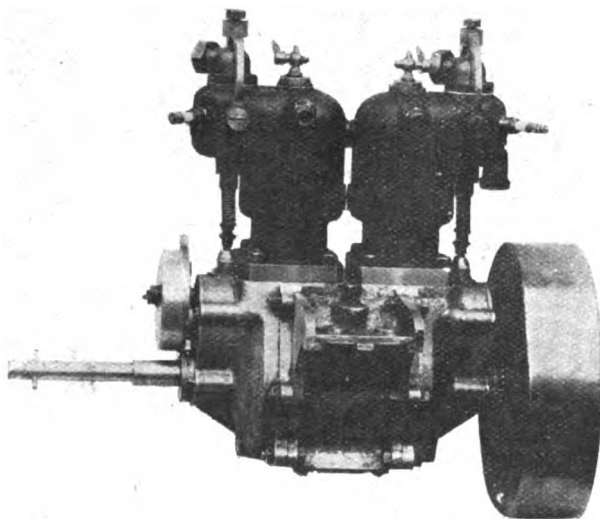


FIG. 2.—THE PINART TWO-CYLINDER MOTOR.

the ease with which both inlet and outlet valves can be taken out. The slackening of one bolt only is sufficient to get at the inlet valve, and a screw-driver is the only instrument required to take out the outlet valve. There is a wide water space for cooling the cylinders; two carburetors are used, and both are fitted with a throttle, so that each cylinder of the engine can be worked separately. The total weight of the 8 b.h.p. motor with heavy fly wheel is 146 lbs.

The power is transmitted through a clutch of special construction, the leather being made up in segments so that the edges do all the work, thus ensuring durability. The springs working this clutch are so arranged that they do not cause any and thrust either on the motor or gear, and can be easily adjusted to any tension desirable to avoid slipping. The clutch is fixed with sliding feathers to an improved type of Panhard gear, giving three speeds forward and reverse motion, designed by the Brooks Company. The pinions on the sliding sleeve can be removed separately, and so easily replaced in case of damage. The gear is controlled by one lever located immediately underneath the inclined steering wheel, and also works in the same plane, so that there is no necessity for the driver to stoop to effect a change in gear. From the gear-box the power is transmitted through an universally-jointed shaft to the rear live axle. Ample brake power is provided, one brake acting on the clutch, another on the countershaft, and one on drums connected to each of the rear road wheels.

SOME POINTS ABOUT MOTOR-BICYCLES.

AS the season is now approaching when a large number of people are contemplating the purchase of a motor-cycle, a few words from a maker of engines and coils for these machines may not be out of place.

The vital portion is of course the engine, as there are no other parts of the motive outfit that are subject to wear and tear, and bar accidents all other parts, such as carburettor, coil, accumulator, driving rim, etc., will last as long as the cycle itself. The belt, of course, wears out fairly quickly, but is not a large item in the upkeep. In designing an engine for the purpose, several makers have worked on the lines of extreme compactness and unduly light weight, especially cutting down the fly wheel weight, supposedly on the assumption that the momentum of the cycle will help the engine over its compression. With a belt-driven cycle this is pure fallacy, and though it sounds practicable with a chain-driven one it does not act in practice.

The cylinder, head, piston, etc., are most difficult to design to give good results, but they are generally well provided for in stroke, piston area, radiating surface, valve area, etc., by most up-to-date makers, and we may safely say that a $2\frac{1}{2}$ in. by $2\frac{3}{4}$ in. cylinder will give ample power for propelling a motor-cycle over average roads, and give fair hill-climbing capacity.

Two years ago I made my first engine for a motor-cycle. The cylinder was 2 in. by 2 in., with cast steel disc cranks weighted with lead on the rims. Of course a 2 in. by 2 in. cylinder sounds, and is, absurd, in the light of latter-day experience, and experience in cycle motor design and manufacture means expensive experiments and many disappointments. Those who are makers of engines can fully endorse this. The 2 in. by 2 in. soon gave place to $2\frac{1}{4}$ in. by $2\frac{1}{4}$ in., and that again to $2\frac{1}{2}$ in. by $2\frac{3}{4}$ in., every part being strengthened in proportion. Steel castings, with pins cast on, owing to the unreliability of the metal, were abandoned, and replaced by cast-iron disc cranks built in the usual De Dion practice. This class of crank is good and sound if accurately built, provided there is a fair length of surface for the cones, and to get this required length means a wide engine; otherwise the cranks will speedily rack themselves to pieces.

We have now to consider the diameter of the discs and fly wheel effect of same, as upon this greatly depends the steady running of the engine, and also the amount of power it is capable of giving out, especially in hill work. Weight for weight a 10 in. diameter wheel is far more effective than a 7 in. diameter one; but then arises the difficulty that if a 10-in. disc crank is to be used, a crank case 11 in. in diameter is required, which will be extremely awkward and cumbersome. If we abandon the disc crank and resort to a solid forged crank and outside fly wheel, we can then have a crank case about 6 in. diameter, and preferably made of phosphor bronze. With a solid forged crank, properly proportioned to its work, all fear of the cranks racking to pieces is avoided, and as this is the vital portion of the engine too much care cannot be spent on the design of this part of the motor.

As we now have the crank in one piece the connecting-rod must be divided to get it into place. This, I contend, is far better than having a crank capable of division, as it allows of wear on the big end being taken up, and can be easily secured so that there is no chance of its coming apart when running. In the light of past experience I have decided to adopt the forged crank, small crank case, and large fly wheel outside, as being the best job mechanically and making the most efficient engine. I am fully aware of the disadvantages of this method, but they can be overcome, and then the advantages far outweigh them.

First, the engine should be so arranged that the weight of engine counterbalances the weight of the fly wheel when attached to the frame. This naturally comes about, as the belt line, being required as close in as possible, the engine proper must be set over to give the narrow line required, and this also gives the required balance. Secondly, the fly wheel must have a light guard over it otherwise

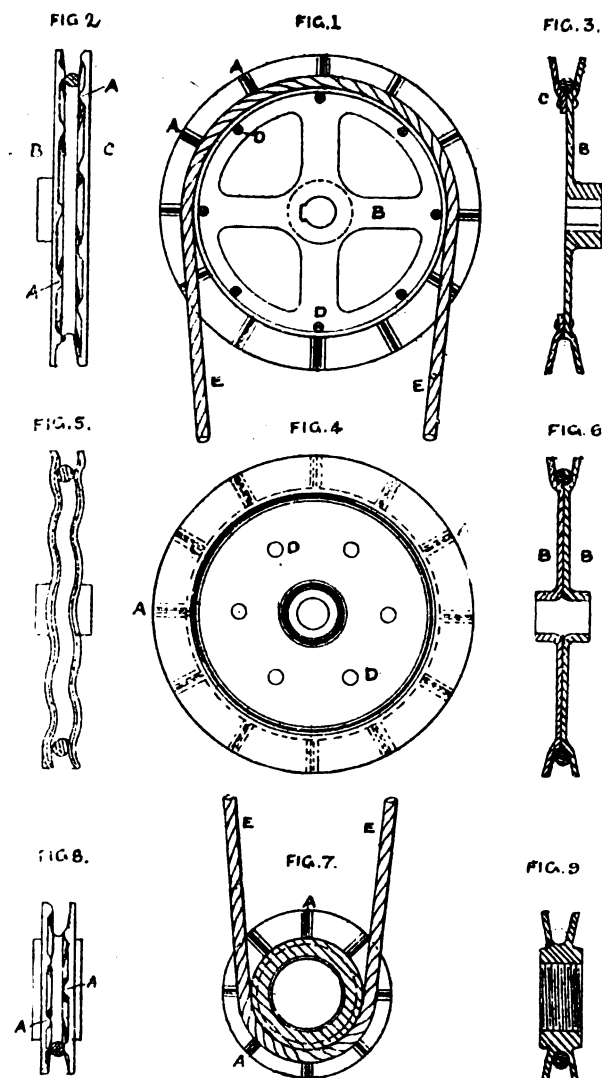
in rainy weather the rider will have a rough time. Of course, a man may chance it without, the same as many do without mudguards, but the application is the same in both cases. Thirdly, the engine must have large and strong bearings. It should have with any form of crank, but very often has not with disc cranks, but it is essential on the driving side with an outside fly wheel. Fourthly, from personal experience, I have not found it any more prone to sideslip than any other form, neither can I find any difference, whatever position the engine is placed in. In fact, there seems little or no difference between such extreme positions as the Werner and Minerva.

Having summed up the pros and cons of the case, an account of two tests made with well-known makes

should have enough contained momentum in its fly wheels to run by itself without any external aid when started by hand. Insist on large bearing surfaces throughout. If you want an engine to go between the tread of a machine, do not cut down the engine to go in the tread, but widen the tread to suit the engine, as a 7 or 8 inch tread is rather an advantage than otherwise on a motor-bicycle. Get an engineering friend to examine the engine, and get his opinion as to what condition it will be in after a few million revolutions at 1,000 per minute. Do not attach an engine to an ordinary roadster bicycle. Have a machine built to take a motor. Do not have less than a 2½ in. by 2½ in. engine.

I have dealt at length with the engine, as it is the vital portion of the whole machine. Scarcely less vital is the coil, as no spark, no go. Do not be deceived by a coil giving a long pale blue spark. A ½ in. hot thick one is better than a 1 in. long thin one, and will overcome the compression of any internal-combustion engine likely to be used on a motor-bicycle. Much might be said about carburettor-spray or surface types, shape of belts, accumulators, etc., but these must be dealt with another time. There is one thing that will prove a boon to belt-driven bicycles, and that is a special-shaped pulley for the engine, which never slips to any appreciable extent, does not unduly wear the belt, and does not pinch the belt in and cause increased friction on bearing the pulley. I give the credit of the idea to my manager, Mr. Fleming, as he designed it himself without having seen anything of the sort before. Upon a search being made for the purposes of protection, it was found to have been "done before," as so many good ideas have been. The patent specification is No. 8235, 1893, and lapsed in 1897. This patent is a complete anticipation of Mr. Fleming's idea, and is open for anybody to use. I have decided, after exhaustive experiments, to adopt this type of pulley on all my motors.

G. CALVERT.



BURNHAM'S PULLEYS.—(Patent No. 8,235, 1893.)

of engines with inside disc cranks may be useful. To No. 1 engine an extra outside fly wheel, 10 ins. diameter and weighing 15 lbs., was attached. The result was that the engine gave an increase of 20 per cent. in hill-climbing capacity and 10 per cent. more speed on level. Of course, it could not be run for any length of time, as it would have speedily fallen to pieces, not having been designed for this extra weight and strain on the driving side bearing. No. 2 engine, of stronger build, was fitted with same fly wheel. Result, increase in hill-climbing capacity 25 per cent., and speed on level 12 per cent. The weather conditions were the same in both cases, and the same coil, carburettor, belt, etc., were used, and the tension on belt was the same in both cases.

In the light of these experiments, my advice to intending purchasers is this: Have an engine that will run and develop its full power by itself, i.e., if fixed on the bench or on bicycle it

THE President of the Board of Trade has received a deputation of members of the Council of the Roads Improvement Association, with reference to the proposed Light Railway Bill of the present Session. Among those present were the Hon. J. Scott-Montagu, M.P., Mr. Robert Todd, Dr. Cannan, M.A., Col. R. E. B. Crompton, C.B., R.E., and Mr. H. Howard Humphreys, M.I.M.E.

A NEW syndicate, known as the Kent Coast Motor Syndicate, has just been formed at Deal, where a line of cars will be established, running between there and a given point in Walmer, a route three miles long. In the season trips will be run to Dover, Canterbury, Margate, etc., at reasonable rates. The cars used will be of the Daimler type, there being six vehicles at present on order, four of them to be of wagonette build and the other two char-a-bancs. The syndicate expect to commence running the cars early this month, and when established, beside running cars they will undertake repairing in all its departments in motor-cars, motor cycles, etc.

WE have received a copy of an interesting little work, entitled "Light Motor-Cars and Voiturettes" (London: Iliffe and Sons, Limited), which has been written by Mr. John Henry Knight, mainly for the guidance of novices and intending motorists. As the title infers, the book deals with the smaller types of motor-vehicles, though attention is also given to motor quadricycles, tricycles, and bicycles. After a brief historical review, the author proceeds to describe in simple language the principle of working of an internal combustion engine. He then describes the main features of some well-known cars, among those dealt with being the Benz, New Orleans, Decauville, M.M.C. voiturette, Argyll voiturette, and De Dion voiturette and the Serpollet and Locomobile steam cars. There is a chapter on motor driving, another devoted to electrical firing, carburettors, and coolers, while the meaning of a horse-power and the method by which it is measured is clearly explained. The book throughout is well illustrated with drawings and reproductions of photographs, and its value is enhanced by a brief explanation of some of the most frequently used technical terms.

NEW WESTON STEAM CARS.

WE had an opportunity the other day, at the depot of the Weston Motors, 14, Mortimer Street, London, W., of inspecting a number of new types of Weston steam cars which are being introduced for the 1902 season. The illustration (Fig. 2) shows a light steam delivery van, which has been specially designed for tradesmen's purposes. Except as regards the body, which is of English construction, the vehicle is similar to the Weston pleasure cars. With the view of economy,



FIG. 1.—THE "WESTON" TAKING UP WATER AT WATFORD.

the boiler is fitted so as to use paraffin as fuel instead of the more expensive petrol, a Clarkson condenser being also provided. Of pleasure cars, we examined two new types—a 6 h.p. Victoria



FIG. 2.—THE "WESTON" DELIVERY VAN.

Stanhope and a 6 h.p. four-seated *dos-a-dos*. In both of these several improvements have been effected in connection with the mechanism and underframe, to which reference is made below, the remarks applying to both vehicles. The Victoria is furnished with an attractively-designed and comfortable two-seated body, painted in black and green, over which is a collapsible hood, provided with small side and rear windows. The body of the *dos-a-dos* is painted green and black, the footboard for the rear seats being made to fold up when not in use.

Coming now to the improvements in the running gear, as it is termed in America, it may first be mentioned that both the frame and springs have been considerably strengthened, and that the differential gear on the rear axle is now enclosed. The boilers are petrol-fired, while a new departure in connection with the two-cylinder double-acting engines is the provision of an automatic lubricator. This contains sufficient oil for a run of fifty miles, and is operated by the condensation of a small supply of steam allowed to pass into the lubricator. As the steam condenses into water the latter gradually rises, and forces oil slowly and in sufficient quantity to the cylinders. Probably, however, the most important new feature of the vehicle is the provision of what is known as a water lifter or sucker. One of the drawbacks to the use of steam cars is that very frequently a hose pipe is not available to refill the water tank, and when this has to be done by means of buckets it becomes somewhat of a sloppy and irksome task. By means of the new water lifter the operation can now be done automatically by means of the boiler. The lifter takes the form of a simple needle injector fixed in between a long length of rubber suction pipe with strainer at end, and the delivery pipe to the water tank at the rear, and having a connection to the boiler. With the gauge showing a steam pressure of not less than 50lbs., the end of the suction pipe can be immersed in a horse trough or rain-water butt, one or other of which is usually found in connection with country hostelrys, and the injector started. Not only can the water tank, which holds 26 gallons, be filled in a very few minutes, but the temperature of the water is also raised considerably during the operation. During a recent test of the apparatus the hose, with strainer, was placed in a tank of water of a temperature of 40deg. The tank was fully charged with 26 gallons in 5min. 1sec., the temperature of the water in the tank when full being 140deg. Thus the liquid, in passing through the injector or water lifter, gained 100deg. of temperature. The value and convenience of the device cannot be denied, as a glance at Fig. 1 proves.

A PRACTICAL LECTURE.

MESSRS. ARTHUR VERNON, J.P., and E. C. M. Instone gave the members of the High Wycombe Mutual Improvement Society an interesting evening last week, when the former discoursed on motor-vehicles, the latter gentleman showing a collection of photographs and explaining the technicalities of the motor. Mr. Vernon informed his hearers that roughly the cost of really first-rate cars was £60 per horse power. Roads were very costly for maintenance. Wycombe main roads cost about £400 per mile, Eton £450, and the general roads throughout the country nearly £54 per mile. Of this cost (about £50,000 in Bucks), it must be remembered that 66 per cent. was occasioned by the wear and tear of horses' feet, and probably 24 more per cent. by iron wheels and manure droppings, so that Mr. Vernon calculated only 10 per cent. arose from weather and evaporation. Motors had no feet, no cutting drags, no dropping of manure, and their elastic pneumatic or solid tires probably caused something under 10 per cent. of the present wear. If motor-cars were used, then, instead of £50,000, the roads in Buckinghamshire would cost £10,000. With regard to the cost of maintaining motor-cars, Mr. Vernon said that several owners of vehicles put the cost of cars of moderate power at 2d. to 4d. per mile, including all expenses. Up to 7 h.p., for petrol and oil, taking, say, a pint of petrol every three or four miles, at 1s. 4d. per gallon, it worked out to about 1d. or 1½d. per mile for petrol, and perhaps an equal sum for oil, or 1d. per mile running cost. To this must be added cleaning and attendance, and occasional mechanic's time in lubrication, adjustments, and small repairs and renewals.

THE first meeting of the Motor-cycle Section of the Metropolitan District Association of the Cyclists' Touring Club will be held on Tuesday next at the Society of Arts, Adelphi, W.C., when several motor-bicycles will be on view, including the Phoenix, Werner, Holden, Chapelle, Derby, Brown, Enfield, and the Excelsior.

HERE AND THERE.



MR. S. S. DORSETT, a well-known Birmingham barrister, is the latest addition to the ranks of local motorists.

MR. W. H. KINGSBURY, of 61, Bath Street, Glasgow, has again concluded arrangements for the sole representation of De Dion-Bouton vehicles in Scotland.

At the last meeting of the Glossop Town Council it was suggested that the Council should purchase a motor-car, as the horses belonging to the Corporation have been frequently ill of late.

SIR ALEXANDER BINNIE says that wear and tear of the roadways is caused more by the hoofs of horses than by the wheels of the vehicles. The motor-car has a beneficial effect rather than otherwise upon the roadway.

WITH regard to the projected motor parcels post service between Manchester and Liverpool, and *vice versa*, we hear that it will be fully two months yet before the service commences. The start is to be made with three vans.

THE scheme for the five minutes' service of motor-omnibuses between Edgbaston and Harborne (Birmingham) is still under consideration. It had been hoped to have been able to inaugurate the service at the beginning of the present year.

DR. HICKMAN has ordered a M.M.C. voiturette, having been decided in his choice by a trip in Mr. F. Guy Lewin's voiturette up Netherall Gardens, Hampstead. This thoroughfare has a gradient of one in five, and the car had four passengers.

THE Paragon Motor-tricycle is described and illustrated in the new catalogue issued by Messrs. Fitzsimons Brothers, of 44, Westminster Bridge Road, S.E. The firm have also brought out the Imperial Paragon Motor-bicycle, which is claimed to be extremely easy to manipulate.

THE Martin Pneumatic Tyre Syndicate, Limited, has been registered with a capital of £10,000 to acquire certain patents granted to G. W. Pitt and E. Martin (British rights only), relating to improvements in pneumatic tires, and to carry on business as manufacturers of pneumatic tires, etc.

MESSRS. STRICKLAND AND COMPANY have acquired the works at Teddington, hitherto occupied by Messrs. Strickland and Company, Ltd. as their Thames branch, and will carry on the business of oil motor manufacturers, both for launch and car work, and motor-car builders. The management of the yard will remain in the hands of Mr. Strickland.

THE Caledonian Motor-Car and Cycle Co., Ltd., of Aberdeen, have issued a new price list of the Peugeot motor-carriages, for which they are the sole agents in Scotland. Illustrations are given of the 10 h.p. car with double phaeton body, the 8 h.p. light carriage, and other types of the Peugeot car. A special page is devoted to the 5 h.p. light parcel car designed to carry six cwt. of goods.

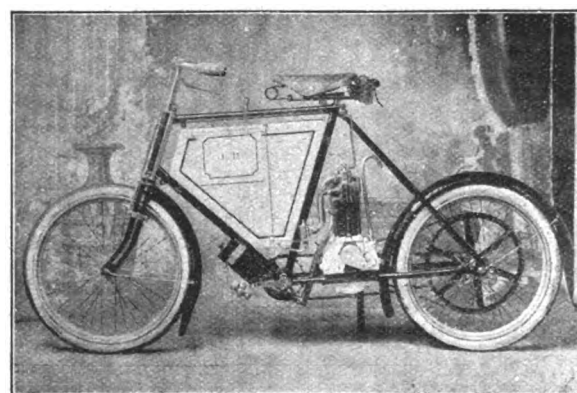
AN exhibition of arts and crafts trades and industries is to be held at King's Lynn next week under the patronage of the King and Queen. Messrs. W. H. Johnson and Son, of that town, intend making a good display of motor-cars and motor-bicycles, the latter being a department which the firm have added to their business within the last twelve months. Messrs. W. H. Johnson and Son are agents for De Dion-Bouton, Limited, and also Werner Motors, Limited.

THE James Cycle Company, Ltd., of Birmingham, are introducing two varieties of motor-bicycles. One is fitted with the ordinary type of Minerva engine, transmitting the power by belt to a special rim on the back wheel. The other is fitted with the Derby engine, in which the power is transmitted by means of a chain-driven friction wheel acting on the tire of the rear wheel. The frame of the machine is, of course, specially strengthened to stand the extra strain, and the total weight runs from 70 to 80 lbs.

TO-DAY (Saturday) an informal meet of motorists will take place at the Star and Garter, Richmond, at twelve noon. An ascent will then be made of Petersham Hill, each car carrying its full complement of passengers. After lunch, the Test Hill in Richmond Park will be negotiated. Probably some of the results will be utilised in the forthcoming Badminton book, in connection with which certain hills near London are being specially surveyed.

J. T. JAMES, Birmingham Rim Works, Loveday Street, Birmingham, has devised a means whereby a pneumatic tire cover of either the thickened edge or wired-on type can be secured to the wheels of any ordinary carriage fitted with wooden wheels. The method consists in simply using two circular flanges corresponding in diameter to the wheel; each of these flanges has a little groove around it, and so grips the wire or thickened edge of the cover against the wooden wheel. The flanges are secured to the wheel by a series of bolts and nuts, and in case of puncture by removing these nuts the flanges can be taken off and the inner tube immediately exposed. It is claimed to be impossible for the tires to creep when they are securely fastened to the wheel, and even when deflation takes place they are still held in place.

THE accompanying illustration shows the "J.D." motor-bicycle, now being put on the market by Messrs. Dickinson and Sons, of 4, Forest Hill Road, East Dulwich. As will be seen, the motor is of the De Dion pattern, 1½ h.p., fitted with variable electrical ignition. The motor is placed vertically between the bracket and the back wheel, in which position it is claimed to reduce the tendency to side-slip. The accumulators are placed



in compartments made in the tank, which has a capacity of 2½ gallons of spirit. The machine is fitted with an atomising carburettor of Messrs. Dickinson's own design. The motor transmits the power to the rear wheel by a chain; pedals and chain gear for starting the motor being also provided. The makers state that the engine requires no assistance uphill, easily mounting the steepest grades at a good round speed; the machine being geared to 30 miles an hour.

FOR some months past Mr. Van Hooydonk, the maker of the Phoenix motor-bicycle, has been experimenting in the direction of two-speed gears for motor-bicycles, and has devised a simple and ingenious arrangement. The method adopted is to fit on the right-hand side of the rear wheel hub an ordinary free-wheel clutch for the pedal driving. On the opposite side, the usual form of belt pulley, instead of being attached to the spokes, is carried on a drum, which is fitted to a sleeve which rotates inside the hub proper. On the inner periphery of the larger end of this sleeve, or internal hub, are cut teeth which mesh with four small pinions brought in or out of mesh by means of a suitable cord projecting through the hollow axle end, and connected up to a lever on the top tube, or handle-bar, as desired. The change from high to low gear and *vice versa* is perfectly smooth by the simple movement of the actuating lever, or, if desired, both gears can be thrown out of mesh, and the engine run free entirely.

CORRESPONDENCE.

THE GORDON-BENNETT CUP.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—“Even Homer nods,” and your contributor “Automan” must have been dreaming when he wrote that “Fournier has been chosen as one of the defenders of the Gordon-Bennett Cup, and he will drive a new Mors car with ‘Continental’ tires.” As recently as in your issue of January 11th he wrote that “Switzerland could not compete owing to the lack of Swiss-made tires,” and one of the regulations of the contest, I believe, is that everything connected with the cars of the respective countries must have had its origin in the particular country. Where did “Automan” obtain his information as to a French car fitted with Hanoverian tires being allowed to compete? Perhaps he will tell us.

—Yours truly,
A POSSIBLE ENTRANT.

A QUERY RE STEAM CARS.

TO THE EDITOR OF *The Motor-Car Journal*.

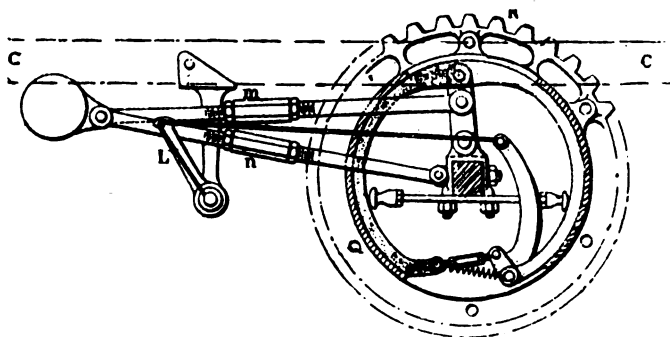
SIR,—As I am, like “Naval Engineer,” an intending purchaser of a car as soon as I am suited, I was in hopes of seeing more about steam cars from those that have them in use. Steam vehicles seem to me to be more reliable, and there is evidently less noise, rattle and vibration; but as to the exhaust, could not this trouble be got over, when employing a flash boiler, by using the exhaust to heat the feed water, then causing it to pass through condenser (using again what was condensed) and then, in case any should be visible on hills, etc., have a superheating coil in the boiler so as to make it invisible? Will an expert reader tell us how this method and this kind of boiler would act, and will those that have steamers in use tell us the faults of different makes? Hoping this will start a lively correspondence similar to that we have had on motor-bicycles.

—Yours truly,
WILLIAM LEE.

BRAKES.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Referring to Mr. P. N. Hooper's letter on this subject in your issue of the 18th ult., I send you a sketch of the new brake which Messrs. Charron, Girardot, and Voigt have introduced. It was shown fitted to the new car they exhibited at the recent motor-car show in Paris, and, as will be seen, consists of two opposing segments which expand inside a drum attached to the hub of the rear wheel. The characteristic features of this brake, according to the inventors, are:—The force on the adjustable tension rod *m* is in a plane very near to the plane of the chain tension. The axle may thus be reduced in size without



danger of it being thrown out of alignment by the brake action. When the brake is applied the chain adjusting rod *n* works under tension, the brake tension rod *m* under compression, and the shaft to which both are joined at their forward end under a shearing strain. The supports of the pinions are therefore only subjected to the difference of the two opposing efforts, which is negligible. In most other arrangements, it is claimed, the effort on the countershaft supports is equal to the sum of the brake and chain rod stresses. Moreover, the axle, the chains, the brakes, and even the tension cables act around the same centre line—the axis of the chain pinion shaft—so that passing over a *canté eau*, or deep rut in the road, will not cause any binding. One advantage of the arrangement is that the wheels may be taken from the axle without affecting the brake. I may add that the action is absolutely the same for both directions of motion.—Yours truly,

DOUBLE ACTION.

QUERIES RE DE DION MOTORS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Replying to Mr. G. H. Hardy's query in your issue of the 18th ult. with reference to his 2½ h.p. De Dion tricycle, the exhaust pipe of which, and all round the exhaust box, gets completely red hot after going a very little distance; he does not say whether the same thing

occurred before he fitted a stronger spring to the exhaust valve. I take it, however, that such would be the case. Perhaps he is unaware that all internal combustion engines will heat in this manner when run “light” with a full charge of gas, and I can only surmise that he is in the habit of driving with his mixture valve open wider than is necessary. Better results would be obtained and heating considerably reduced by using as little vapour as possible and increasing or decreasing the speed up to a limit by means of the ignition lever.—Yours faithfully,

J. W. STOCKS.

STARTING A MOTOR-TRICYCLE.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Can any of your readers assist me in the following? I have fitted a Longuemare carburettor to my 2½ h.p. trike, and have inserted sizes 22 and 10. I have great difficulty in starting. Immediately on the explosion taking place, I have to advance spark; it then runs about one mile at about three-quarters the speed it used to do with the surface carburettor, then slows down to about half, and in going up hill gradually slows down and stops. If I stop a minute at bottom of hill, it will go up to the top all right. Compression is good, but the explosion sound weak.

—Yours faithfully,
W. AULD.

FIRST IMPRESSIONS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—By describing a run on my first motor-car, from London to Leeds, I may remind intending purchasers of small pleasure motor-cars to hurry up and get all the pleasure out of the coming summer days that is possible.

Having purchased a M.M.C. 6 h.p. car, I was provided by the makers with a competent driver, and started out with four persons on board on Monday morning about 11.30, going over very heavy and greasy roads, through Finsbury, Highbury, and Barnet on to Hatfield (about twenty-seven miles), where we had a short stay. On again through Baldock and Biggleswade to Hitchin, where we put up for lunch.

After leaving Hitchin it took us all our time watching the roads, which were covered right across with flints roughly laid down, not rolled or having any covering whatever. One would think the owners of the horses which have to travel over these roads day after day would make an outcry to save their animals from being lamed, apart from the motorists, cyclists, and other users of the road. Mile after mile we travelled over this disgraceful road, which extended, I should think, fifteen to twenty miles.

We met a few cyclists walking their machines along the pathway rather than have their tires spoilt. They evidently had come out for a cycle run, but it turned out to be a walking tour. Two or three were chancing it by riding on the footpath.

At last, when within half a mile of Norman Cross, we had one tire cut clean through, causing a puncture. Our driver soon had it put right again, but it now being dusk and having some seventy-six miles we put up for the night at Norman Cross.

Off again by 8 o'clock next morning, we made good headway, the roads now being fairly good and getting better as we went along. The ride on through Grantham and Newark to Retford is a grand one. This being our first motor-car run of more than two or three miles, we can now proclaim it to be one of the most appetising sports or pastimes. If anyone troubled with insomnia will try a ride like this they will want to sleep overtime to make up for previous loss. We arrived in Leeds about four o'clock in the afternoon, having come 130 miles since 8.0 a.m., including stoppages for meals.

After getting home I took the car in hand, and after some hours' tuition was able to drive. I have since driven nearly 100 miles, including the streets of Leeds, Bradford, and York.—Yours truly,

F. BEKVERS.

MOTOR-BICYCLES FOR 1902.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Like many others I have been very interested in reading the correspondence on the merits and demerits of the motor-bicycle for 1902. I was rather disappointed and surprised that the “Singer” was not once mentioned. As a visitor to the last cycle show, I inspected and rode, amongst others, a Singer, and, although a non-motor-cyclist, I could not help being forced to the conclusion that this machine was far ahead of all others. Easy to manipulate, compact, low gravity, not liable to be smashed in a fall, powerful, though perhaps not able to break speed records. In fact, with the exception of a high price and a little extra vibration, I could see nothing against the Singer as a motor-bicycle or rather bicycle-motor. While this machine is on the market I cannot see ground for such a statement as “The motor-cyclist either has not or cannot” emancipate himself from the disabilities of the belt.—Yours truly,

MEDICUS.

FRANCE COPYING ENGLAND.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—In Mr. Edge's reply to my query under above title, and also as to who were really first in the points discussed, he states that plans were made in 1898, so that the Napier engine could be fitted with an

aluminium jacket. I believe that it was in the year 1900 that the first 8 h.p. car of that name appeared in the 1,000 miles trial in a very unfinished condition, and I was not aware that the Napier was on the market before that date.

In the summer of the same year I saw the Napier 16 h.p. on one of its first appearances at a hill-climbing competition. This machine was not fitted with an aluminium jacket, according to my recollection; nor was Mr. Mark Mayhew's, which was the next 16 h.p. turned out.

It was in the autumn of 1900 I had reliable information of the plans for the new 50 h.p., and in connection therewith the aluminium jacket was mentioned to me as a new idea, although I was aware that this had been used in France already; but I did not mention that. As we all know, this 50 h.p. machine did not materialise publicly till the Paris-Bordeaux 1901.

Mr. Edge suggests that a 16 h.p. machine on which he competed in France in 1900 had an aluminium jacketed engine; but does he mean that it could have been so fitted? Because, to quote his own letter, he writes, "I find, on referring to dates, that the Napier was designed so that an aluminium jacket could be fitted in 1898" (two years before its first appearance!); why, then, were the first Napiers not made so?

Many practical engineers will recollect that numbers of the early gas and petrol engines were made with detachable water-jackets. There was nothing to hinder aluminium being used, or brass, or gold in these cases, if one chose, and I presume that this is the real measure of what Mr. Edge suggests.

Now as to the Mors cars, these were on the French market actually fitted with an aluminium jacket to the engine in the very beginning of 1900, whilst at that time the first Napier was still on its trial trip. I have letters from Mors to prove this, and they also tell me that they designed these a very long time before that date. I think this settles the question as to which firm were the first to place this improvement on the market in a practical form.

As to straight exhaust valve stems, if Mr. Edge will refer to the "Automotor and Horseless Vehicle Handbook," published at the commencement of 1900, he will find on page 164 a very fair diagram of the first 10 h.p. Mors engine, produced in 1898-99; this embodies the straight valve stems, and also governing on the induction, as he will find mentioned. Though this has been claimed as introduced by the Wolseley, Mors had also a most ingenious exhaust valve lifter in connection with it, which he soon found unnecessary. This engine was distinctly a modern type. But the old Mors dog-cart engine also had straight exhaust valve stems, and this was produced in 1896-97, according to my recollection.

As to power for weight, I am in communication with Mons. Mors, and expect all figures at an early date. I shall feel obliged if Mr. Edge will kindly send the weight of his 50 h.p. car, when it started for the Paris-Berlin race, and its brake h.p.

From what I hear, our friends the French will be again in front with new improvements for this year (as they were in 1900), which I hope we will not copy and claim next year.—Yours truly,

ANTHONY WESTLAKE.

TIRES FOR IRISH ROADS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I am the owner of a 6½ h.p. Daimler, which I purchased new last season, and have since driven about 1,000 miles. The back tires on the wheels are ordinary 2½ in. solid rubber, and are now worn and cut up so much that they are practically done for. This will give an idea of how hard our Irish roads are on motor tires. I should like to have the opinion of your readers on this question as to the best type of tires to fit.—Yours truly,

DUBLIN.

MESSRS. STUBBS AND ROGERSON, of Winsford, Cheshire, write:—"We have a car and cannot find out why the carburettor floods. The valve is tight, the float is tight, also the ball on top. Flooding takes place when running only. We shall be much obliged if any readers can explain the cause.

MR. WILFRED BANNER, the President of the Breisgau Automobile Club of Freiburg (Baden), writes:—"I wonder if some of your numerous readers would be good enough to let me know, through the medium of the *Journal*, the best way to handicap cars of different h.p. and weight in a hill-climbing competition over a measured kilometre.

FROM Messrs. L. Loewe and Company, 35, Farringdon Street, E.C., we have received a catalogue of the many machine tools made by the Bullard Machine Tool Company, of Bridgeport, Conn., U.S.A. Included in the list are a number of tools which should be of interest to all motor-car builders.

THE Firefly Motor and Engineering Company are opening commodious premises on the Brighton Road, at 72, High Street, Croydon, where they will keep a large stock of spare parts for all leading systems of motor-cars. A garage for twenty-five cars with a large inspection pit is being erected, which will be open day and night, and will be fitted with the latest machine tools for repairs. Mr. William Glass, whose name is well known in the automobile world, is the manager of the new concern.

FURIOUS DRIVING CASES.

At the Norwich Shirehall, Mr. J. R. Hargreaves has been summoned for driving a motor-car at a greater speed than 12 miles an hour, at Horsford, on January 10th. The Chairman of the Bench (Mr. E. S. Trafford), said motor-cars had come to stay, and they had as much right to the road as any other vehicle as long as they conformed to the bye-laws. Everyone knew Mr. Hargreaves was one of the most experienced amateur drivers, certainly, in the county, and if Mr. Reeve put defendant into the box and he said he was not going more than 12 miles an hour, they would accept his statement, and thus save the time of the Court. That was the opinion of himself and colleagues. Mr. Reeve (for Mr. Hargreaves) said he was not in a position to do that, and the case must take its course. Ultimately a fine of £10 and costs was imposed.

JOHN OVERTON, of 5, Mortimer-street, Great Portland-street, London, was summoned by the police at the Marylebone Police Court, for driving a motor-car furiously on January 21st. Police-constable White, said that the defendant was driving round the inner circle of Regent's Park at the rate of something over 18 miles an hour. Mr. Staplee Firth, for the defence, submitted that the policeman's watch could not be taken as evidence in the case, as its accuracy had not been proved. Furious driving had not been proved, for no case had been decided defining what number of miles per hour was to be deemed furious driving. Mr. Curtis-Bennett said he should accept the constable's watch as good evidence, and should rule that going at 18 miles an hour was furious driving. He fined the defendant 40s., with 2s. costs, or one month.

HARRY GEORGE LEE, The Hollies, Acton Lane, Chiswick, pleaded not guilty, before the Eastbourne Borough Bench, to the charge of furiously driving a motor-car. Police-constable Braynell stated that at 10.30 a.m., on the 13th ult., he saw defendant drive a motor-car round the corner of Cavendish-place and Seaside-road, Eastbourne, at a speed of about twelve miles an hour. The car, which was on the wrong side of the road, frightened a horse, causing it to jump on to the pavement. John Davey said that if the horse had not sprung across the road, the motor-car would have dashed into a carriage. Frederick King said the pace was between fifteen or sixteen miles an hour. Defendant said he was only driving at eight miles an hour, and he went on the wrong side of the road in order not to further frighten the horse and cause an accident. In answer to the Chairman, he explained that he was a motor car driver in the employ of Mr. Harmsworth. The Chairman said the Magistrates were determined not to allow motor-cars to be driven in Eastbourne to the danger of the public; he would have to pay a fine of £5 and costs, £1 1s. 6d.

At Braintree Petty Sessions, Henry Cooper, of Halstead, was charged with driving a motor-car at a pace exceeding 12 miles an hour at Braintree, on January 12th. Police-constable Watson deposed that he saw the defendant come round the corner from Landpit Road on a motor-tricycle. Noticing that he was travelling very fast, he at once looked up at the town clock, and saw that it was exactly nine minutes past eleven. Having held up his hand, he watched him down London Road and over the railway bridge, and looking up at the clock again, found that it had taken about thirty-six seconds for him to get out of his sight. The Clerk: Could you tell as fine as that on the town clock? Witness: Oh, yes. I have since measured the distance I saw him cover, and find it just a quarter of a mile, which would give a rate of 25 miles an hour. He was travelling like the wind. Superintendent Terry said the defendant was fined six months ago for furiously driving a motor-car in Bank Street, Braintree. He was now fined £1 and 12s. 6d. costs.

THE PURCHASE OF A MOTOR-CAR.

IN the High Court of Justice, on Monday, before Mr. Justice Bigham and a common jury, the case of Docking v. the Sports Motor-Car Company was heard. The plaintiff entered into an agreement with the defendants for the delivery and acceptance of a motor-car at £183 11s. It was stipulated that it should be delivered within four weeks in perfect working condition. He paid £61 3s. 8d. on deposit. It was not delivered to time. He contended that the motor-car when it was alleged to be ready was in a most defective condition. He therefore sued for the return of the deposit. For the defence it was submitted that the car was in perfect running condition at the date of trial, except that the chain broke. That was replaced at once, and the machine was ready for work. Mr. Montague Lush appeared for the plaintiff, and Mr. Wallace, K.C., and Mr. Ellis Hill represented the defendant. Mr. F. R. Docking said that on or about May 9th of last year he ordered a motor-car from the defendants, the agreed price being £183 11s. He paid £61 3s. 8d. as a deposit, and stipulated that the car should be delivered within four weeks. He had been prepared to accept delivery of the car within the stipulated time. When it was delivered on the trial trip the chain broke. The car was unworkable, and could not be run at all. Finally he extended the time to June 24th, but even then the car was not in working order. As a matter of fact, he and his friend had tried for four hours to make the car start, but all to no purpose. After some further evidence, the case for the plaintiff concluded. Mr. M. Capellen, the manager of the defendant company, said that except for the faulty chain the car was in a perfect condition on June 11th, when it was delivered. On the trial trip, after about three or four miles, the chain did break. Mr. Salisbury, an engineer in the defendant's employ, admitted in cross-examination that a few days ago the car in question was towed

through the streets by another car. Mr. Seyd, motor car manufacturer, deposed to examining the car on two occasions. The first time—June 12th—it started very regularly, and behaved very well indeed. He and the defendant tried it in Hyde Park, and then went up Primrose Hill, where it ran admirably. On the previous day he went some sixty or seventy miles in a gale of wind in this particular car, and it again ran without a hitch. The jury found for the plaintiff, and judgment with costs was entered accordingly.

A BREAKDOWN.

At the West Riding Police-court, before Sir Alexander Wilson and Mr. E. Willoughby Firth, there were two charges against Wilfrid Ridout Wills, engineer, Sheffield, the first of causing an obstruction by leaving a motor-car on the highway, and the other with leaving the car without a light. The car, an experimental one, of 5 h.p., by a local maker, belonged to Mr. A. W. Dixon, of Hillsbro' Hall, and on the Sunday before last was being driven by Wills. Just after noon the car broke down at Middlewood Cottages, just opposite the policeman's house. The engineer removed the car, as far as possible, to the side of the road, and went in search of a horse. This form of tractive power was not to be had at once, and the car remained in the road until 7.30, being all the while under the observation of the constable, who lit the lamp himself after dark. Mr. A. Howe, who defended, urged that no harm was done, and suggested that it would be a fit ending to an unfortunate incident if the summons was withdrawn on payment of costs. This course was adopted.

STANDS AT THE MOTOR-CAR EXHIBITION.

ROBERT EDDIE AND Co., builders, 17, Tynedale Place, Upper Street, Islington, have sued the Sirdar Rubber Company, 36, Duke Street, E.C., for £7 1s. 3d. for fitting up a stand at the Agricultural Hall. Defendants filed a counter claim for one half week's rent of space at the Agricultural Hall, the use of which was lost to them by the negligence of plaintiffs in not completing the stand in time, also for one half week's loss of time of defendant's traveller in consequence of this negligence, and further for a half week's loss of time of defendant's managing director, owing to the same cause. After hearing both sides, the Judge held that the work was carried out according to instructions given by defendants, and found in favour of plaintiffs on the claim for £7 1s. 3d. He thought the counter claim had not been made out, so he also found in favour of plaintiff, with costs in both instances.

DRIVING WITHOUT A LIGHT.

At Warwick Police Court, Lindsey Frost, Leek Wootton, Warwick, was summoned for driving a motor-car in Jury Street, Warwick, on January 15th, without a light. Defendant had to pay 15s.

THE AUTOMOBILE MANUFACTURING COMPANY.

THE petition of the Clipper Pneumatic Tyre Company for the compulsory winding up of this company came before Mr. Justice Byrne last week. Mr. Ramer, in support of the petition, stated that it was opposed by certain debenture-holders on the ground that their debentures covered the whole of the assets of the petition, and, a receiver and manager having been appointed, no useful purpose would be served by a winding-up order. The petitioners were creditors of the company for goods supplied, and their contention was that the debentures referred to were bad by reason of non-registration, and, further, that they were a fraudulent preference. Counsel for the debenture-holders and the company said that an action had been instituted to test the validity of the debentures, and he undertook that if the petitioners made an unsuccessful application to be represented in these proceedings his clients would pay the costs. Under these circumstances, his Lordship directed the petition to stand over for a week, saying he would consult Mr. Justice Wright, who had previously had the petition before him.

DAMAGE TO A MOTOR-CAR.

THE Cambridge Auto-Car Company sued, at the local County Court, Mr. Arthur F. Gibbs, late of Cambridge, but now living in London, for £8 13s. 6d., the amount of damage done by him on one of their motor-cars. In opening his case Mr. Miller said that the car was hired by the defendant on September 22nd and 23rd of last year. The hire money was to be £1 11s. 6d., which was to be written off the price—£85—if the defendant decided to purchase. The defendant signed an agreement, holding himself responsible for all damages. When the machine went out of the workshop it was in splendid condition. Geo. Charles Bedwell stated that when the car was returned it was in a disgraceful condition. The front mud-guard was smashed, the rubber off the back tires was missing, the engine was broken away from the frame of the machine, part of the exhaust box was smashed, the lamp had gone, and part of the pump was missing. Witness spoke to the defendant on the matter, and he said, "Someone ran into me." He further said that he would pay, and asked witness to send in the bill. The defendant stated that they had had trouble with the machine. The vibration simply shook it to pieces. On

the outward journey to London the motor broke down at Bishop's Stortford, but he ultimately got it to its destination. It took him from 10 o'clock in the morning to 4 o'clock in the afternoon to return home. Josiah Wheeler, a partner in the firm of Wheeler and Co., motor manufacturers, also gave evidence. Mr. Wootton suggested contributory negligence on the part of the plaintiffs in sending out the machine in a faulty condition. His Honour gave judgment for £5 12s. 6d.

THE Thornycroft steam watering cart, No. 89, belongs to the Corporation of the City of London, and may generally be seen receiving supplies from a standpipe at the City end of London Bridge about 11 p.m., prior to its work of cleansing the streets.

MR. F. J. B. MITCHELL, of the Inland Revenue Office, Market Drayton, has been writing to the local papers pointing out that motor-cars are taxed. Evidently the spirit of enterprise has reached the official mind.

THOMAS BRAMLEY, 6, Lincoln Street, Coventry, was summoned at Coventry for riding a motor-bicycle without having a lighted lamp attached. Defendant pleaded guilty, stating that he was merely trying a motor-cycle for a few yards. A fine of 2s. 6d. and costs was imposed.

OUR attention has been drawn to a silly paragraph in the *Globe* describing a farewell to horses which is alleged to have been celebrated in Vienna recently. "The last horse-drawn car paraded the streets, driven by the oldest driver, and accompanied by a band of music." The horses were wreathed with flowers, and the people are described as cheering "the last of a dying race."

A SAD misfortune has befallen Mr. F. Buchanan, of Cosham, Hants, the inventor of an air-ship designed to travel against the wind. The air-ship was fully described in our issue of August 31st last, and was almost ready for a trial trip. But on Sunday it was completely destroyed by fire, and a tramp is now under remand on the charge of setting fire to the shed in which it was stored.

AMONGST the steam-cars now being introduced from the United States is the Overman, which Mr. Overman has located at the Motor Mart depot in the Euston Road, N.W. The main features of the vehicle have previously been made known. An important improvement has, however, been effected lately, by means of which the driver can start the independent air and water pumps from the seat, thus securing, when desired, higher pressures than are ordinarily allowed by the automatic regulation.

THE Kensington Motor Company, Ltd., have opened new offices and showrooms at 64, Hammersmith Road, W., as an annexe to their works in the Sinclair Road, Addison Road, W. These will be found useful by motorists in the locality for the storage of cars as well as the supply of petrol and for repair work. The works in the Sinclair Road are open night and day throughout the week, and will remain under the direct supervision of the company's managing director.

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THE Motor-Car Journal.

Vol. III.]

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COMMENTS.



MR. W. E. ROWCLIFFE presided at the third annual meeting of the Manchester Automobile Club last week. The Club has now eighty-two members, and the funds in hand are substantial. Mr. Rowcliffe reviewed the general progress of automobilism during the past year, and referred to the recent deputation of the County Councils Association to the Local Government Board. The decision of the Association to recommend the abolition of the speed-limit was heartily endorsed, and the report of the Committee was unanimously adopted.

A Stubborn Bench.

MR. PERKINS, of Gainsborough, has been summoned under the Locomotives Act of 1865 for not rendering assistance to passing vehicles, although he was driving a light locomotive at the time of the alleged offence. His solicitor urged that the Act under which he was charged did not apply, but the police were of the contrary view, and the Chairman of the Bench spent some time in arguing in support of their contention. Ultimately it was discovered that the earlier Act was repealed, so far as light motor-cars are concerned, by the Act of 1896; and even then the Bench admitted the point with an ill grace. This amateur administration of justice is not always characterised by wisdom—often it is marked by lack of knowledge on minor legal points—and only the tenacity of the solicitor seems to have saved Mr. Perkins on this particular occasion. Even then he was fined—for not drawing to one side of the road, in order to give approaching vehicles their proper proportion of the metalled portion.

Protection from Animals.

AUTOMOBILISTS will have to add another organisation to those that have already been formed, and a Society for the Protection of Motorists from Offensive Beasts would not be an inappropriate title for a new combination. Last week we recorded the chase of a motor-car by a runaway horse at Reigate, and at Liverpool a fierce bull has made a most unwarrantable attack upon a Rochet car. Journeying outside the city, the driver of the vehicle noticed the animal intently gazing at the red colour of the car. The bull lowered his head and rushed as though "going for" the car in true bovine fashion. But when he got to close quarters the whizzing of the motor undecided him, and instead of indulging in a reckless charge, he grabbed one of the pneumatic tires with his teeth and tried to shake it. The car was badly damaged in consequence, and the occupants hardly appreciated the situation. Still it ended without physical hurt to motorists or bull; but the lesson will probably not be lost upon owners of bright red cars. It adds a new terror to the perils of the road.

New Works at Burton.

WE understand that arrangements are nearly complete for the establishment of a motor-car factory at Burton-on-Trent. A private company has been formed to make light cars and steam waggons, and Mr. E. E. Bagulay, the present manager of Bagnall's Locomotive Works at Stafford, will be the manager. Among the directors are Mr. A. J. Clay, a director of Messrs. Bass and Co., and Mr. W. W. Worthington. An 8 h.p. four-seated steam car will be introduced by the new company. This development will be regarded with interest. Motor-vehicles are already used by brewing and distilling firms in various parts of England and Ireland, and the establishment of a motor-car works in the centre of the brewing industry should give an impetus to the more general adoption of the automobile by brewers throughout the country.

Imports and Exports.

THAT the Board of Trade should deem the imports and exports of motor-cars, motor-cycles, and parts thereof worthy of separate headings in their monthly returns is another tribute to the growing importance of the automobile movement and industry. The new departure makes its *debut* in the January returns, and it is with much satisfaction that we note that an export trade in British-built automobiles has already been created. The shipment of motor-cars and cycles of home manufacture during the past month attaining twenty-seven vehicles of a value of £7,301. Of parts, the exports amounted to £3,691, making a combined total of over £10,000 in one month. As regards the imports of foreign cars and cycles, these of course show larger figures, and for a year or so, at least, are likely to do so. In all, 173 cars and cycles were imported into this country last month, the value of the same being returned at £35,330. The value of the "parts thereof" is given as £8,525, so that we get a combined total of £43,855. Some of these imports were only of a temporary character, being re-shipped to foreign destinations. Thus last month the re-shipments comprised eleven vehicles amounting in value to £2,268, and £397 of parts. In the monthly returns only the aggregate total of imports is given, and while we hasten to publish this, we may add that *The Motor-Car Journal's* special classified table will make its appearance as soon as the official figures are available.

Watch Local Bills.

MOTORISTS should carefully watch the proceedings of local corporations promoting Parliamentary Bills, for these apparently innocent measures often contain clauses calculated to harass peaceful people like the drivers of motor-cars. An instance of the necessity for this watchfulness comes from Manchester. If the Omnibus Bill of the Manchester City Council, now before Parliament, passes into law, it may be anticipated that the number of motor-car prosecutions will vastly increase. By that Bill it is sought not only to absolutely exclude vehicles,

carts, and slow-going traffic, in which may be included motor-cars for heavy haulage, from certain thoroughfares, but to fix varying maximum speeds in different places. If the Corporation sees fit to press these clauses, there is no doubt strong opposition will be offered from many quarters. But we are glad to be assured by the President of the Manchester Automobile Club that the Corporation, owing to the threatened opposition, is already seriously considering the withdrawal of these clauses entirely from the Bill. Should they, however, be retained, motoring M.P.'s will probably have a word to say when the measure is before the House.

Motor-Cars at Portsmouth.

MOTOR matters are looking cheerful in the Portsmouth district, and the interest shown on the occasion of the last two runs to Southsea has by no means evaporated. As already announced, a Southsea motor-car club is in course of formation, and at the preliminary meeting testimony was paid to the fairness of the borough constabulary and the local bench towards automobilists. Not only is there activity with regard to the social side of motoring, but the commercial aspect of the industry is being recognised in Portsmouth. The statutory meeting of the Portsmouth and Gosport Motors, Limited, has been held at the Masonic Club, Commercial Road, Portsmouth. Mr. J. Taylor presided, and gave an account of the working of the Cambria cars, which, he said, had run practically without any serious detention upwards of 2,600 miles, their two vehicles having carried upwards of 17,000 passengers. The receipts from all sources for the past four weeks amounted to £103. There were three cars on order for early delivery, and it would appear as though success is already within view.



A LOCOMOBILE IN A SNOW STORM.

Lincolnshire Automobile Club.

THE annual general meeting of the Club has been held at the headquarters, the Saracen's Head, Lincoln. The report, showing a great deal of good work done for automobilism, was, with the balance-sheet which revealed a deficit of £2, adopted. Mr. W. D. Wansborough, Col. J. M. Warrenner, and Mr. A. W. Forster were elected members. Sir Hickman B. Bacon, Bart., was re-elected President, and Lord Willoughby de Eresby, M.P., Sir G. Whichcote, and Mr. J. D. Sandars were added to the list of Vice-Presidents, viz.: the Marquis of

Exeter, Hon. S. Ormsby-Gore, M.P., Right Hon. H. Chaplin, M.P., Mr. W. B. Jevons, Capt. J. A. Cole, and Capt. J. F. Laycock, D.S.O. Mr. C. W. Pennell was re-elected Chairman, and thanked for his valuable services during the year. Mr. C. Nelson was elected Hon. Solicitor. Mr. E. Cragg, M.D., was, on the resignation of Mr. Wilkinson, Secretary, and Mr. C. Nelson, the Hon. Sec., elected as Hon. Sec. The Chairman and Hon. Sec. were elected to represent the Club on the A.C. of Great Britain and on the Motor Union. Capt. J. A. Cole was thanked for his hospitality on the occasion of the visit to Roseholme Hall, and he promised to give a lecture on "Electric Ignition" at an early date in Lincoln. It was decided to hold the annual dinner on Saturday, April 5th.

Waterproof Cars.

THE question of how best to protect the occupants of a car from the elements has received little attention from manufacturers, who may perhaps excusably plead that they have been employed in more important work. Coachmakers, too, from whom something might have been expected, have been unable to divorce luxury from weight. Hence it is that most of the best attempts at solution have been due to the ingenuity of private owners. The mere addition of a brougham body to a car produces, as a rule, an intolerable horseless effect, and even worse is the adaptation of a hansom cab top—about as inappropriate a combination as could well be imagined. The solution is not so difficult if passengers alone are to be protected, leaving the driver exposed; but as most owners drive themselves, the real problem is to satisfactorily cover the front seats. The chief desiderata are: first a hood, capable of being half raised (to protect the back of the head in dusty weather, a point much appreciated by ladies), and when raised, to be able to carry an open canopy as well as an entire covering (both being on the lightest possible framework), and a front glass. Here another point comes in: it must be of such a form as not to be easily obscured by snow and rain, and not too far from the driver's face. Mr. Estcourt, as shown last week, secures this by curved side panels, but a correspondent suggests that a V-shaped glazed frame, forming a "prow," would be far less liable to obscuration than a flat front glass, and could be more firmly attached. And if glass could be replaced by some lighter and less fragile substitute it would be all the better. Celluloid would probably be unsafe, but the non-inflammable material used in some substitutes for goggles, possibly an insoluble gelatine, would be just the thing. It would need, however, to be very cheap and easily replaced, as the surface would not be very durable.

Roads.

AUTOMOBILISM is already having an important and salutary effect upon the highways of the country, and as motor-car services are extended county surveyors will have to give increased attention to the roads under their care. Once properly laid, the main thoroughfares will be less worn with motor-car traffic than by horse-drawn vehicles—an assurance that is given with all the authority that is attached to the views of Sir A. R. Binnie. Hence the advisability of County Councils encouraging the perfecting of road surfaces so that no obstacle shall be placed in the way of the automobile.

Wideawake Lancashire.

ALREADY some of the leading councils are considering the matter, and in his report to the Lancashire County Council last week the County Surveyor of that great Northern area remarked that "the number of motor-cars and light motor-wagons requiring some different road surface to the old boulder or worn-out rough set pavement which still obtains on many of the highways is greatly increasing, and as examples I only need to point to the regular running of motor-wagons between Preston, Blackburn, and other large towns to Manchester and Liverpool.

The fact that a contract has been entered into by the postal authorities with the British Electric Traction Company for the conveyance of parcels daily by motor-wagons between Liverpool and Manchester, commencing on March 1st next, shows that this traffic will have to be reckoned with in the near future, and, from a commercial point of view at any rate, it is advisable that every effort should be made at once to place all roads carrying through traffic into good and sufficient repair." Such an attitude will be appreciated by automobilists throughout the country.

Dover's Latest.

A FORTNIGHT ago we referred to the suggestion made by a Dover Town Councillor that a measured mile in the town should have a policeman at each end in order to time unwary and non-suspicious motorists passing that way. At the meeting of the Council, when that proposal was made, no decision was arrived at, but since we last wrote on the subject it has been resolved to station policemen at various points in the town and arm them with stop-watches in order to time the speed of the drivers of automobiles. The Corporation of Dover is also suggesting that the local authorities should advise each other by telephone of automobiles travelling furiously—according to the police idea of "furiously"—in the direction of their respective districts. Surely such a scheme will prove rather cumbersome and uncertain in its operation; why not train the police in the art of lassoing motorists, and so save the trouble of telephoning to other places?

Motor-Car Maintenance.

FROM Bradford, Lowestoft, and elsewhere we have received letters enclosing cuttings from *Pearson's Weekly*, in which the annual cost of a motor-car is set down at £480. Really, Mr. Pearson will have to keep his eye on the young men who contribute to his journals, for such a statement is ridiculous, and calculated to do harm to his paper and to the automobile movement. It would be interesting to obtain detailed information as to the cost of maintenance of motor-cars, and in our Correspondence columns, this week, is a useful letter on the subject. We shall gladly welcome others.

Hints to Horse Drivers.

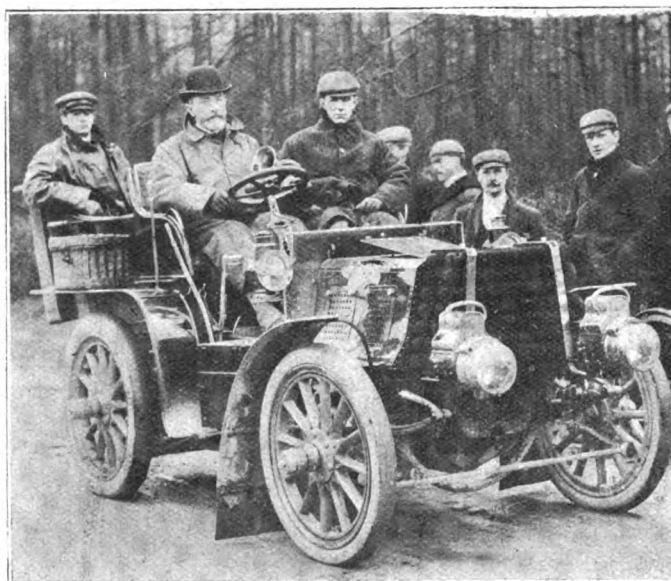
OVER the signature "Compression" motor-car notes are appearing in the *Golden Penny*. They bear evidence of the practical character of their writer, who recently gave some useful advice to the driver of horses. The latter is warned, should he leave his seat, not to go to the near side of the horse, but to get between the horse and the car. The horse will then be less likely to shy. "Compression" says he makes it a rule when motoring to stop—should the driver of an approaching horse be inclined to dismount—until the driver reaches the off side of the horse. The danger of the near side is that the driver may get between the horse and the wall, bank, or ditch at the side of the road and not be able to keep clear of his own wheels. Although he will be left-handed on the off side, he will be quite safe, as horses invariably shy away from the car.

Motors v. Tramways Again.

A FRENCHMAN, who knows the West Riding of Yorkshire pretty well, has been confiding to a newspaper correspondent that millions of English money are being frittered away on light railway and tramway schemes. More than that, the high-ways are being spoiled by a network of rails and wires, which will all be out of date in a decade, when automobiles will be the universal vehicle in the country districts, and tramways only seen in large towns. We hope this observant Frenchman is as accurate as he is sanguine.

Authors, Artists, and Autos.

It can hardly be said that the motor-car has taken its rightful place in fiction as yet—if we leave police-court records out of the question. It has appeared casually in a recent novel or two, and has, of course, inspired much of what passes in these days for humour in the comic papers. In the attempts at motor fiction, however, which have occasionally graced the magazines no inconvenient realism has hindered either author or illustrator for the most part. The latest addition to these, appearing in the *Windsor Magazine*, turns on the running of a new and phenomenal electrical car, and the artist has, with a touching if mistaken fidelity, shown the hero and heroine on as good a copy of a Panhard as could be produced in this country, starting handle and all! One possibly useful hint lies buried in the tale—at least for these pre-numbering days—namely, the provision of reversible panels of varied colours for the car body, to be used after passing a police ambush, to avoid inconvenient identification by telegram. It is hardly to be expected that our pastime will attract the attentions of artists, except for such illustrations; but its exponent in fiction will surely arise before long. As yet, however, while automobilism has not lacked its historians and prophets, both major and minor, its novelist—the Surtees of the sport—has yet to appear among us.



MR. E. MIDGLEY ON HIS 16 H.P. NAPIER.

The Transition Stage.

IN the *Contemporary Review* for February Mr. Joseph Pennell has an article on "Motors and Cycles: the Transition Stage," in which he complains that "it is almost hopeless for the person of average means to get a fast and reliable car, because the very few makers who can make such cars will not do so. The hoped-for millionaire rather than the certain purchaser of moderate means is catered for." This is becoming less and less accurate, for makers are recognising that the future of the motor-car industry in this country depends not upon the few buyers of racing cars, but upon the many likely purchasers of cars for business and for touring purposes. With regard to motor-bicycles, for which Mr. Pennell has a penchant, he sadly confesses that he does not know where to find one that will carry him as reliably as an ordinary bicycle, although there are plenty good enough for a day's run. In a foot-note to the article—which is worth reading by those who did not hear the author's paper at the Automobile Club some time ago—we are told that Mr. Pennell has tried the Holden, Phoenix, and Shaw motor-bicycles since he wrote the article, and that he regards the latter type as the most comfortable machine he has ever ridden.

Motor Bicycles at the Society of Arts.

ON Tuesday evening last, at the Society of Arts, Adelphi, W.C., the first meeting of the motor-cycle section of the Metropolitan District Association of the G.T.C. was held under the chairmanship of Mr. W. Rees Jeffreys, the evening being devoted to a discussion on matters connected with motor-bicycles. The debate was opened by Mr. Joseph Pennell, who, in his peculiar style, related his experiences with the Werner, Phoenix, and Shaw motor-bicycles. Afterwards there was a lengthy discussion, in which, in addition to several amateurs, quite a number of members of the trade took part. It was the general feeling that the ordinary safety bicycle was not sufficiently strong to be converted into a motor-bicycle by the addition of a motor and its accessories. In this connection, Mr. Albone pointed out that only quite recently a converted bicycle of this kind came under his notice in which the front forks were on the point of giving way. As regards the location of the motor opinions varied considerably, some speakers advocating a high position and others a low position for the motor. The questions of ignition, lubrication, carburation, transmission of power, tires, etc., were all gone into, a variety of opinions being expressed. It was generally considered that unless some means could be devised of keeping up the speed of motors when the machines were ascending hills a motor of greater h.p. than $1\frac{1}{2}$ is really necessary. On the question of side-slip, the discussion brought out as great a divergence of opinion as the other points raised. Finally, the meeting passed to the lines upon which the new motor-cycle section of the Metropolitan District Association should be carried on, and it was left in the hands of the committee to devise a policy. In connection with the meeting an exhibition of motor-bicycles had been got together on the lower floor at the Society of Arts, among the machines shown being the Singer, Holden, Derby, Bradbury, Enfield, Excelsior, Humber, Albone, Phoenix, Shaw, Werner (1901), Bowden, Martini, and Trent.

More Persecution in Surrey.

THE animus of the Surrey County Council against motorists is being evidenced regardless of expense. Mr. Trevor Williams has just been summoned at Chertsey on two counts under the Locomotives Act of 1865. With the help of two expert witnesses and Mr. Staplee Firth he secured the dismissal of both cases, although his costs were disallowed. This is the fourth case of the kind which the Surrey Council County has brought against motorists, and, although each has been dismissed, the police do not seem satisfied. In one case they took out three summonses, and in two others two each—all with the same result. Surely the ratepayers of Surrey will shortly begin to recognise that this wasteful expenditure of their money should cease. It does not secure its object; it prevents motorists touring in Surrey, and it generally indicates such a wanton disregard of the public interest that should not be forgotten at the next council elections. A combination of motorists, hotel proprietors, and kindred spirits that effectively used its influence at the proper season might secure the return of councillors who would keep the police in their place.

Reminiscences.

ONE of the most delightful evenings enjoyed by the members of the Automobile Club was that on Wednesday last, when the Right Hon. Sir J. H. A. Macdonald, K.C.B., Lord Chief Justice Clerk of Scotland, read the chapter on "Automobile Reminiscences" he has written for the Badminton book. Sir Francis Jeune presided, and gave an enthusiastic address on the "Pleasures of Motoring" in introducing Sir John to the meeting. The Lord Chief Justice Clerk of Scotland delighted the company for more than an hour as he told stories of early motor-car adventures in a most humorous way. The Hon. C. S. Rolls, Messrs. R. H. Fuller and Thynne took part in the discussion, and votes of thanks to the chairman

and reader of the paper were carried by acclamation on the motion of Mr. Roger W. Wallace, seconded by Mr. Harrington Moore. Sir John Macdonald was heartily received on rising to respond, the members of the Club joining in singing "For he's a jolly good fellow" with a heartiness that left no doubt of the sincerity of the regard in which the Lord Chief Justice Clerk of Scotland is held by English, or rather, British automobilists. Next week the house dinner of the Club will be followed by a paper on "Motor-cycles" by the editor of the *Journal*.

MR. BERNARD ROTHERHAM, of the New Coventry Eagle Cycle Company, Lincoln Works, Coventry, has for some time been experimenting with a trailer specially adapted for motor-bicycles and tricycles. To the inexperienced the negotiating of corners appears a little unsafe, but after a few trial runs this apparent danger vanishes entirely from one's mind, as the trailer follows the machine with marked steadiness and precision, owing to the special joint and clip employed.

AN announcement on the placards of the London evening journals, on Tuesday, to the effect that Niagara had been sold, sent the thoughts of many people to the great Niagara Falls. But it actually referred to the purchase of Niagara in London by Mr. Paris Singer, of the City and Suburban Electric Vehicle Company. The great hall, with its various offices, will be utilised as a garage and for the cleaning and charging of electric vehicles, as well as a sales department of the company, in addition to their existing large establishment in Denman Street, Piccadilly, W.

AT the last quarterly 100-mile trial of the Automobile Club two vehicles were presented, a 5 h.p. voiturette by the Hozier Engineering Company, Limited, and a 8 h.p. Dennis car by Messrs. Dennis Bros. The Argyll made the outward journey at a speed up to the legal limit, and the return trip at an average of 8.7 miles per hour, 4 gallons 3 quarts of petrol and 1 pint of water being used. The steep portion of Dashwood Hill was ascended, with four persons on board, at 5.7 miles per hour. On the return journey three stops were made—(1) After forty-third milestone, owing to two punctures on rear tires. (2) Of about $\frac{1}{4}$ minute's duration, due solely to the road being blocked by a wagon and team; and (3) To attend to one of the brakes. The Dennis car did not proceed beyond Dashwood Hill owing to tire troubles.

THE second general meeting of the Aeronautical Institute and Club was held on Saturday last at the Society of Arts, Adelphi, W.C., the chair being taken by Mr. C. H. M. A. Alderson. The provisional rules were read and adopted with certain amendments made chiefly in the interests of members desirous of obtaining the Institute's assistance in the perfection of their designs. Mr. P. L. Senecal and Mr. H. Middleton were elected vice-presidents. At the conclusion of the meeting the chairman made a few remarks dealing with the scope of the Society.

No small amount of interest attaches to litigation which has just been started in America. Suit has been brought by the Whitney Motor-Waggon Company, of Boston, against Messrs. F. E. and F. O. Stanley, of Newton, Mass., in which the former seeks to enjoin the Stanleys from making their present steam carriage, and also seeks an accounting for damages. To the Stanleys is usually accorded the honour of being the pioneers in the light steam automobile industry, their vehicle being the forerunner of the present well-known "Locomobile." Lately the Messrs. Stanley have turned their attention anew to steam vehicles. In so doing they have incurred the hostility of the Whitney Company, who also dispute the claim of the Stanleys to being the first in the steam field. In the litigation now inaugurated the contention is that the Stanley vehicle is an infringement of the original Whitney vehicle, which was first manufactured in September, 1896; that it possesses the same number of tubes to the boiler, has virtually the same boiler, and is in fact practically a duplicate of the Whitney vehicle. The application for an injunction is returnable to the United States Circuit Court in Boston early in March.

A RICHMOND MEET.

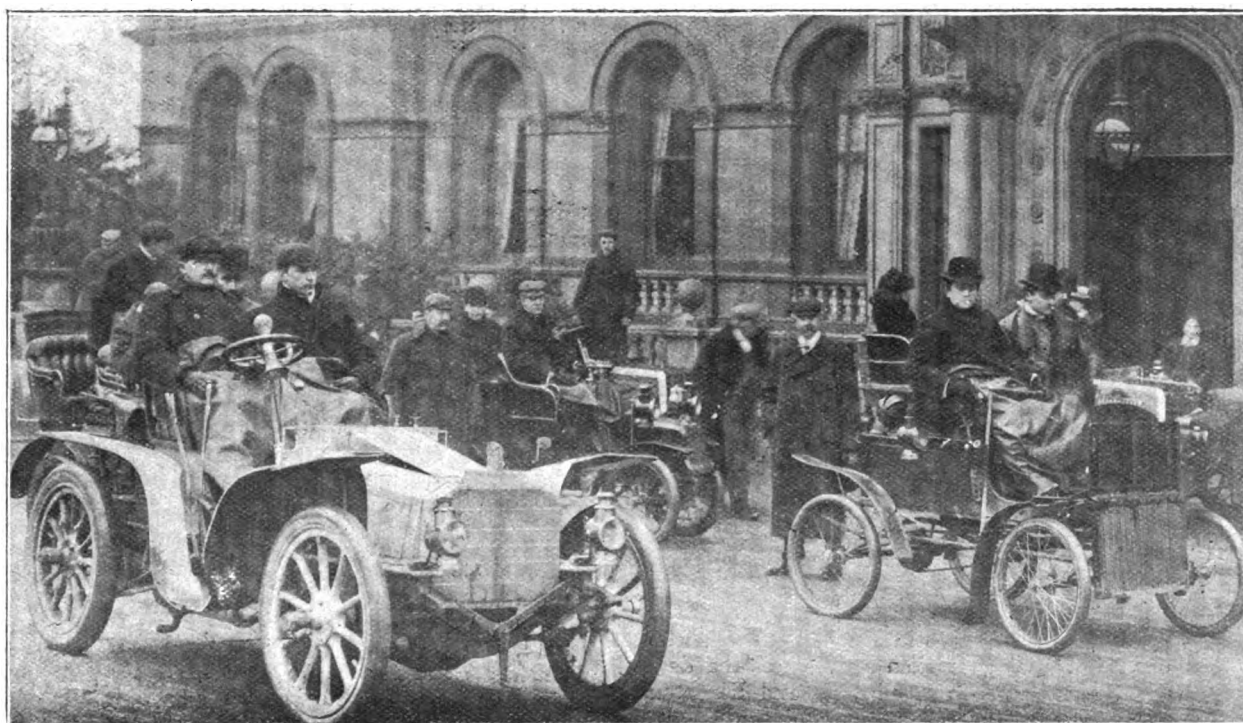
TESTING AUTOMOBILES ON THE HILLS.

BYRON'S "ambrosial Richmond" is a charming place in the springtime and when autumn's bright tints have given it a kaleidoscopic effect. But in the days between winter and spring its enchantment is less keen, and its beauty lies below the surface. Should the day be wet and the air have a biting keenness reminiscent of chill October, the prospect is even less delightful; and if to these two irritants you add a puncture, the unhappiness of man is nearly complete. We refer to the average man. The motorist, however, is more than the average man, and braves the elements, daring rough stones with seeming indifference, although there may be a touch of bravado in his public demonstrations of how automobiles go boldly over metalled roads.

When Mr. C. Johnson suggested that a few pleasant and useful hours could be spent on the hills of Richmond on Saturday last, several motorists rejoiced, for did not such an occasion give

but the roads less greasy than the Putney road. Nearing the destination, Mr. S. F. Edge came along on his 16-h.p. Napier car. The horses in a passing 'bus evinced some astonishment, and made as though to converse with us, but our driver skilfully eluded the fractious creatures, and we left them to gyrate in equine fashion, to the alarm of a nervous old lady who had incautiously taken a seat near the driver on the top of the 'bus. "Oh! the wretched motor," she exclaimed, failing to recognise that the attitude of the horses was more threatening than our own. By that time the 16-h.p. Napier had turned the corner, and we followed along to the "Star and Garter," where the photographer looked disconsolate, and Mr. Johnson, notebook in hand, presented a picture of cheerful indifference to the atmospheric conditions that would have depressed anybody but motorists, whose defiance of hail, wind, and snow is even more pronounced than their virtuous and commendable efforts to keep within their legal rights on the public highway.

The first ascent of the day was up Petersham Hill, the distance from the Dysart Arms to the Star and Garter Hotel, Rich-



SOME OF THE CARS AT THE STAR AND GARTER HOTEL, RICHMOND.

Photo by]

[Arg'n Archer.

another opportunity for petrol talk and reminiscences? Besides, there was the opportunity of doing doughty deeds by taking loaded vehicles up ascents that few cars could have conquered three or four years ago. And no motorist declines the chance of proving the reliability of the modern automobile, and his power of control over the wheel. Thus it was that Mr. Johnson's suggestion proved a popular one, for although the Weather Controller proved refractory, the meet suffered no reverse in consequence. Quite a score of cars presented themselves at noon before the "Star and Garter," and in the roomy stables of that famous hotel they sheltered awhile till the time-keepers were prepared to play the part of recording angels. There was no procession from town, all going as they pleased to the rendezvous. Mr. C. Cordingley's 10-h.p. Napier left the Club shortly after eleven o'clock, with Lord Kingsburgh, Mr. Cordingley, and the writer aboard, these, with the driver, making up a full load. With the rain pelting in our faces we passed through Clubland, and, taking a glance at the proposed new headquarters of the Automobile Club, went along at a steady rate that was evidently well within the legal limit, or the police would have called our attention to the fact. Over Hammersmith Bridge the way was long,

mond, being 600 yards. The average gradient of the hill is 1 in 15.1, that at its steepest part being 1 in 9.5. Several of the vehicles made two ascents, and the trial was a good test of the capacity of the cars, for the condition of the road was about as bad as it could be, the mud lying thick upon the surface. The fastest time was made by Mr. H. G. Burford on his 20-h.p. Milnes car, which travelled the distance in 1 minute 10 seconds on the first attempt, and in 1 minute 6 seconds on the second effort. Mr. S. F. Edge's 16-h.p. Napier finished the journey in 1 minute 13 seconds. A Locomobile made the ascent in 1 minute 14 seconds, its course being well defined by a clearly expressed protest against the cold damp day. Mr. W. D. Astell did well on his 12-h.p. New Orleans. All the cars carried their full complement of passengers, and the mileage per hour worked out as follows:—

	First Ascent.	Second Ascent.
	m.p.h.	m.p.h.
Mr. Harvey Du Cros, jun's. 16-h.p. Panhard	14.7	—
Mr. S. F. Edge's 16-h.p. Napier	16.8	—
Mr. C. Jarrott's 16-h.p. Panhard	14.4	15.5
Mr. H. G. Burford's 20-h.p. Milnes ..	17.5	18.5

Car.	First Ascent. m.p.h.	Second Ascent. m.p.h.
Mr. E. M. G. Instone's 12-h.p. M. M. Co. ..	3.7	7.7
Mr. Charles Cordingley's 10-h.p. Napier ..	8.7	8.6
Mr. Rowland Browne's 10-h.p. Lanchester.	9.2	—
Mr. W. D. Astell's 12-h.p. New Orleans ..	15.7	14.4
Capt. E. A. Locock's 10-h.p. Wolseley ..	10.8	10.6
Mr. P. Dodson's 7-h.p. Durkopp ..	—	—



MR. ASTELL'S "NEW ORLEANS" ASCENDING THE TEST HILL,
RICHMOND PARK.

Mr. J. W. Stocks's 8-h.p. De Dion ..	9.8	9.7
Mr. J. M. Gorham's 4½-h.p. De Dion ..	6.5	9.0
7 h.p. New Orleans ..	5.5	7.8
Mr. Roger H. Fuller's 4½-h.p. De Dion ..	8.8	—
4½-h.p. Locomobile ..	14.4	6.5

From Petersham Hill to the luncheon room was a pleasant transition. Among the common requirements of Men and Motors lubrication is pre-eminent, and that having been attended to, we set off through the principal entrance of the Park to the scene of the next trial, viz., the Test Hill. Our car had a fourth passenger (making five of us in all) in Mr. W. J. Peall, who had come as an observer, having forsaken his car for the day. The Test Hill lies between the Robin Hood Gate and Kingston Gate. It includes a bend, so that a full view of the ascents was possible, and that the top of the hill proved a coign of vantage was demonstrated by the interested little group that watched the cars come gaily upon their way. In fact, the view was so attractive that many passengers left their cars, and only those of Messrs. Astell, Burford, Cordingley, and Edge carried their full number. Here again the Milnes car did well, going up the hill in 31 seconds with one passenger on the second attempt, and in 39 seconds on the first attempt, when it carried four passengers. The 16-h.p. Napier made one journey, doing it in 38 seconds, and the Locomobile made two good trips. On both occasions the 12-h.p. New Orleans made the ascent in 40 seconds, being the only car to make the two efforts in similar time. Curiously enough, its rate of speed (14.4 miles per hour) was the same as in the second Petersham Hill climb.

This second test was a very severe one, the road being extremely loose and heavy. The distance covered was 850 yards, the average gradient being 1 in 11.3, and the steepest 1 in 7.8. As at Petersham Hill, Messrs. F. T. Bidlake and H. J. Swindley acted as hon. timekeepers. Below are the miles per hour made by the cars.

Car.	First Ascent. m.p.h.	Second Ascent. m.p.h.
Mr. Harvey Du Cros, jun., 16-h.p. Panhard ..	13.1	—
Mr. S. F. Edge's 16-h.p. Napier ..	15.2	—

Car.	First Ascent. m.p.h.	Second Ascent. m.p.h.
Mr. C. Jarrott's 16-h.p. Panhard ..	14.4	13.7
Mr. H. G. Burford's 20-h.p. Milnes ..	14.8	18.6
Mr. E. M. C. Instone's 12-h.p. M.M. Co. ..	—	7.5
Mr. C. Cordingley's 10-h.p. Napier ..	7.1	—
Mr. W. D. Astell's 12-h.p. New Orleans ..	14.4	14.4
Capt. E. A. Locock's 10-h.p. Wolseley ..	10.1	10.9
Mr. J. Ernest Hutton's 5-h.p. Panhard ..	—	7.8
Mr. F. Dodson's 7-h.p. Durkopp ..	8.2	—
Mr. J. W. Stocks, 8-h.p. De Dion ..	8.3	8.9
Mr. J. M. Gorham's 4½-h.p. De Dion ..	8.9	7.8
7-h.p. New Orleans ..	8.5	—
4½-h.p. Locomobile ..	13.7	13.4

Just before the dispersal took place, one of the park-keepers came along and suggested that the trial was somewhat of a liberty. Probably he thought to see the road cut up, as would have been the case had any other form of locomotion been employed. But motor-cars roll the road, and do not disturb its surface, hence the trials had really been of advantage rather than detriment. In a few minutes the cars began to return to town in the same go-as-you-please style as they had arrived. Scuttling along there were few incidents as we crossed the park, and even the deer looked nonchalant, while the only person who held up his hands was a belated motorist who had had trouble after lunch, and only arrived to see us leave. But our happiness was of short duration, for, descending the hill leading to the town of Richmond, something hissed. It was an ominous sound, and sadly did we dismount half-way down the hill to investigate the cause. There was no doubt as to the trouble, and while a new inner tube was being put in, horsemen passed with glad smiles—pictures of cheery temper we could not display. After the usual delay we set forth again. Mr. Peall remarked that very often a puncture was closely followed by a second similar mishap. We had demonstration of the truth of his remark when nearing Mortlake. For we had another puncture; and another delay. The delay was this time occasioned in the wait for a train to town. And thus ended our experience of last Saturday's informal hill climbing trials at Richmond.

MESSRS. BENNETT AND CARLISLE, LIMITED, Deansgate, Manchester, have issued a new list for the season, in which they announce that they will open a new department in Renshaw Street, Liverpool, early in March. The firm have the exclusive Manchester and Liverpool agencies for the Argyll and Progress light cars, together with that of the Locomobile for Manchester. Messrs. Bennett and Carlisle undertake repairs and keep a large stock of accessories.

THE Brecht Automobile Company, 1207, Cass Avenue, St. Louis, U.S.A., have issued a neat catalogue of their automobiles, gears and parts. They stock several standard styles of gearing. In one that is illustrated the front axle has swivels pivoted as near as possible over the point of tread. These are attached to the steering device direct, thus ensuring a positive guide for the vehicle at all times. A special point in connection with the hind or driving axle is that it is made in one solid piece of steel.

MR. A. HEARD, of the Century Engineering and Motor Company, Limited, informs us that, having experimented with several varieties of radiators, particularly in connection with their Century tandems, they are now using the Begbie-Audin for cooling Aster engines from 4 to 12 h.p., and that although Mr. S. D. Begbie recommended them to allow twenty inches per h.p., they found that they can obtain satisfactory results with even less. The Century Company are just now engaged in testing a new four-seated car fitted with 9 h.p. Aster engine, and they find that with a Begbie-Audin radiator of 12 feet the cooling is all that they can wish. They have sent us a section of the radiator in question, an inspection of which shows that only pure copper is used for the piping—oval in section—and that the gills are neatly and securely fitted.

Mechanical Flight Up-to-Date.

[All rights reserved.]

By SIDNEY H. HOLLANDS.



CHAPTER IV.—GRAVITY AND PASSIVE FLIGHT.

SINCE first perusing the very interesting remarks of Mr. Lancaster, of Chicago, in his communications to the British Aeronautical Society—now a good many years ago—on the evolutions and habits of the large soaring and sailing birds, it has become clear to the present writer that the flight of these great birds—the largest that command the atmosphere—is an operation quite distinct and different from that of small birds and insects. With the latter two classes it is undoubtedly a matter of almost incessant exertion of power during flight—with

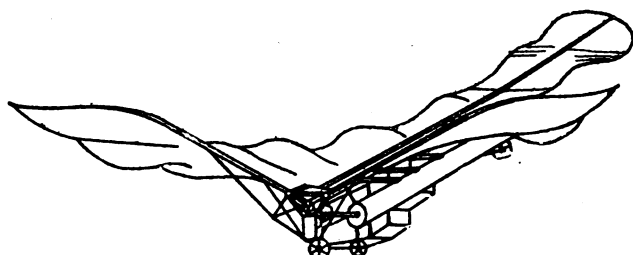


Fig. 1.—Aviator of "Wave-action" type (Brearey's), with original motor (designed by the writer), together with twin compressed air reservoirs and "Pectoral Cords."

insects absolutely so; but with the former remarkable class, on the contrary, there may be, and frequently is, a long-protracted intermission of power-output from the bird, with continuance of flight and sustentation, which for the time become passive.

Several keen and credible observers of Nature, including the late Charles Darwin, testify to having seen these birds perform their graceful evolutions in the air: rising in a spiral path, soaring, swooping, wheeling about, and sailing straight away, for half an hour and upwards at a time, on extended stationary wings, and without a single flap.

The foregoing facts shadow forth the astounding possibilities in store for artificial passive or sailing flight. Among birds, the efficient flyers have long, narrow, and pointed wings; these features in the "swift" are very remarkably displayed. Con-

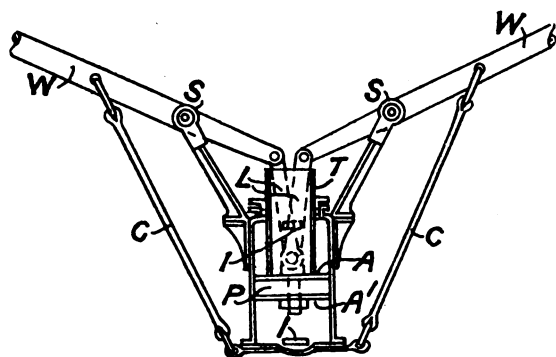
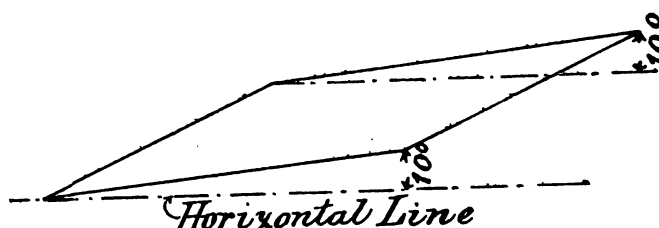


Fig. 2.—Type of Motor adapted for Wing and "Wave-action" aviators (the writer's original design).

P. Piston. L.L. Connecting Links.
T. Trunk. S.S. Pivot-standards.
I.I. Pressure Inlets. W.W. Wing, or Wave-arms.
C.C. "Pectoral Cords" (elastic).

sistently with this formation, the extraordinary velocity of this bird in flight, when carefully noted and timed by at least two naturalists working independently, was found by one to be 270 miles per hour, and by the other 273 miles per hour.

Still another writer on bird-flight alludes to the purple swift as doing its five miles per minute. This writer, however, has indulged in a slight touch of "brilliant exaggeration." The arrow-like flight of this bird is achieved with only an occasional sharp wing-flap. The conjoint action of gravity and wind-pressure in its bearing on flight—both natural and artificial—is well worthy deep and careful thought; it probably contains a startling revelation. Mr. R. O. Davidson, an American, in his book, "A New Theory of Flight," published in 1858, says: "I find, after twenty years' contemplation of this theme, natural flight to be dependent upon gravitation, muscular power, accelera-



Typical Inclined Aeroplane, at a positive angle.

tion, and force of winds," and holds the first-named of these factors to be the all-important one.

At one time the present writer sought, in his experimental flying models, to counteract gravitation (notably by means of vertically (acting ascensional screws) and wind pressure, considering them as adverse forces only; whereas with certain types of aviator they are positively as valuable auxiliaries as they are to birds' flight. By virtue of these, a bird's own weight is an indispensable source of power to it; and we are warranted in saying that if a sailing bird's weight were materially reduced, without reducing its bulk, and its muscular power remained constant, it could not fly at all.

The poet Cowper truly wrote—

The bird that flutters least
Is longest on the wing.

Did our respected poet know why this was thus? As King Solomon, in all his glory and wisdom, confessed that he knew not "the way of an eagle in the air," we trow it could not be expected in a mere poet. We now know that "the bird that flutters



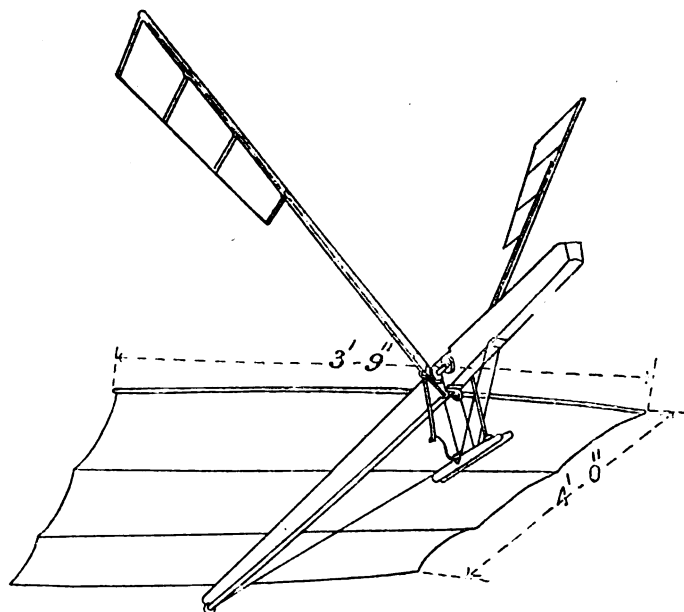
Section of "Aspirating" Aero-curve of very efficient form, set at zero.

This Aero-curve at zero is far more efficient than an Aeroplane at a positive angle.

least" utilizes the natural air-currents and his own gravity, inertia (transversely), and momentum (longitudinally), thus obviating the necessity for much laborious fluttering. Finding early in life that Nature was prepared to do nearly all his hard work for him, the bird probably thought it a very neat and satisfactory arrangement; and so, having very little to fatigue him, he can remain longest in the air. These favoured members—the giants of ornithology—comprise the condor, the albatross, the frigate bird, the pelican, the gull, etc.; although all birds use the extraneous natural forces in a lesser degree.

Now it is by so designing an aerial machine as to make use of these forces as auxiliaries that a comparatively evanescent source of power, such as stored compressed air, can be used effectively. (See Fig. 1.) Compressed air could only be used with any degree of practical success for flight by stages, or for short cruises, and where the apparatus is of such design, and the comparatively small motor power provided is so supplemented by the auxiliary forces that the motor need not work continuously, but could have comparatively long spells of inaction, or of greatly reduced exertion of power, while the aforesaid auxiliaries were putting in their joint work and producing passive flight, as in the case of the birds mentioned. The weight of compressed air and reservoir may be taken as 300 lbs. per horse-power hour.

The chief medium through which this great gain is achieved is the elastic pectoral muscles in birds. The late veteran authority and experimenter, F. W. Brearey, B.Sc., introduced and applied successfully to his flapping "wave-action" models an efficient artificial equivalent for this, and called it the "pectoral cord," which provided about 50 per cent. of the power from gravity. (See Fig. 2.) This appliance, attached to the underside of the wings or "wave-arms," and to a central fixed point or strut (corresponding to the "keel" bone of birds) below the car or the main frame, really forms a reservoir of power, "charged," so to speak—i.e., kept in tension—by the weight of the machine, thus enabling its own gravity, with the air as a medium, to sustain it against gravitation, and to assist propulsion as a consequence, paradoxical as it may seem at first. The amount of power gained from this is the product of the total weight of the machine, and the *virtual* amount of fall in feet per minute. The writer will endeavour to make clear what he means by "virtual" fall. As soon as inclined wings, aeroplanes or aerocurves, have horizontal motion imparted to them, or, which is the same thing,



EXPERIMENTS BY MR. L. HARGRAVE, MAY, 1890.

Winged Aeroplane Machine, driven by rubber cord in tension.

Weight of Model 33½ ozs.
Power 470 ft. lbs.
Surface 14.77 sq. ft.

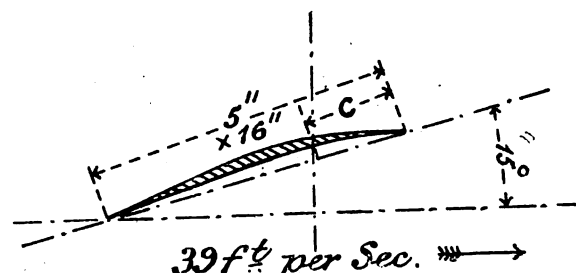
Stated to have flown 270 feet.

Centre of effort was 14.6 in. ahead of C. of Gravity.

receive the impact of a wind or horizontal air-current while held stationary, they are practically or "virtually" falling *relatively to the surrounding atmosphere*, although, relatively to the earth, they (together with the machine or the bird) may be rising. It is thus that the conversion of horizontal into nearly vertical motion of the air is effected by wedge-action on the inclined surfaces, the conjoint action of gravity, inertia, and acceleration holding the machine or the bird down to its work, as a kite is so

held by its string, which string is there the equivalent of gravity and inertia.

The writer hopes and believes that this explanation and simile will sufficiently illustrate how gravity can act continuously in aiding flight, without causing the body to approach the earth, and why gravity is indispensable to flight. The late Dr. Lilienthal had a high degree of success, for over two years of experimenting before he met with his sad fate, with his apparatus for passive



SECTION OF AEROCURVE.

(Horatio Phillips's.)

C. Centre of Effort, being $\frac{1}{3}$ of breadth from leading edge.
Weight lifted at the above speed (including weight of wing), 12 ozs.,
with a horizontal resistance of .87 oz (27 miles per hour).

Maximum Efficiency was obtained at 15° with this form of Aerocurve.

or sailing man-flight; and the results of his trials have afforded us some further useful data for the designing of aerial machines generally. Dr. Lilienthal gave the *adequate* sailing-wing surface as 0.49 to 0.61 square foot per pound, and the best depth of flexure or concavity on the underside of such surfaces as one-twelfth of the width; the curve to be parabolic in cross section of wings, with the greatest curvature on the leading side. These conditions agree generally with the natural wings, as well as with the results of some previous experimenters.

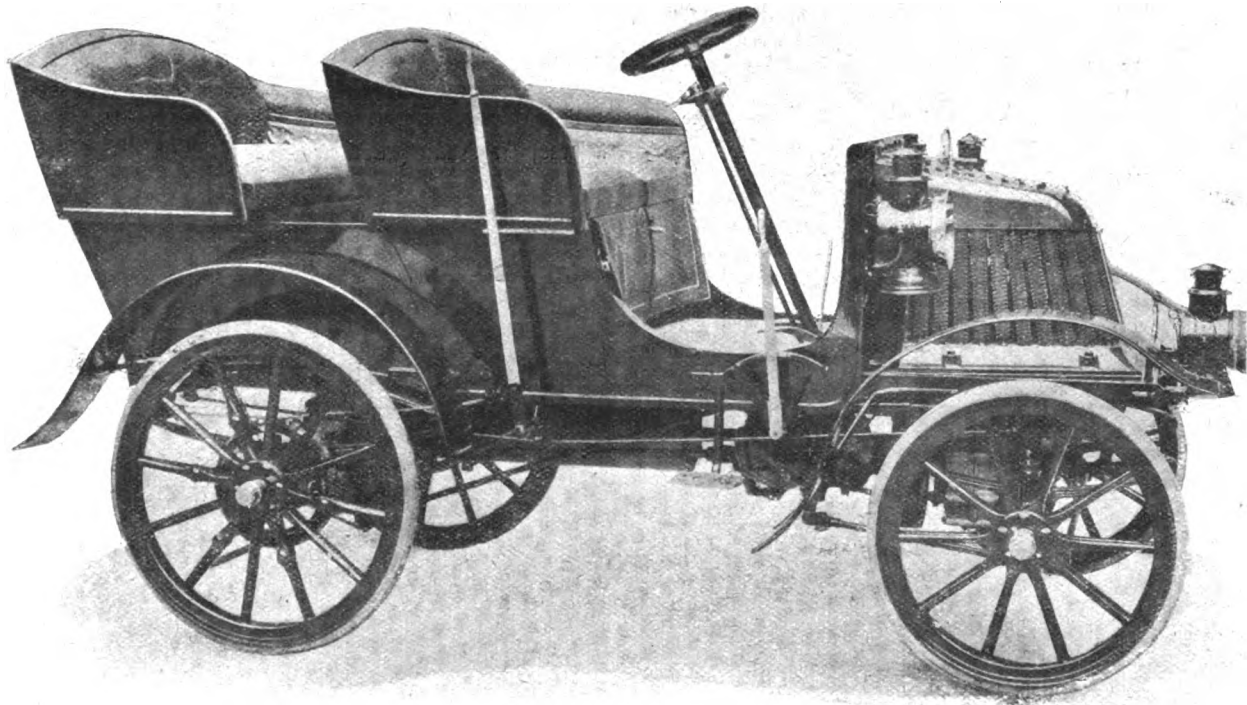
The maximum velocity of natural wind in which the apparatus was found to be manageable was about 16 miles an hour, which, being supplemented by the operator running forward against the wind at 7 miles an hour, gave 23 miles an hour as the greatest relative velocity found to be practicable; but the maintenance of anything like stable equilibrium was then very difficult. The wings had a spread of 23 feet, and a width of 8.2 feet, the area being 151 square feet, and the total weight of apparatus was 25 lbs. Dr. Lilienthal made some further experiments in the application of a steam motor to one of his machines. This motor was of 2 i.h.p. (for a duration of half an hour), and weighed 44 lbs.

It is rather amusing to advert to the results and conclusions arrived at by the ultra-mathematical gentry on the subject of flight, natural as well as artificial. A distinguished French mathematician gave a formula showing that the power necessary must increase so rapidly with speed of flight that for a swallow to attain the speed it does it must have the muscular power of a man. Another distinguished mathematician—an Italian this time—"proved" that a goose in order to fly must develop 300 h.p., and defied the goose to do it on anything less. It must be conceded that this man was the more "distinguished" of the two. His exploit will doubtless "live" in aeronautical circles. The very first thing that the intending experimenter in flight has to do is to discard all rules that lead to such extravagant results.

(To be continued.)

MR. G. CALVERT, of 12, Woodville Road, Mildmay Road, London, N., has sent us a sample of a special grooved pulley he is now making, for use on belt-driven motor-bicycles, and for the driving of water-circulating pumps of motor-cars. A feature of the pulley, which is made in sizes from three inches upwards, is the formation of projections at regular intervals on the inner faces, the projections on one side being so set that they do not come opposite those on the other. It is claimed for the new pulley that it considerably reduces the chance of the belt slipping, the latter being tightly gripped without being pinched into the groove when leaving the pulley.

The Argyll Light Car.



GENERAL VIEW OF 8 H.P. DOUBLE PHAETON.

WE are this week able to publish an illustration and description of the new 8 h.p. light car which the Hozier Engineering Co., Ltd., are introducing for the 1902 season, and to which reference was made in a recent issue. Two types of engines are being fitted, either of which may be had to order—namely, the Simms, fitted with Simms-Bosch ignition, or the latest De Dion pattern made by the Motor Manufacturing Co., Ltd., the dimensions of the cylinder being 100 mm. bore and 130 mm. stroke, both types giving over 8-brake horse power at 1,500 revolutions per minute. The M.M.C. engine is now fitted with trembler on the induction coil and positive contact on the motor, so that the trouble of oil finding its way from the crank case to the contact water is obviated. The motor is surrounded by a double row of vertical water-cooling tubes, which are joined at both the top and bottom to aluminium water tanks. When the water becomes heated in the engine it rises into the top tank, and, of course, the cold water from the bottom follows it into the cylinder; thus the hot water must pass through the cooling tubes and become cooled on its way back into the engine jacket again. This arrangement of cooling pipe and aluminium tanks is neatly designed, and forms a very attractive and distinctive bonnet. It contains in all 40 feet of cooling tubes, and as they are right in the front of the car, they are in an effective position for cooling purposes. This system is found to work perfectly satisfactorily and greatly simplifies the mechanism of the car, no pump being needed. The makers state that after a run of 200 miles they have only found it necessary to add about two pints of water to the tank.

In designing the new 8 h.p. car the Hozier Company have retained all the good features which distinguished the 6 h.p. Argyll voiturette. Among these may be mentioned the transmission gearing, which secures a direct drive from the motor to the rear axle on the top speed. The power is transmitted from the engine to the gear-box by means of a friction clutch, which is claimed to be entirely free from end thrust when the car is running. The internal part of the clutch is mounted on the engine shaft, which renders it impossible to get out of line with the external part. The clutch is of large diameter, and a sliding universal joint is

introduced between it and the gear-box to prevent any strains arising, should the engine get slightly out of line with the gear when going over very rough roads. The change speed gear is contained in an aluminium box. The change of speed is obtained by using strong square-jaw hardened steel clutches, while in the case of the first and second speeds the reduction of the gearing is obtained by using two pairs of gear wheels. This has the effect of distributing the strain, and, while increasing the life of the gear, it also considerably reduces the noise. The reverse motion is obtained by introducing an intermediate pinion—which is mounted on an eccentric shaft—between the slow-speed pinions when they are out of gear. All the speeds are actuated by one lever, and a cam is used which renders it impossible for any one gear to get into mesh before the other is released. A universally-jointed shaft transmits the power from the gear-box to the back live axle, which is rigidly supported on four sets of roller bearings, while the end thrust from the bevel drive is taken by a ball-bearing on either side of the differential case.

Efficient brake power is provided. Large diameter drums are fixed to the driving wheels, around which are placed wood blocks mounted on wire ropes actuated by a side lever. There is a large drum on the central driving-shaft which is fitted with a double-acting brake attachment actuated by a pedal, the depression of which also releases the friction clutch. Both sets of brake work will stop the car when running in either a forward or backward direction. The frame of the vehicle is tubular, the rods running along the whole length to make it perfectly rigid. The road wheels are of the artillery type, and may be fitted either with solid rubber or pneumatic tires. The steering gear is on the irreversible principle, and is actuated by a screw and nut. The illustration shows a double phaeton, a type for which there is a growing demand. The still popular *tonneau* can, however, be fitted, the frame being adapted to take any style of carriage body.

It is reported that more stop-watches are being supplied to the Huntingdonshire police for the purpose of gauging the pace of motorists.

CONTINENTAL NOTES.

By "AUTOMAN."

"A POSSIBLE ENTRANT" for the Gordon-Bennett Cup calls in question my statement in the *Journal* of the 1st inst. with regard to the probability of "Fournier running a Mors car with Continental tires" in this international event, and brings up as witness against me my own writing of January 11th. "Automan" was wide awake, and "A Possible Entrant" can rely on what the French call "*le tuyau*." For his private information the explanation is *bien simple*. The Hanoverian firm are striving to make arrangements to manufacture their tires in France specially for this contest. One word more. I heartily wish "A Possible Entrant" more success in the Cup race than in his criticism of my news.

TALKING of tires, changes that may affect Great Britain are in the air. I was one of a party of automobilists at dinner at the Café Riche à Paris a few days ago, and learned that the last day of February may possibly be the last day on which Michelin tires will be licensed for England. This is quite possible, though as yet I believe a final decision has not been arrived at by the monopolists.

THE first important automobile event of the year took place on Wednesday last week in the neighbourhood of Paris, and under the organisation of the *Auto-Velo*. It consisted in a trial of the amount of carburant consumed on a journey of 100 kilometres (62½ miles) from Suresnes to Corbeil and back. Petrol, or alcohol and petrol, were used. There were altogether 74 starters, and out of this number 9 used a mixture of half alcohol and half petrol, and the remaining 65 used petrol. A speed not exceeding 30 kilometres per hour was the order of the day. The weather was dismal in the extreme, foggy, cloudy, and generally damp. The only redeeming feature from this point of view was that it neither snowed nor rained. It was, however, bitterly cold, and the roads were covered with mud, slush, and thawing snow.

THERE were altogether seven classes, and the winners were as follows:—1st class, bicycles without pedals and not more than 50 kilos. (110 lbs.) weight—Clement, 0.860 litre; 2nd class, motor-cycles without pedals, and not more than 25 kilos. (56 lbs.) weight—De Dion and Bouton, 2.325 litres; 3rd class, voiturettes not more than 400 kilos. (880 lbs.) weight—Peugeot, 5.800 litres; 4th class, light cars not more than 650 kilos (1,430 lbs.) weight—Georges Richard, 6.165 litres; 5th class, cars not more than 1,000 kilos. (1 ton) weight—Chenard-Walker, 6.470 litres; 6th class, heavy cars more than 1,000 kilos (1 ton) weight—Delahaye, 13.330 litres; 7th class, heavy traction cars over a course of 60 kilometres or 37½ miles—Société des Telephones Ader, 3.850 litres. Classed per kilometric ton, the following are the results:—1st class, Clement, 0.078 litre per kilometric ton; 2nd class, De Dion and Bouton, 0.132 litre; 3rd class, Peugeot, 0.105 litre; 4th class, Gladiator, 0.1027 litre; 5th class, Chenard-Walker, 0.0599 litre; 6th class, Amedée Bollée fils, 0.1076 litre; 7th class, Société des Telephones Ader, 0.0661 litres. Arranged in the order of the kilometric ton, which is the true test of efficiency, and irrespective of class, the class winners were as follows:—1, Chenard-Walker; 2, Société des Telephones Ader; 3, Clement; 4, Peugeot; 5, Amedée Bollée fils; 6, Gladiator; 7, De Dion and Bouton. Undoubtedly the great successes of the trial were Chenard-Walker with a car weighing, loaded, over 1 ton, and the Société des Telephones Ader with a delivery wagon weighing 1½ tons. The light car class had by far the largest number of entries (28), showing once more that this vehicle is considered the automobile of the present if not of the future. Three Bardon cars in Class 5 ran very well and secured three out of the first five places, the consumption being 8.300 litre, 8.360 litre, and 8.950 litres respectively.

BELGIUM is still in the throes of exhibition rivalries. The readers of the *Journal* will remember that I have already told them of the two exhibitions which are to be held in Brussels in March—the one at the Cinquantenaire Parc, under the patronage of the A.C.B. and of the Chambre Syndicale de l'Automobile, and the other at the Pole Nord, under the auspices of the Société Royale Union Auto-Veloce de Belgique. The last-named society has held annual bicycle shows for the last ten years, and during the last three years these shows have developed almost exclusively into automobile displays. The automobile trade were, however, not allowed to have a voice in the matter; hence the split. Matters have been now aggravated by the question of Royal patronage, and at the meeting of the A.C.B. last week it was decided to ask the King of Belgium to become patron of the show held under its auspices. There was only one dissident—the president, Count Van der Straten-Ponthoz,—who insisted that if he asked the King to patronise one show he should also ask his Majesty to patronise the other. Finding himself, however, in a minority of one, the Count decided to resign his position of president, and so the A.C.B. is in search of a new president.

THE correspondence at present going on in the *Journal* between Messrs. Edge and Westlake should be carefully studied by those who are interested in British trade in motor-cars. I can substantiate from my own knowledge the last paragraph of Mr. Westlake's letter in the last week's issue. Remarkable improvements will appear at the time of the big races, and until English manufacturers wake up and learn what is being done in France they will continue to be behindhand and to have only a very small proportion of the English trade.

FOURNIER has gone back to America. He sailed last week from Cherbourg on the "Kaiser Wilhelm der Grosse," and will be in New York before these lines appear in print. I shall be very much surprised, however, if he is not back again in sunny France before many weeks are over. It will take a big inducement to make him break away from his cosy flat which overlooks the Bois de Boulogne, and is only a few minutes from the Avenue de la Grande Armée, which is the "hub of the universe" to French automobilists. His Searchmont friends will have to forge a golden (read cash) chain and not a paper (read shares) one to induce him to cast anchor on their side of the herring-pond. Fournier is a remarkably smart and daring driver, and if any reader of the *Journal* wants to prove it let him (if he can and dare) take a drive with the Paris-Berlin champion in the crowded streets of Paris and be whipped round corners at twenty-five miles an hour and dodged in and out of traffic in a manner fit to make the boldest shiver, finishing up at the destination with, not a slow down, but a dead stop with all the brakes hard on, and then a merry twinkle in Fournier's blue eyes whilst he looks round to see if anybody has fallen off.

THE Durham County Council has approved the proposals of the Gloucestershire Council.

MR. G. M. Franklin, Rupert Street, Bristol, offers to take his car to the residence or stable of any horse owner in Bristol with a view to the education of horses.

THE Auto-Lubrine Company, of Fairfield, near Manchester, have sent us a sample of their motor-cylinder oil, Auto-Lubrine. It is claimed that the oil is a pure hydro-carbon, having a high flash and medium viscosity, retains its lubricating properties at abnormally high temperature, and will remain liquid when subject to a temperature even below freezing point. We intend to submit the oil to test and to report further.

EXTENSIVE premises in the Limes Road, Croydon, have been opened by the Anti-Vibrator, Ltd., where they are prepared to repair, or supply parts for, motor-cars. The company has ample storage accommodation and will enter into contracts to store, clean, and maintain cars for any period. Plant has also been laid down for charging the accumulators of electric vehicles.

MOTOR-CARS AT LIVERPOOL.

LAST week we referred to the automobile trials which took place at Liverpool in connection with the Cycle and Motor Show in that city. The report of the judges, Professor H. S. Hele-Shaw and Mr. E. Shrapnell Smith, has been issued and records the satisfactory growth of the light motor-car industry in this country. It is pointed out that the light motor-car industry of this country, as indicated on the trial run, has made great progress so far as reliability is concerned. The journey took place over the worst roads in the district, being hilly and covered with loose stones. Rough roads like those between Rainford and Blackburn and Preston and Ormskirk, traversed at a high rate of speed, and hills, many of which were as steep as 1 in 10, afforded severe tests as to trustworthiness and efficiency. Although four of the cars out of the twenty which took part in the trial did not complete the run within the time allotted by the judges, their breakdowns admitted of remedy within a few hours.

Another important feature which the judges point out is the remarkable development of the motor-bicycle. This motor may be said to be within reach of a very large proportion of those who at present use the ordinary bicycle; but whereas it would have been impossible for anyone except a powerful and trained rider to have traversed these roads and completed the eight-two miles without fatigue and physical strain, those who rode these machines travelled the distance without the slightest inconvenience or fatigue. The judges conclude their report by giving the hill-climbing speeds and the fuel and water consumption on the trials as follows:—

Motor.	Speed up		Consumption.	
	Cemetery	Brow.	Petrol.	Water.
	Miles		Galls.	Galls.
	per hour.			
Mr. Jackson's Daimler ..	10.5	..	4.0	0.25
Mr. Williamson's Daimler ..	12.0*	..	3.1	0.12
Mr. Strang's R. and P. Bicycle ..	12.0*	..	—	—
Rochet 8-h.p. car ..	10.1	..	4.6	1.75
Locomobile ..	12.0*	..	9.5	70.0
Do. ..	12.0*	..	12.75†	83.0†
Imperial 5 h.p. ..	6.4	..	3.75	0.75
Mabley 2½ h.p. ..	11.3	..	2.25	1.75
Stirling 4½ h.p. ..	9.3	..	2.5	—
Rochet 4 h.p. ..	10.6	..	3.0	0.25
Rochet Quad ..	12.0*	..	1.75	1.0
R. and P. Bicycle ..	12.0*	..	0.56	—
Humber Bicycle ..	12.0*	..	0.80	—

* Speeds above twelve miles an hour not recognised.

† Traversed an extra twelve miles.

The awards in connection with the show were made as follows:—

AMATEUR SECTION.—Class A, Carriages: Silver medals, Mr. H. Jackson, Bradford, 10-h.p. Daimler; Mr. Leonard Williamson, Southport, 12-h.p. Daimler. Class B: No entries. Class C, Bicycles: Silver medal, Mr. M. Strang, R. and P. 1½-h.p. cycle.

MANUFACTURERS' SECTION.—Class A, Carriages: Gold medal, Rochet 8-h.p. car, the British and Foreign Motor Co., Ltd., Islington, Liverpool. Silver medal, Locomobile steam car (Mr. W. H. Buxton, Liverpool). Bronze medal, 8-h.p. Imperial car, the Imperial Autocar Manufacturing Co., Manchester.

VOITURETTES.—Gold medal, the Mabley, Hitchings, Ltd., Liverpool. Silver medal, the Stirling voiturette phaeton, Mr. W. T. Pritchard, Ltd., Liverpool. Class B: Gold medal, Rochet 4 h.p. quadricycle. Class C: Gold medal, Robinson and Price, 1½-h.p. bicycle. Silver medal, Humber, Ltd., Liverpool, 1½-h.p. bicycle.

Bronze medals awarded for special features: Marshall and Co., Clayton, Manchester, and Humber, Ltd., Liverpool, for general design; Robinson and Price, for 2½-h.p. petrol engine, specially designed for Liverpool Technical School for demonstration purposes; Bennett and Carlisle, for Govan change-speed gear.

On Saturday the show was concluded, when the Lord Mayor presented the medals, etc., won by the exhibitors. Sir Alfred

L. Jones (president of the Liverpool Self-Propelled Traffic Association) presided. He remarked that he would like to see Liverpool right at the front in establishing industries for the production of all classes of motor-vehicles. What they wanted in Liverpool was a commercial article, and that was the heavy wagon. It was hardly possible to over-estimate the importance and utility of such a wagon for commercial purposes in Liverpool. He was looking forward to a great industry rising in the city in the manufacture of motors that would be useful to the citizens as wage-earners and profitable to merchants and purchasers. It had been said that the development of motor-traffic would injure our railways. But Sir Alfred did not think that motor-wagons would be in the least detrimental to our railways. The Lord Mayor, in rising to present the medals, said he believed that motor-vehicles in the near future would come to the front. Just as progress had been made in bicycles from the days of the old "bone-shakers," so we should see a similar advance with respect to motor-wagons. He hoped that Liverpool would not be behind in this industry and would like to see great factories in the city for the manufacture of motor-vehicles.

Mr. J. C. Robinson (chairman and director of the show) moved a vote of thanks to the Lord Mayor, who, in responding, proposed a vote of thanks to Sir Alfred A. L. Jones. The Liverpool Self-Propelled Traffic Association, he said, was one of great importance, and with the assistance of the excellent secretary, Mr. Shrapnell Smith, he believed it was one of the best associations in the country.

THE Long Island Automobile Club will hold a 100-mile non-stop endurance run and hill-climbing contest on April 26th.

By a recent decision of the New Zealand Customs Authorities, mineral naphtha, including petrol, is to be admitted into the colony free of import duty.

AT last the writer of the short story has centred a tale around a husband's infatuation for the motor-car, an infatuation that caused him to leave his wife too often alone. It was inevitable, and the *Free Lance* is responsible for the publication.

THE Overman Automobile Company state that there is no truth in the report that their company has been absorbed by the Locomobile Company of America. They have simply entered into an agreement to make certain parts at their factory for the Locomobile concern.

MR. LESLIE BUCKNALL, the well-known motorist, has just made a series of balloon ascents from Sevenoaks. On Saturday, at one o'clock, he set out on a plucky aerial voyage during a severe snowstorm. He was accompanied by his two brothers and Mr. Stanley Spencer, the latter in charge of the balloon, the City of York. The ascent was successfully accomplished, and the balloon travelled in a north-easterly direction.

At the last meeting of the Denbigh County Council Mr. J. E. Humphreys moved that the Council make arrangements for controlling the speed of motor-cars, and said the police should be in a position to have control of the cars, and each car should have a distinguishing figure on the front and back. On the suggestion of the vice-chairman, the matter was referred to the Locomotives Committee.

A NEW internal combustion motor using ordinary heavy oil with, it is claimed, an absolutely invisible exhaust under all conditions of load and speed, is being introduced by the Allsop Smokeless Petroleum Engine Syndicate, of 37, Norfolk Street, Strand, W.C. The engine has two cylinders—a small pump cylinder which draws in and delivers in a regular manner the petroleum vapour into the second, or larger cylinder, which is the motor cylinder proper. An essential feature of the arrangement is the compression of the hydro-carbon without ignition in the small, or pump cylinder, with, as a result, development of greater power and the perfect combustion of the fuel in the motor cylinder. When thoroughly warm, the burner heating the ignition tube may be turned out, the engine firing the charge itself by the heat of the combustion chamber walls.

FLOTSAM AND JETSAM.

BY FLANEUR.

BY a fortuitous combination of circumstances I found myself a day or two ago in more or less amicable converse with a chief constable of police. The county over which he has jurisdiction shall be nameless; in view of the fact that I wish to refer to one or two of his observations it would be unfair that he should be identified, though I may add that he well knew that I was a journalist, and from the way in which he himself opened the conversation, and the extreme frankness with which he volunteered his opinions, I had no reason for supposing that he had any aversion whatsoever to the publication of his views.

I do not propose to dwell upon these at any length, but merely to quote two of the most significant of his remarks, because they show clearly enough what we automobilists have to face in certain portions of the country, and they help to an elucidation of the question I have previously asked in these columns—namely, “Who are our enemies?” The chief constable in question disclaimed any personal antagonism to motor-vehicles or their users, but stated that he was bound to put the law in motion, because of pressure brought to bear upon him by the magistrates themselves! The importance of this declaration may be appreciated when it is borne in mind that these magistrates come into court to hear charges against automobilists, against whom they have thus waged a secret warfare, and against whom, therefore, they entertain a degree of bias which renders a fair trial impossible.

FROM another source I have also heard that the farmers in this same county have likewise been influencing the chief constable by working up an agitation against automobilists. It is a melancholy reflection on the weakness of human nature, that motives of self-interest should be so nakedly displayed. “The motor-car does not eat fodder; if motor-cars become general we shall have fewer oats to sell. We shall also have fewer horses to breed, and lower prices even for those that we do happen to dispose of. Let us, therefore, hinder the growth of this new movement by every means in our power, fair or foul. The public interest, or the law of progress, is nothing to us; we are frankly and blatantly selfish.” This, in effect, is the mental attitude of the farmer in certain districts; in Kent, perhaps, another tale could be told. It is not too much to say, moreover, that farmers of the hostile type welcome with avidity the heavy fines imposed on automobile drivers, for these large and cheaply-earned accretions to the county funds have the obvious effect of reducing the rates of that particular locality.

BUT to return to the chief constable. “You must get the law altered,” he said with emphasis, when I had obtained from him a virtual admission that the twelve-miles-an-hour regulation was tyrannical and absurd. It was a palpable surprise to him when I pointed out that it was quite feasible to summon for “furious driving so as to endanger the life and limb of any passenger, or to the common danger,” under the Highway Act. He appeared up to that moment to regard himself as wholly without option in the matter, and to consider that the Local Government Board regulations were the only ones under which he could proceed against automobilists. In all probability, however, the hostile forces at his back would not be content with anything but summonses under the twelve-miles-an-hour rule; they want their pound of flesh, and mean to have it, if the letter of the law will let them.

THE moral is obvious. So long as the “ridiculous” regulation—to use Mr. Walter Long’s own description—is in force, so long will it be possible for automobilists to be harassed in an absolutely unjustifiable way, when travelling at over twelve miles an hour on the open highway, or, for that matter, when proceeding at a slower pace, but timed by the usual police methods.

It is strange that this lesson should still need to be enforced, but when there are automobilists—as was shown in one conspicuous instance at a recent Club discussion—who actually talk of “letting well alone” because they themselves have not yet been summoned, it is meet that the point should be hammered home. It is all very well for men living in a county where persecution is not rife, and whose ideas of automobile travelling are so parochial that they do not drive far afield, to contend that matters may well remain as they are; but those whose journeyings expose them to indefensible aggression, or who actually reside in a hostile county, are constrained to pipe to a different tune. In one way it would be better if the strict letter of the law were enforced in every county, for automobilists generally would be up in arms instead of lukewarm, as too many of them are.

APROPPOS of the warming of motor-houses, reference was made in this journal last week to the danger of using lamps for the purpose “unless a safety-stove, somewhat on the Davy principle, could be supplied for the purpose.” Such a stove is not on the market, I believe, but an ingenious friend of mine devised one lately for his own use, and it works most satisfactorily. He has surrounded a gas jet with a huge environment of gauze, about the size and shape of a railway-carriage foot-warmer, and this he claims to constitute the largest Davy lamp in existence. Though the building in which the car is housed is out in the open—at the bottom of a garden—the owner has had nothing to fear from the various frosts we have been visited with this winter.

SOMEWHAT curious was the way in which the *Daily Mail* and *Daily Express* threw themselves into a state of considerable excitement in last Monday’s issues concerning two new motor-cars which the King was stated to have ordered. One looked to see if still further Royal patronage had been accorded to the automobile industry, but in each journal alike the lengthy disquisition which met one’s eyes was nothing more nor less than a belated extract from the *Court Journal*—of all papers! Well, the *Court Journal* is scarcely the same thing as the *Court Circular*, and so far from the “information” being new and authoritative alike, it embodied nothing that was not already known, or that had not been published weeks ago in many journals, including, if I recollect aright, the above-named dailies themselves. Possibly, however, there may have been people who saw one or other of the paragraphs on Monday, but had not previously been made aware of the King’s abiding interest in automobilism; in which case we may be glad that that fact has been emphasised anew.

“MOTOR Race in Lancashire” is the title of an article in the *Manchester Dispatch* on the recent Liverpool trials. How some journalists allow their imagination to run away with them!

THE official list of members of the Automobile Club of America has been issued in a neat little volume, which also gives the by-laws of the Club, and a directory of the automobile clubs in Europe and America. The total membership of the Automobile Club of America is now 353, 291 of whom are active members.

MR. W. J. MILLS, of High Road, Clapton, sends us a short account of a trip on his Werner motor-bicycle from Clapton to Frinton-on-Sea. On the journey “something went wrong with the works,” but Mr. Mills discovered in Mr. Fisher, a Tollesbury motor-car agent, an excellent friend, who, after two hours’ work, sent the motorist on his way rejoicing.

WE learn that the title of the British and Foreign Electrical Company, Ltd., is being changed to the British Electromobile Company, Ltd. The managing director of the company, Mr. Theodore Chambers, has informed us that in the future the electric carriages made by his company will be entirely of British manufacture. By an arrangement with Accumulator Industries, Ltd., of Woking, all the carriages will be equipped with “Leitner” batteries. On its part the Woking company has decided that all car bodies required for the batteries which it supplies shall be manufactured by the British Electromobile Company.

HERE AND THERE.



THE Daimler Motor Company have just completed a handsome 12-h.p. car for Lord Brassey.

LORD SUFFIELD has intimated that he will allow speed trials to be held on his estate at Cromer.

THE Talbot Cycle Company, of Wolverhampton, are introducing a motor-bicycle on the Minerva system.

A BRIGHTON motor-car firm is contemplating the establishment of a motor-wagonette service in Rugby in the spring.

In our article on the Brooks light car, published last week, we should have stated that the removal of the body can be effected by simply releasing four bolts.

THE Birmingham Theatrical Charity Sports Committee is organising a race meeting on the track at Aston for March 12th next. Included in the events is a motor-bicycle handicap.

THE competition of the Lincoln Motor 'Bus Company during part of the year and the high price of horse fodder are the two reasons ascribed by the Lincoln Tramways Company, Limited, for a lessened profit.

BY vulcanising fresh rubber to the old covers of motor-cars the "Imperial" Tyre and Rubber Company, Limited, 27, Brooke Street, Holborn, E.C., are claiming to render old tires practically as serviceable as new ones.

THE future generation should know something of automobilism, for the *Boy's Own Paper* is publishing a series of articles on "How to Build a Model Steam-car." Importers of American cars will have to look to their laurels.

THE Motor-Cycling Club, Limited, has been registered as a company limited by guarantee, with a membership of 500, each of whom is liable for the sum of 5s. in the event of winding up. The registered office is at 13, Colville Mansions, Talbot Road, Bayswater.

FOUR or five public-service cars are still running between the Post Office and Haymarket, Edinburgh. Two of the cars belong to the New Rossleigh Cycle and Motor Company, Limited, who in their few weeks' experience have done a satisfactory business.

In the recent Liverpool trials the R. and P. motor-bicycle accomplished the run of eighty-one miles over a rough hilly course on nine-sixteenths of a gallon of petrol. Professor Hele-Shaw and Mr. E. Shrapnell Smith have since ordered R. and P. machines for their own use.

THE Motor Mart Limited report the sale, during the ten days preceding the 4th inst., of eighteen motor-cars and five motor-tricycles. The cars included a public-service vehicle, four De Dion voiturettes, five Benz cars, two Daimlers, two Star cars, one Panhard, and three Clement-Panhards.

A NEW motor-tire price list has been issued by the Clipper Pneumatic Tyre Company, Limited. It comprises particulars of tires for heavy cars, voiturettes, and motor-cycles. Prices are also given of old types of light car tires for replacement by motorists. These, however, are only sold for replacement purposes.

MOTOR-CARS are now being made in New York for the children of the rich. The millionaire's baby who has passed beyond the perambulator stage can enjoy its daily outing in a miniature electric Victoria. The wheels of these baby Victorias are not more than 1 ft. in diameter, while the seat is about 8 in. or 9 in. square.

A DESCRIPTION of the Chapelle motor-bicycle has been published by the United Motor Industries Limited. The features of this machine are well known. It can be supplied with or without a speed-changing gear, and the motor is placed in the axis of the frame. A full explanation of the two-speed changing gear is provided, and a series of useful hints on how to start and stop the bicycle concludes an interesting little pamphlet.

MR. LEONARD WILLIAMSON, Southport, drove from Southport to Liverpool, via Ormskirk, on Saturday, in order to take the Lord Mayor and Lady Mayoress to West Kirby and back, prior to the distribution of medals, in connection with the

Liverpool Cycle and Motor Show. Mr. Williamson drove through a blizzard and several inches of snow, with 5-inch pneumatic tires frequently completely buried in the snow, in the short time of one hour and twenty minutes.

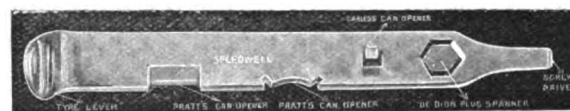
WHEN the application for the renewal of the licence for motor-cars to ply between Gravesend and Northfleet comes before the District Council, attention will be drawn to the alleged persistency with which the cars are driven in the middle of the road.

GARAGES, LIMITED, has been registered with a capital of £10,000, to acquire the business of the Club Garage, Limited, and certain assets connected therewith, and to carry on the business of, or connected with, the storage of motor-cars, repairers, hirers, etc. The registered office is at 19, Princess Street, Westminster.

THE Albany Manufacturing Company, Ltd., has been registered with a capital of £2,000, to adopt an agreement with T. Threlfall, T. B. C. Hardman, and H. Lamplough, and to acquire any real, personal, or other property in any part of the world, and to develop, deal with, work, and turn to account the same in such manner as the company shall see fit.

A COMBINED volt and ampere-meter, designed especially for use on electric motor-carriages, has recently been introduced by Messrs. Nalder Bros. and Thompson, Limited, of 34, Queen Street, E.C. It consists practically of two instruments having a common magnet, thus possessing the advantages of two scales and pointers, with little more than the weight of a single instrument.

THE Speedwell Motor Company, of Reading, has just introduced a handy little combination tool for the use of motorists. As will be seen from the accompanying illustration, the tool comprises not only a tire lever, screw-driver and spanner



for De Dion sparking plugs, but also can openers for the spirit cans of either the Anglo-American Oil Company or Messrs. Carless, Capel and Leonard. The tool is about twelve inches in length and is strongly made, and, being nickel plated, is of neat appearance. Altogether it forms a useful addition to the motorist's tool kit.

THE illustration on page 904 shows a motor delivery van that has lately been supplied by the Motor Manufacturing Company, Limited, to Messrs. W. Whiteley, Limited. The van is similar in all respects to the one that went through the Glasgow trials last autumn so successfully. It is fitted with a double-cylinder engine of 7 h.p. and has a carrying capacity of one ton. We understand that the car has given great satisfaction to Messrs. Whiteley, making an average of no less than ninety calls daily. During the Christmas holidays it was frequently called upon to convey loads weighing nearly thirty cwt., although really only intended to carry one ton.

MESSRS. PETO AND RADFORD, LIMITED, have sent us particulars of a new accumulator they have just introduced, and which has been specially designed for motor-car use so as to withstand vibration. The plates are composed of three distinct parts: 1 the case, 2 the grid, and 3 the separator or insulator. The case consists of an outer shell of lead, which gives strength and mechanical support to the grid. The plate consists of a very light grid filled with a maximum amount of active material, while the separators are formed of two pieces of perforated ebonite or celluloid, which prevent the paste from falling out or causing a short circuit by bridging across the plates. The accumulators, which are known as "Armoured," are made in a variety of sizes, ranging from ten up to eighty ampere-hour capacity at four volts, and from twenty to eighty ampere-hour at two volts.

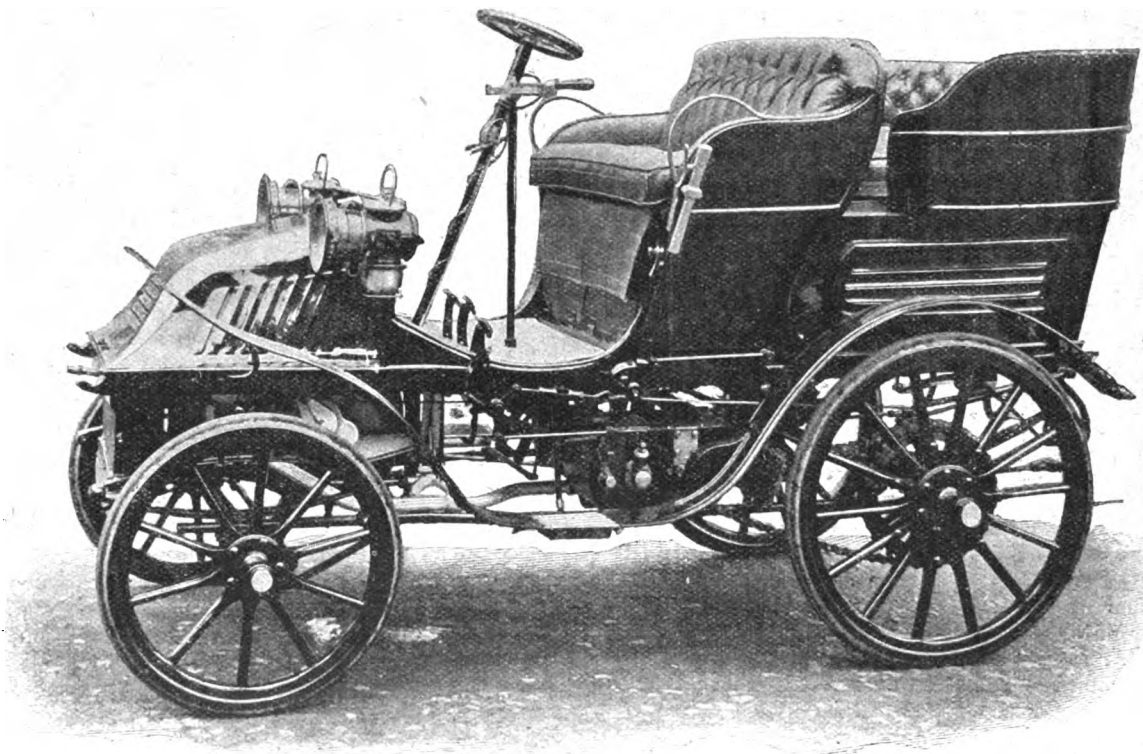
MOTOR-BICYCLES.

At a meeting of the Cycle Engineers' Institute, at Birmingham, on Thursday last week, Mr. A. Craig read an interesting paper on Motor-bicycles. The first part consisted of a brief description of all the leading types of motor-bicycles, including the Werner front-driver, the Werner rear-driver, the Minerva, the Derby, the Brown, the Mitchell, the Enfield, the Progress, the Chapelle, the Humber, the Singer, and the Holden. Figs. 1 and 2 show the Accles-De Veuille-Starley motor-bicycle. This is an interesting machine which is just about to emerge from the experimental stage. Worm gear is adopted, so proportioned that the worm will drive the worm wheel, or *vice versa*, and an oil bath is provided to ensure proper lubrication. Only a single chain is used.

Mr. Craig next devoted his attention to some general considerations of motor-bicycles. An abstract of his remarks is appended:—

Stability.—The general belief which prevailed some time ago that a motor-bicycle was less safe than the ordinary machine and more liable to side-slip, no doubt had a considerable effect in retarding its development. That the danger was much exaggerated has since been practically demonstrated, and the machine has been proved to be at least as stable as the pedal-driven bicycle, though when a fall does take place the effects may be in some cases more serious. The fact remains, however, that side-slip does occur on motor-bicycles, and anything which would minimise it would

while he, or rather his centre of gravity, will come down vertically. In passing from the original position to the final one, the movement of the rider and machine as a whole has been twofold—namely, a fall vertically and a rotation about a horizontal axis of a quarter of a circle, which is explained by the fact that the final position is at ninety degrees to the original position. These movements we may consider separately. If the motor is in the high position, with its weight near the horizontal line of the centre of gravity of the machine and rider, a given disturbing force will rotate the whole through the quarter of the circle in less time than will be the case if the motor is located far away from the centre of gravity, that is to say, near the ground. The comparison is the same as when two fly-wheels of equal weight but different diameter are considered. To look at it in another way, the quickest fall that the rider can have is when he comes down exactly in a vertical line by the machine skidding freely from under him. If, as would be the case when a weight such as the motor is placed low down in the frame, the side movement is more sluggish, then the rider will be constrained to move some distance laterally in the other direction, away from the vertical line also, and therefore his fall must be retarded. The author is, consequently, of opinion that the lower the motor is placed in the frame the less sudden will be the side-slip, but he does not regard it as a question of vital importance, since practice has demonstrated that satisfactory machines of both types can be made. Other considerations have a bearing on the question, and one of these is convenience of handling when the rider is off the machine. From this point of view the low position



THE BELLE 6 H.P. TONNEAU (MESSRS. E. J. COLES AND CO.).

[For Description see issue December 7th last.]

be welcomed by all users of the machine. A point that has been greatly debated in this connection is whether the motor should be placed in a high or low position in the frame.

Side-slip may arise either from excessive speed round corners, in which case the height of the centre of gravity does not influence the angle to which the rider has to lean inwards, or it may arise from irregularities of a greasy road, such as tram-lines, etc. If side-slip occur in going too fast round the corner, one would be inclined to put it down to carelessness on the part of the rider. The side-slip arising from the second cause, however, is more common, and also more difficult to guard against. If a rider loses his equilibrium and falls sideways on a dry road, his centre of gravity will move approximately in a circular path round the line of contact of the wheels and the road. In this case, the higher his centre of gravity the more time would he have to recover himself in the first part of his fall, as it is practically a case of the inverted pendulum, the length of which is the height of the centre of gravity from the ground, and it is a well known fact that a long pendulum is slower in its movements than a short one. In the case of a side-slip the conditions are reversed. The lower part of the machine does the lateral movement, and the centre of gravity of the rider comes down approximately in a vertical line. Neglecting the forward movement of the bicycle, let us imagine the rider sitting on the machine, which is being held up for him on a greasy road. If the support be withdrawn he will commence to fall sideways, and so soon as he gets to a slight angle the machine will skid laterally from under him,

of motor is certainly the best. Gyroscopic action of the fly-wheels has some effect on the stability of the motor-bicycle, although nothing like so much as is commonly supposed. The rule is as follows: "When a fly-wheel rotating about its axis is turned about another axis, the fly-wheel axis tends to set itself parallel to the other axis, with the fly-wheel rotating in the same sense as the movement about the said other axis." As a matter of fact, the gyroscopic effect is so small with the light fly-wheels at present in use that it may be neglected, but, where possible, it is advisable to arrange the direction of rotation so that the gyroscopic action increases the stability of the machine.

Engines.—Small air-cooled engines have been brought to a high state of efficiency by the manufacturers of motor-tricycles, and the experience gained provides ample data for the design of motor-bicycle engines. These latter, of course, are smaller and lighter in every way, the most notable reduction being in the size and weight of the fly-wheel. Air-cooling is almost exclusively used, but the Holden machine forms the exception, as this is water-jacketed. Of course, water-jacketing was used in the earlier days on the Wolfmuller bicycle, and it is not at all unlikely that it may come into favour for bicycles fitted with high-powered engines, and especially for tandems.

Weight of Engine.—The reduction in weight and size of the fly-wheels still form the chief element in the weight of the engine. Suppose the machine to be geared so that it runs twenty-four miles an hour when the engine is making 1,800 revolutions a minute, probably the motor-bicyclist

would be satisfied if his engine commenced to work as soon as he got up a speed of two miles an hour by pedalling to start it. This would mean 150 revolutions per minute of the engine, and the weight of the fly-wheels should be such that their momentum at 150 revolutions, together with the energy of the first explosion, would just carry the engine over the next compression. As a matter of fact, existing engines can be started at a much slower speed than this. It thus appears that the present weight of the fly-wheel might be considerably reduced without impairing the starting power of the engine at low speeds. Of course, the fly-wheels have another function to perform in evening up the irregular impulses of the single-cylinder engine, but these are not very noticeable when the machine has attained even a moderate speed. If a motor-bicycle were fitted with an engine having extremely light fly-wheels and a disengaging clutch, the machine might be started by pedalling and the engine thrown into gear with very little shock indeed. The cylinder might be reduced in weight by making it of drawn steel; the radiators could be of sheet copper and threaded on as in the Aster, which arrangement is quite satisfactory.

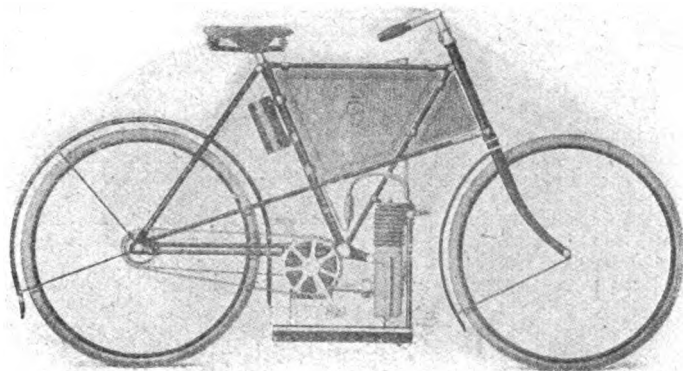


FIG. 1.—THE ACCLES-DE VEULLE-STARLEY MOTOR-BICYCLE.

Carburettors.—Although the surface carburettor is more common at the present time, it will probably in the near future be replaced by some form of spray carburettor which would be more uniform in its working. Of course, a level-regulating apparatus may be fitted to a surface carburettor, as in the Singer machine, which would make its working quite uniform, but that would have no advantage in the way of simplicity or efficiency over the ordinary spray carburettors. Of the spray or jet carburettors the ordinary float feed is best known, and this can be easily made up in a small size suitable for motor-bicycles. There are others on the market in which the spray nozzle is normally closed by a small conical valve held lightly down by a spring. The suction on each charging stroke of the engine causes this valve to open, and a spray of petrol emanates from the nozzle. When properly regulated these carburettors are quite effective, and can be very small and compact.

Ignition.—The ignition apparatus of a motor-bicycle, in common with that of other motor-vehicles, is the part which most frequently gives trouble. Electrical ignition is now, of course, universal, but the current may be supplied either by primary battery, secondary battery, or magneto. In the last case, it is a low-tension current, while the former two are employed in connection with the induction coil to produce a high-tension current giving a jump spark in the cylinder. Generally speaking, the contact-breakers, induction coils, and other apparatus employed in connection with the high-tension ignition gear for motor-bicycles have been of the very cheapest variety, and this has naturally caused a good deal of trouble to the user. With about one exception the induction coils used on motor-bicycles have no trembler, the interruption to the current in the primary circuit being made by the contact-breaker, which is generally of the Aster type, producing one spark only instead of a stream of sparks such as the trembler coil gives on the large cars. Probably the small space available has accounted for the inefficient contact-breakers that have been fitted in the past; and the necessity having been seen for something better, these troubles will soon be eliminated. Accumulators seem to find favour with motor-bicycle users in preference to dry batteries, but neither can be considered an ideal source of current for the purpose. Magneto-ignition has proved successful on the Singer bicycle, and its general adoption, not necessarily in the low-tension form, would at any rate remove one source of anxiety from the mind of the rider.

Transmission.—The method of connecting the engine to the driving-wheel has an important effect on the efficiency of the mechanism as a whole, and also materially influences the general arrangement of the bicycle. The simplest form of transmission is that in which the connecting rods of the engine drive directly on to cranks on the back wheel axle. This is exemplified in the Holden bicycle, and was also used on the Pennington and Wolfmuller machines of earlier date. The arrangement is open to many objections, unless it be made in the four-cylinder form like the Holden, and the tires of the back wheel soon become badly worn. The method of transmission which comes next in the way of simplicity is the belt-drive,

which is so largely used at the present time. A twisted leather belt is generally employed, running in V-grooved pulleys. This drive has the merit of being very smooth in its action, and by admitting of a little slip between the belt and the pulley prevents any irregular working of the engine having effect on the rider. It is also conveniently detachable in case the engine fails and has to be disconnected. It has been a matter of surprise, however, to many who have had experience in motor-car construction that the belt should have survived so long as a means of transmission in motor-bicycles, since the conditions are more unsuitable than in the case of larger cars, where it has been superseded by chain or gear drive. The use of higher-powered engines this year has certainly revealed the inadequacy of the round belt in many cases, and some manufacturers have adopted a flat belt in preference. Probably the belt-drive will eventually lose favour except for low-powered machines, and some form of chain or gear drive, with a spring or slipping clutch in one of the wheels, take its place. The gear-drive is best exemplified in the Singer motor-bicycle, where the pinion on the engine shaft drives directly the internal gear-ring on the road-wheel. It forms a very efficient method of transmission, and one that has already been proved practicable on motor-tricycles. However, there is no doubt that it would be considerably improved if it were made more elastic, so that the shocks of the engine should not be imparted to the rest of the machine. Chain transmission will probably become the most popular in all cases except for low-powered machines, and some form of chain or gear drive, with a spring or slipping clutch in one of the wheels, take its place. The gear-drive is best exemplified in the Singer motor-bicycle, where the pinion on the engine shaft drives directly the internal gear-ring on the road-wheel. Its efficiency is undoubtedly higher than that of the belt, and it can be made as smooth in its action. If the reduction from the engine to the road-wheel be attempted in one step, a very large and unsightly sprocket-wheel or belt-pulley must be fixed to the driving-wheel. With the high efficiency obtainable on a chain-drive it may be worth while to make the reduction in two steps, in which case the drive would appear less clumsy, and a suitable gear-case could be easily fitted. The worm-drive is exemplified in the motor-bicycle illustrated in Figs. 1 and 2. By the use of worm-gear the necessary reduction between the engine and road-wheel can be effected in a very small space, and although the worm is certainly less efficient than spur-gearing, yet if well designed and properly made it is doubtless more efficient than the belt-drive commonly used. Two-speed gears have been fitted in some few cases, but this seems an unnecessary complication except for very hilly country. It is also convenient when the engine is not working up to its normal power, but it frequently happens, in cases where a low-speed gear is fitted to a vehicle propelled by an air-cooled engine, that the driver, in his endeavour to get up hills quickly, will race his engine on the low gear, and this, of course, leads to overheating and loss of power.

Disengaging Clutches.—It is useful to have some means of disconnecting the engine from the road-wheel without dismounting from the machine. If such an arrangement be fitted the rider can mount the machine with the engine disconnected, and put the latter into gear after he has started. The momentum of the machine and rider will then carry the engine over its compression, and start it without excessive exertion on the part of the rider.

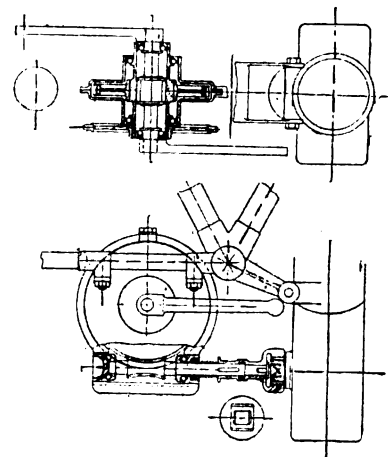


FIG. 2.—DRIVING GEAR OF ACCLES-DE VEULLE-STARLEY MOTOR-BICYCLE.

General Arrangement.—It has already been remarked that the system of transmission used largely governs the design of the machine as a whole, but in cases where a belt or chain is used there are several positions in which the motor can be fitted. The ordinary bicycle, even when suitably strengthened, is not particularly adapted for the attachment of a motor, and a better result can be obtained by designing a special frame for the purpose. In such a design the motor is not the only thing to be considered, as provision must also be made for a petrol tank, battery case, etc. There is a very wide field for the designer of motor-bicycles, as tandems and spring frames have yet to be dealt with. If water-cooling be adopted, there should be no difficulty in enclosing the motor and accessories in one portion of the frame and concealing it with a panel on each side. By this means a very neat result could be obtained. Details cannot have too much attention, as the efficiency of the machine as a whole largely depends upon them. A weak rod to the compression tap or contact-breaker, for instance, would

be an endless source of annoyance, and the lubricating arrangements must have very careful attention. The motor-bicycle is the simplest, and consequently the least expensive, form of motor-vehicle which can be made. The fact that it has proved practicable in actual use ensures its popularity in the future; indeed, the trade has already assumed much greater proportions than is generally known. The subject is, therefore, worthy of the most careful consideration on the part of cycle engineers, and they will find that it is not lacking in interest.

CORRESPONDENCE.

MOTOR-BICYCLES FOR 1902.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I note W. M. W.'s reply to my letter in your issue of the 25th ult. As I surmised, his fly-wheel for the new machine he has made is of somewhat exceptional diameter. Its weight multiplied by velocity at 2,000 revolutions would be about 1 h.p., actual. I think this would agree well with the dimensions of the cylinder as given. I am glad to see W. M. W. places his fly-wheel externally. I believe this is one of the best ways of keeping the weight down in these machines; I am doing the same, and I may also mention that I have reduced the weight of my engine by 30 lbs. for a 3 h.p. motor. As he surmises, I am using a more or less rigid system of transmission.—Yours faithfully,

ANTHONY WESTLAKE.

STARTING A MOTOR-TRICYCLE.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—If your correspondent who signs himself W. Auld will make an air hole in his petrol tank, or force petrol in carburettor with a force-pump on tank, I think he will get over his difficulty. I had the same experience, and found that the tank was air-bound, and that the engine would not run many minutes unless I opened petrol tank plug and let air in.—Yours truly,

AIR-BOUND.

THE RECENT HILL-CLIMBING TRIALS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—May I suggest that a very good climb is that of Hazellville Hill, leading from St. John's Road into Hornsey Lane, Highgate? This hill is long, very wide, and of good sandstone surface. It is situated amid very quiet surroundings, and is only four miles from Charing Cross. Another gradient that seems to have been forgotten since the early cycling days is Muswell Hill. Either of these I consider a far better test than Petersham Hill, and one great advantage on the above-mentioned hills is that a clear view can be had of the entire course from any part of the rise.—Yours truly,

E. J. COLES.

MECHANICAL FLIGHT UP TO DATE.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—In answer to the letter of Mr. A. C. E. Whittard in your issue of February 1st, re the function of the tail in soaring birds, the equivalent of the bird's tail in an aeroplane system is the horizontal rubber or Penaud "planophore" (invented by the Frenchman Penaud in 1871), which, by the action of the impinging air, corrects any deviation of the aeroplane from its normal line of flight. Mr. Sidney H. Hollands will probably deal with this in the course of his interesting articles. A full explanation of this device will be found in Chanute's work "Progress in Flying Machines," on page 118. Although it appears to act more or less satisfactorily in models, yet most aviators hold that it consumes too much power in the constant readjustment of the stability, does not, in a full-sized machine, act quickly enough to prevent disaster, and therefore does not solve the problem of automatic equilibrium. Lateral stability, as Mr. Hollands has often pointed out, can be secured by placing the supporting surfaces at a diedral angle, but longitudinal stability appears to be still an unsolved problem.—Yours truly,

HERBERT F. LLOYD.

THE STIRLING CARS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Will some of your readers who have had experience of above cars kindly let me have, through your columns, their opinions as to their hill-climbing abilities, and also the brake power? I will be much obliged for any information from those who have used the Stirling cars.—Yours faithfully,

J. T.

FRANCE COPYING ENGLAND.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Replying to the letter from Mr. Anthony Westlake, in your last issue, it is very evident that for some reason this gentleman does not wish it to be clearly proved that England has been in advance of France in at least some few directions. My answer in your issue of the 1st inst. was a clear statement of fact, and as Mr. Westlake tries to somewhat obscure the truth I will answer his points categorically, and also suggest that a competent person should be appointed to examine my documentary

proofs. My information is all first-hand and of my own knowledge; Mr. Westlake's is only something that he has heard of. His own powers of observation are evidently not good in the direction of distinguishing aluminium-jacketed engines, when he says that he admits having seen one of my cars, but did not notice that it had aluminium jackets. I can easily prove that it was never fitted in any other way. Firstly: The year 1900 saw the first appearance of the Napier motor-carriage, but Mr. Westlake, if he peruses the automobile papers, knows perfectly well that the Napier engine was made and was in use on the road eighteen months prior to this, and as the only point under discussion was the engine, why should he drag in the car, which has nothing to do with the case? Secondly: He admits having seen a 16-h.p. Napier, and does not recollect that it had an aluminium jacket. We have never made a four-cylinder engine without an aluminium jacket, and both mine and Mr. Mayhew's, which I believe were the two first 16-h.p. Napier cars made, were fitted with an aluminium jacket. The statement that Mr. Mayhew's was not so fitted is incorrect. With regard to my suggesting that the car on which I competed in France in 1900 had an aluminium jacket, certainly I mean exactly what I said, and that is, that it was fitted with an aluminium jacket, and never was made or fitted in any other way. In regard to the straight valve stems on the modern vertical engine, these were embodied in the Napier in 1898.

This defeats the various statements of Mr. Westlake's, except on the question of power for weight in reference to what we term our 50-h.p. engine. I notice even on this point Mr. Westlake has begun to weaken, and now wants to compare the Napier car complete which competed in the Paris-Bordeaux race. Even on this point I am willing to compare if it is of interest, providing he will produce a certified copy of the weight of the Mors car and a certified copy of the horse power. It seems to me that he is rather inclined to hold a brief for our French friends, and I hope he will agree to an unbiased person holding the scales in the matter, and publishing to the world the actual truth. My facts are ready as soon as he has some.—Yours truly,

S. F. EDGE.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I notice in the discussion re "France copying England," in your issue of last week, that Mr. Anthony Westlake states that according to his recollection my 16-h.p. Napier had not an aluminium jacketed engine. This, of course, is quite incorrect, as anyone knows who saw the car and can recognise aluminium when they see it. It had an aluminium jacket, and I have never owned or seen a Napier engine without it.—Yours faithfully,

MARK MAYHEW.

COST OF MAINTENANCE.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—The following extract from a weekly paper has just been shown me:—"A 5 to 12 h.p. motor-car will cost its owner £480 to keep. The sum has been put at £200, but the former is more reliable. You must allow £100 for tires, £100 for the conductor, £30 per year for lubricating oil, and the rest for paraffin, insurance, sinking fund, taxes, rates, and so on."

Now, I do think it is a pity that editors, however ignorant they be of motor matters, should allow such utter nonsense to appear in their papers, for not only is it prejudicial to the industry, but at the same time it brings their paper into ridicule. £30 for lubricating oil, forsooth! £250 for paraffin (!), insurance, etc. £50 per year should be a liberal allowance for tires, another £50 for the man, £3 for lubricating oil, and £20 would certainly cover insurance and taxes. This brings us to a total of £123, leaving a balance of £357, out of which petrol must be taken, which, of course, is a variable quantity, governed only by the distance run. Possibly the editor had a vague idea of police persecution, and put on the odd £300 to cover the same.—Yours truly,

MAWDSLEY BROOKS.

THE WYDT'S ALLUMEUR ELECTRO-CATALYTIQUE.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Your Paris correspondent, "Automan," recently described a new sparking plug, "Wydt's Allumeur," and as this is now on sale in England, it would be interesting if any of your readers who have tried it would send their experiences. If it does all that is claimed for it, it is nothing short of a revolution. It sounds incredible that the coil, accumulator, make and brake devices, can be abolished at one stroke. A recent letter from one of your correspondents suggested that there was no means of advancing and retarding the ignition, but I find that the English agents claim that this has been accomplished.—Yours faithfully,

ARTHUR GUEST.

AN INTERESTING QUERY RE LOSS OF POWER.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Seeing the recent letters about the York Boyer cars, I should like to add a few comments myself, as the owner of one of them. The car (or rather voiturette) is well designed as a whole, and would be a very satisfactory one also in work if the makers were more careful in certain matters of detail. It is, however, in connection with the ignition that I propose to trouble you, as that has been the subject previously referred to. The contact-spring being a very stiff one requires considerable force to bend it, even when the whole length is free, and this force is greatly increased as soon as its elastic length is (about) halved by the meeting of the contact

points. Of course the adjustment may be supposed to be so exact that the moment of contact coincides with the extreme push of the cam, but such mathematical nicety cannot usually be obtained. The practical result is that the force applied to the spring causes the nib against which the cam acts to be rather rapidly worn away, which in turn involves annoyingly frequent attention to the contact screw. This screw itself, also, has to bear great strain when the spring is forced against it, and has therefore a natural tendency to get loose.

I always consider that the motor should start, all cold, at the second or third turn of the handle, and at the first or second turn after running for a time, and I give great attention to the adjustments in order to secure this, but notwithstanding all my care, the ignition is very apt to fail quite suddenly, without apparent cause, and always in the most public place of the town I may be passing through. Mr. Wolstencroft's reply to a former correspondent does not appear to help in such a case as mine. I should add that the dry battery originally supplied with the car turned out almost useless, and had to be promptly replaced by another make. The compression tap, too, did not long remain tight. I do not wish, however, merely to find fault, but should like to suggest a possible remedy. Why could not a simple commutator be used instead of the present arrangement, but made to work in an oil-tight (and therefore oil-free) case, so as to avoid the trouble met with in this style of contact-breaker by the surfaces becoming fouled and greasy?—Yours truly, C. L. C.

MR. SIDNEY HOLLANDS writes:—"With regard to Mr. A. C. E. Whittard's letter with reference to there being no mention in my aeronautical contributions of the tail of a bird being used for soaring purposes, it is still early in the series, and I promise him that I shall have more to say about birds in later chapters. I may say now, however, that as far as we can determine by observation and experiment, the chief end and aim of the bird's tail is to impart longitudinal stability to its owner and to preserve the same in all vicissitudes, among which latter are those evolutions described by Mr. Whittard."

THE AUTOMOBILE MANUFACTURING COMPANY.

THE petition of the Clipper Pneumatic Tyre Company, Limited, for the compulsory winding-up of the Automobile Manufacturing Company, Limited, came before Mr. Justice Byrne last week. Counsel for the petitioners submitted that he was entitled to a compulsory order. The order was opposed by the debenture holders on the ground that they had a charge over all the assets of the company and that no useful purpose would be served. The petitioners submitted that the claim of the debenture holders was, under the circumstances, a fraudulent preference. After some discussion it was admitted that the first debenture issue was void by reason of non-registration within fourteen days, and his Lordship then went into the question whether there was sufficient ground for making a *prima facie* case of fraudulent preference. In support of the petition counsel said that the Clipper Pneumatic Tyre Company, Limited, was a judgment creditor of the Automobile Manufacturing Company, Limited, for £257 for goods supplied in June, 1901. On August 24th following, after having from time to time pressed for payment, they issued a writ and obtained judgment on September 19th. The first debenture was given to the directors of the Automobile Company on August 12th, at which time the petitioners were pressing for payment. It was given in favour of four of the directors of the company, but nothing was done with it as required under the Companies Act, 1900. On September 20th a second debenture was substituted for the first and duly registered, and this was the debenture under which the assets of the company were claimed against the petitioners' judgment. As a matter of fact, Jordon did sell the company's goodwill for £100, and it was said that there was an action pending to set aside that sale and redeem Jordon's loan. He submitted that the transaction of the directors was one that should be investigated in the interest of the shareholders.

For the Automobile Company, counsel submitted that the debenture, having been given in accordance with a resolution passed to secure an overdraft at a time when the company was flourishing, could not be challenged on the ground of being a fraudulent preference.

Mr. Justice Byrne, in giving judgment, said there was no doubt that the company were in that condition of solvency which did not enable them to meet their judgment debts. An order would have been a matter of course but for the contention on behalf of the debenture holders that the amount due to them was such as to exhaust all the available assets of the company. To that the creditors replied that these debentures were bad, as being a fraudulent preference. He could not say that this contention was one that might not have a fair chance of success, and he was of opinion that there were circumstances connected with the company which required investigation. Considering all the circumstances of the case, he was not satisfied that a winding-up order would be injurious, or, if injurious, so injurious as to induce him to say that the plaintiffs had lost the rights which they otherwise would have had. He therefore made an order for the compulsory winding up of the company, with the usual order as to costs.

FURIOUS DRIVING CASES.

At Barnet Petty Sessions, Sir C. B. Lawes, of Rothamsted, Harpenden, Herts, was summoned for furiously driving a motor-car in the parish of Ridge on January 10th. Mr. Lewis Stroud, solicitor, pleaded "Not Guilty" on behalf of defendant. The evidence of two roadmen in the

employ of the Hertfordshire County Council was to the effect that on the afternoon in question they saw a motor-car, driven by Sir Charles Lawes, coming down the St. Albans side of Ridge Hill at the rate of about thirty or thirty-five miles an hour. When it got to the bottom it met a trap, the horse attached to which shied, but though there was plenty of room for the car to pass, it came into collision with the trap and badly damaged it. Police-constable Shorter stated that when he was on duty in London Colney on January 10th, he was stopped by Sir Charles Lawes, who informed him that he had had an accident while driving down Ridge Hill. He handed witness his card, and asked him to tell the gentleman whose trap he had damaged that he was very sorry, and would pay all expenses. When witness first saw Sir Charles he was driving at the rate of about ten or twelve miles an hour. Sir Charles Lawes gave evidence, and said that when he was driving down Ridge Hill he saw the pony and trap coming towards him; but the animal seemed perfectly quiet, and to take no notice of the car. When, however, he got close to it, the animal shied, and backed right across the road. Witness immediately let the brakes go—his only means of avoiding a collision—and in about the tenth part of a second he would have done so, but his splash-board, unfortunately, caught the wheel of the trap. Witness did not stop then, because on such occasions one did not know what sort of people one was going to meet, and they might want to fight; but when he met the police-constable he informed him what had occurred. On the following day the owner of the trap called on witness, and witness suggested to him that he might have avoided the accident if he had whipped the mare up, and he replied that he did not think of that. The magistrate fined Sir Charles Lawes 40s., with 8s. 6d. costs, the maximum penalty under the section under which the summons was taken.

EDWARD ARNOTT, of Northampton, was summoned for furiously driving a motor-cycle along Waterloo (Northampton), and also for not having a lighted lamp attached to the vehicle. Police-constable Tarlton deposed to seeing defendant at 9.40 p.m. on the 31st January riding a motor-cycle at a furious pace. There was no lighted lamp attached to the cycle. After going 260 yards defendant got off the cycle and lighted the lamp, and went over the ground again, but the lamp went out immediately after he started on the second journey. Defendant went a distance of 260 yards in 15 seconds, and witness told him he had been riding at 20 miles an hour, but the rate worked out at about 35 miles an hour. Defendant was fined £1 and costs in each case, and the Bench intimated that furious driving could not be allowed. If the offences were repeated heavier penalties would be inflicted.

At Hythe, Herbert Charles Burton, of Hill Street, Berkeley Square, W., has been fined £10 and costs for driving a motor-car at the alleged rate of 45 miles an hour on the 19th ult.

THE Norman Cross magistrates have fined Mr. Claude Johnson £5 and costs for furiously driving a motor-car. A constable swore that he timed the defendant, and found that he was going twenty-two miles an hour.

A MOTOR-CAR ON THE PATH.

C. J. SCARRISBRICK, of the Royal County Theatre, Reading, was summoned for driving a motor-car on the footpath at Earley on January 13th. Police-constable Harris proved seeing the defendant drive his motor-car on the footpath for a distance of 400 yards. Fined 20s. and 14s. 4d. costs.



THE NEW WESTON VICTORIA STANHOPE (see last issue).

A NOVEL POINT.

CHARLES PERKINS, of the Aegir Cycle and Motor Works, Gainsborough, has been summoned under the Locomotives Act, 1865, that he, being the driver of a locomotive on the Corringham Road, did not give as much space as possible to approaching vehicles, and neglected to render assistance. Mr. Tweed, who defended, urged that the locomotive in question, a steam lorry, could not be dealt with under the 1865 Act, inasmuch as, being under four tons in weight, it was a light locomotive. The chairman said it was hardly reasonable that because there had been a Light Locomotives Act, which laid down new regulations, the Act of 1865, which applied to all kinds of locomotives, should not apply to the proper using of the highway. The 1896 Act was passed for the purpose of relaxing restrictions, but the obligation to use the highway properly still existed. If it was a question of using the highway with due consideration for other people it applied equally to light and heavy locomotives. Until Mr. Tweed could show that the Act of 1865 was repealed in that sense his contention would not hold good. Mr. Tweed maintained that there was direct repeal of the earlier Act; and on reference this was found to be the fact. Consequently the summons for neglecting to render assistance to passing vehicles fell to the ground, and the case was confined to the second charge—neglecting to draw to one side, in order to give approaching vehicles their due proportion of the metalled part of the road. The defence was that due allowance

engineers and builders of motors and every description of machinery. The directors are Messrs. H. S. Gledhill and W. E. Netherwood, and the registered office is at Temple Street, Lindley, Huddersfield.

THERE will be a gathering of motorists at Bexhill-on-Sea on Saturday, the 1st prox., when a private road will be examined, which, it is thought, will be suitable for a kilometre speed trial during the summer. The Sackville Hotel will be the headquarters of the Automobile Club on the occasion, and some of the members will start from Whitehall at noon, taking lunch on the way down to Bexhill.

THE Glasgow Cycle and Motor Show was opened on Friday last week by Mr. J. B. Dunlop. A large part of the exhibits consists of motor-cars and cycles, among the former being the Albion, Argyll, Humber, Daimler, De Dion, Panhard, Wolseley, Progress, Gladiator, etc. The Sixth Annual Cycle and Motor Show at Manchester was also opened on Thursday, the 13th inst. Here,



THE MOTOR MANUFACTURING CO.'S ONE-TON DELIVERY VAN. (See page 899.)

was made for the passage of the vehicles, but several farmers gave contrary evidence, all stating that they had to turn on to the grass. The Chairman said these locomotives would have to be adapted to do the same, and a fine of 40s., with £1 14s. 6d. costs, was imposed.

AN American motor-car designer considers that it may be taken as a safe rule that the wheel base in inches shall be double the speed in miles per hour.

"UNLIMITED, LIMITED," is the title of a new company registered with a capital of £10,000 to carry on business as "a land development company, as motor-car builders, as dentists, and general store keepers."

It will be remembered that the A.C.G.B.I. recently offered a prize of £5 for the best design of a Club plaque to be fixed to hotels, etc. The selected design is that of Mr. Berne Nadall, to whom the prize has been awarded.

THE Vulcan Motor and Engineering Company, Ltd., has been registered with a capital of £1,000 to carry on business as

too, a large number of motor-cars and cycles are to be seen. Of cars, specimens of the Marshall, Argyll, Progress, Locomobile, etc., are on view, while among the motor-bicycles are the Humber, Quadrant, Bradbury, Werner, Royal, Riley, and others.

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COMMENTS.



POLITICIANS are becoming increasingly interested in the automobile. On Saturday last we saw Mr. Arthur J. Balfour, the Leader of the House of Commons, in a great fur-edged leather coat gravely contemplating the mechanism of a higher-powered car than that he has previously driven, and there is reason to believe his automobile education will soon be completed by the study of a Napier car of nine horsepower. Lord Rosebery, too, is interested in motor-vehicles, and in the course of his peripatetic oratorical feat at Liverpool on Saturday made merry over the Derby. Addressing the members of the Stock Exchange there he said "if one is to win the Derby again it must be done soon, because no one can shut their eyes to the encroachment of the motor-car and motor principles. The horse is gradually being superseded, and it may not be long before you see the great Olympian gathering on Epsom Downs confined to chariots on electric principles. It will not then be my destiny to win that race, because I should remain faithful to the horse." We congratulate Lord Rosebery on his faithfulness to the horse, and would assure him that such faithfulness is not inconsistent with the favour which he has shown to the automobile as a pleasure vehicle. Baron de Zuylen is one of the keenest automobilists, and has also the finest racing stables in France. In this country, too, men combine a love of horses and a pride in automobiles. So Lord Rosebery need have no fear.

Resignation of the Hon. Sec. of L.S.P.T.A.

THE Council of the Liverpool Self-Propelled Traffic Association have received, (with a regret that will be expressed throughout the whole automobile movement) the resignation of Mr. E. Shrapnell Smith from the office of hon. secretary, which he has filled with credit to himself and advantage to automobilism for the last six years. "During that time," he writes to the Council, "my business connections have been in connection with the alkali industry, and this independence of commercial interest in the motor industry has, in my opinion, contributed largely to my acceptance by all who have at heart the progress and development of heavy motor traffic." Then Mr. Smith goes on to refer to the fact that he has become manager and secretary of the Road Carrying Company, Limited, which he has formed himself by private subscriptions—£18,000 having been already subscribed, mainly by Liverpool gentlemen.

Success to Mr. Shrapnell Smith.

"UNDER these circumstances," he writes, "I regard it as a point of honour that I should resign a position which places in my hands much important correspondence and various powers which rightly belong to the office of hon. secretary of a centre of the Automobile Club." Everyone will respect Mr. Shrapnell Smith's scruples, but, although his interest in the

work will be as active as heretofore, the loss of his organising power and the devotion with which he carried out the work of hon. secretary will be felt, not only in the North of England, but throughout the country, so far as heavy motor traffic is concerned. While expressing the regret that will be generally felt we would add a word of encouragement to him in his new undertaking, to which every automobilist will wish well.

Motoring as a Health Restorer.

AT a time when open-air sanatoria are attracting attention in medical circles we may be pardoned for urging the value of the automobile as a health restorer. The subject is certainly worthy of medical study, and may be expected ere long to occupy a place in the programmes of the medical congresses. Several French doctors have been very enthusiastic in their advocacy of the health-giving virtues of automobilism, and Dr. Marion, of the Paris Faculty of Medicine, reports the case of a patient suffering from an attack of asthma who gained relief by a ride upon a motor-car. Two patients who had lately recovered from congestion of the lungs and were still suffering from a feeling of oppression in breathing found great benefit in the same way. In his own case a troublesome cough, the legacy of a former attack of dry pleurisy, was relieved by motoring. It would be interesting if our readers would give the results of their own observations as to the effect of motoring on the health of their friends and themselves.

One Sidedness.

MANY motorists have been troubled by the refusal of chains to stretch equally on each side, an annoying state of affairs that is made worse by any attempt at adjustment that throws the countershaft and back axle out of parallelism with each other. The difficulty has generally been attributed to a natural impossibility in turning out a pair of chains of exactly equal ability to resist wear. But it will generally be found that the right-hand chain stretches most, and some light on the subject may be given by the somewhat similar behaviour of springs. It has been our experience, corroborated by that of other drivers, that springs more frequently break on the right side than the left, and a simple and probable explanation offers itself: the real *fons et origo mali* is, the hay-motor! The centre of a road is usually in a much worse state than the sides, owing to the destructive effect of horses' hoofs, and the rule of the road causes us to drive habitually somewhat towards the left; thus the right-hand chain is apt to get more dust and dirt thrown on it, while, owing to the greater roughness of the surface on that side, it is doing more work in pulling its wheel; the differential, though equalising the total effort, not compensating for the jolts and sudden strains. Moreover, when going over stones, the right wheels get the worst of it as a rule. Tires also give some confirmatory evidence of this view, which, if correct, should hold good in the opposite sense on the Continent, where the rule of the road is reversed. Perhaps

some who have had Continental experience could throw additional light on the matter.

Unbalanced Strains.

IN more or less connection with this, it may be observed that a very appreciable one-sided strain comes on the frame of any car of the usual type with a longitudinal engine shaft, obviously tending to twist the front of the frame in a sense the reverse of the direction in which the engine rotates, and the countershaft, or back axle, if a direct-geared live one, in the same direction. This would throw a greater strain on the off-front and near back springs than on the other two, and while perhaps negligible in solidly-built cars, may prove by no means so as the progressive lightening of the light car increases along with the power of its engine.

An Amateur's Car.

IN our issue of the 8th inst. we reported a curious case at Sheffield, where a local motorist was summoned first for causing an obstruction, and secondly for leaving a car without a light. It appeared from the evidence that the car had broken down, and was simply left while the motorist went in search of assistance. Mr. W. R. Wills, the motorist in question, writes us



as follows:—"I enclose a photo of the particular car, which was designed and made by myself at Messrs. Vickers, Sons, and Maxim's works, though not in connection with that firm. The stoppage was due to an inlet valve-stem giving way, and as I had not got a spare one, it entirely stopped the engine working. The car is a very good hill climber, and has gone up a gradient of one in six. It may be of interest to mention that it was finished before I was twenty-one years old, and is entirely of amateur construction." The photo reproduced herewith shows the builder at the wheel. The engine is of the horizontal slow-speed type, and of $5\frac{1}{2}$ h.p. Two speeds are provided, the power of the motor being transmitted to the countershaft by means of chains and clutches. The motor is located in the rear of the frame, the petrol and water tanks being located under the front bonnet.

American (?) Humour.

IN the financial columns of a New York journal we have just read one of the most humorous accounts of the "scientific and perfect solution of the automobile problem" that has yet come to our notice. It deals with a company that is to bring the Tractobile to the notice of an astounded world, and already "an offer of 2,500,000 dols. for the English patents has been practical demonstration that the market for the machine is world-wide." The Tractobile is being sold to the trade, after deducting all discounts, so as to realise 450 dols. for the company on each machine. The maximum cost of manufacture will be

150 dols., and as the capacity of the works is 2,500 machines per annum, the profits will be 750,000 dols. Hence the offer of 100,000 shares at 6 dols. each should be quickly taken up by wide-awake American investors.

The Tractobile.

BUT the demand will be for more than 2,500 machines per year, and so additional plant has been ordered for April 1st—a most appropriate date. The Tractobile is a wonderful affair—the eighth Wonder of the World. It can be attached to any carriage or wagon, and will draw it without the help of horses or mules—although the assistance of monied donkeys will be welcomed to help the construction of 2,500 Tractobiles a year. The business is under the direction of the president of a dry goods company, but the writing of the prospectus savours of the tone and style of one who is well acquainted with that section of the public that delights in speculating in uncertainties. It has, in fact, a Penningtonian flavour.

Motor-Cars for Hotel Work.

SOME enterprising hotel proprietors are proposing to engage one or two cars, with drivers, for the summer and tourist seasons. This is interesting, as forestalling a time when the motor-car will be as necessary a feature of hotel equipment as is the lumbering station 'bus that has done service for so many years. The value of the motor-car in this connection must be a substantial one, and we shall be pleased to record any developments of the kind that may come to the notice of readers.

The Poetry of Motion and the Art of Expression.

SOME writers of advertisements in the United States combine a keen appreciation of the automobile with a florid style of expression. The following is a fair sample:—"The exhilaration of bubbling along buoyantly upon a little sprite, at will, flying fast enough for the most daring, or creeping slow enough for the most cautious, the steady and regular momentum, the wonderful ease of control, the enchantment of distance without muscular effort, the ever-changing view, the rush of keen air—begets new sensations of pleasure and excitement not possible from any other source. The motor itself is an interesting study; it has a language of its own, soon interpreted by the thoughtful rider. It will cry and labour for more oil, it will snap and snarl if you foul its sparking plug with too much oil, it will thunder at you, and finally refuse to work if you stuff it with too much petrol or oil. But when you have learned to feed and groom it properly, which can soon be done, it will bound merrily along, singing its song of joy in unmistakable language, up hill and down dale, like a thing of life, the very poetry of motion."

Good Roads to Prosperity.

As a general rule we believe the County and Borough Surveyors of the country are anxious to maintain the roads in the best possible condition; but their efforts are often sadly hampered by the fits of economy to which public bodies are subject. And yet the maintenance of a good highway is becoming of increasing importance to the people of rural districts. If the roads are good, motorists will be found thereon; if they are bad, drivers of automobiles will shun them as they do the country lanes of Surrey, to the sorrow and regret of the innkeepers of that delightful county.

Retarding the Industry.

ONE has only to watch the development of the motor-car to recognise that the laws of this country have been framed with an extraordinary capacity for strangling new industries. We practically forbade the use of the motor-car until Continental countries had thoroughly installed themselves as leaders in its manufacture, and then we thwarted progress by

allowing rules and regulations which their author has now declared to be antiquated and unnecessary, But the spirit of restriction has not stopped with the central authorities; it has permeated all local rulers, with the result that prejudice is permitted to place every obstacle in the way of the new idea. The fact that so many members of the Government are automobilists should be sufficient to demonstrate that the automobile is no mere plaything of the hour. Why cannot the *fiat* go forth that the ways of the motorist are to be made easy by the perfecting of the roads and the general agreement that riding to the public danger is an offence—without any regard to speed limits, which in that case would be quite unnecessary.

Motor-Cars for Industrial Purposes.

ousted by automobiles, just as they were ousted from the mail service by the railways long before the railroad service was as

THE comparison between horses and motor-cars is never one that can be dealt with in exact terms. Horses have been used, for example, for many branches of work for which they are very poorly adapted, and from these they may be

forward a bill making speed above the limits prescribed by the present law of New York State an offence punishable by imprisonment, and so serious is the support which he has obtained that emergency meetings of the Automobile Club of America, the Clubs of Buffalo, Syracuse and Long Island, and the National Association of Automobile Manufacturers, have been held to discuss as to the action to be taken. Evidently the situation is somewhat strained, and angry discussions in the Senate will be the least serious result of the agitation.

Delivery Vans.

SURELY it is nearly time that makers of automobiles began to seriously cater for the tradesmen and business firms interested in the delivery of goods. There is a fascination about the pleasure car which has diverted many makers from all thought of such commonplace matters as delivery vans. Talking to a manufacturer lately, we were told that he entered the industry with the idea of developing a trade in light vans for commercial purposes; but he found the immediate demand was for



Photo by] EN ROUTE TO THE WELBECK BRAKE TRIALS—TIRE TROUBLES AT REDBOURNE.

[Mr. C. Frisw. O.]

perfect as it is to-day. Automobilism will naturally attack its utility work first at the points where horse service is weakest. Then, by slow degrees, it will enlarge its sphere, growing gradually to greater perfection by adaptation to the more and more severe tasks imposed upon it. Understanding of automobile mechanism will spread at the same time among the public; men fitted to take care of motor-cars will become more numerous and less exacting; and after a decade or two it will be found that automobiles may be substituted for horses without subsequent disappointment, even if no other factors are considered by the purchasers than reliability and economy of the machines as machines.

The Prison for Speedy Motorists.

So far the antipathy expressed towards automobilism in this country has come from pettifogging local authorities and rural councillors of slow movement and near-sighted view. In the United States, however, it would seem that more powerful influence is about to make an attack on the motor-car, and in several of the State Legislatures bills of a very reactionary character are about to be introduced. Senator Cocks proposes to bring

touring and pleasure cars. Consequently he paid attention to that branch, and soon forgot the idea with which he set out. Of course, in the present transition stage, such changes of ideas are pardonable, and possibly warrantable, but it must not be forgotten that in catering for commercial vans makers will find a wide and remunerative field of employment in the future.

Motor-Cars for Fire Brigades.

Of the practicability of the automobile in connection with fire brigade work the chief of the New York fire department has no shadow of a doubt. He often has alarms of fire at night, and can then cover the distance at a rate of thirty miles an hour when the streets are clear. In the daytime there is also a great saving of time. He has just ordered a specially-built car from the Locomobile Company, which will embody one or two new ideas. It will have a heavier frame than is usual in steam-cars, a long wheel base, and heavy wheels fitted with 3 in. tires, these latter being regarded as better for block and other rough pavements than the smaller tires. The engine will be of 16 h.p., with a 36 in. boiler, carrying a steam pressure of about 300 lbs. per square inch. Steam is to be kept up at night by a

similar attachment to that of the steam fire-engine; that is, an automatic pipe connection which comes from a large boiler in the basement of the engine-house up through the floor into an upright position, and is placed in such a manner that when the carriage is backed into position the pipes interlock, giving a tight connection. When an alarm is sounded all that is necessary in order to start is to turn on the petrol, which will be lighted by an electric spark. As the machine starts the pipes from the large boiler disconnect automatically and close the cocks, preventing nearly all escape of steam from either the machine or the large boiler in the basement.

Motor Omnibuses for London.

AFTER several vague references to mechanical traction at meetings of the London omnibus companies, it is satisfactory to learn from the speech of the chairman (Mr. J. H. Moore, J.P.), of the London Road Car Company, that experiments are about to be undertaken with a view to the general adoption of motor omnibuses, should they prove cheaper than horse traction. The cost of feeding a horse is now 9s. 3½d. a week, as compared with 7s. 10½d. in February, 1896. Interviewed after the meeting, Mr. Moore said that experiments were in active progress, and that a steam 'bus is shortly to be tried on the Hammersmith to Oxford Circus route. There was no question as to the ability of motor 'buses to do the work required, but the point in doubt was whether they would not be subject to greater depreciation than the present system.

Another Victory.

THE Surrey campaign against steam cars has received another set-back by the dismissal of a case—similar in character to the previous ones—by the Guildford Bench on Saturday last. The severe and well-deserved comments of Mr. Staplee Firth on the methods adopted by the prosecution—which included the introduction of alleged occasions of offence not mentioned in the summons—produced an evident effect, while their disgust at their inability to burke a reference to the eight cases already decided in favour of automobilists was amusing to witness. It is sincerely to be hoped that the final *coup de grace* has been given to the ill-advised and malicious persecution of steam-car owners, which has done much to keep them off the Surrey roads, to the detriment alike of the motorists and those who benefit by their custom.

Motor-Cycles.

THE increased interest now being taken in motor-cycles is most encouraging to makers of this type of automobile. In the forthcoming Badminton book on Motoring a chapter will be devoted to this branch of the subject. This has been written by the Editor of the *Journal*, and was read on Wednesday at a meeting of the Automobile Club. The space allotted for the chapter on motor-cycles is rather restricted, but the paper not only gives some useful hints to motor-cyclists, but presents a lucid view of the distinguishing features of most of the motor-bicycles now upon the market. The chair was taken by Professor C. Vernon Boys, F.R.S., and, in the unavoidable absence of Mr. Cordingley, the paper was read by the Club Secretary. An interesting discussion ensued, in which Messrs. Campbell Swinton, Pennell, Edge, Jarrott, Phillips, and others took part. Mr. Pennell strongly advocated the use of high-powered motors on bicycles, but the general feeling of the members present was that engines of 1½ h.p. would be found to give the best results to ordinary motor cyclists. Professor Boys, in responding to the vote of thanks for his occupation of the chair, pointed out that the motor-cycle had an important future from an automobile educational point of view, and considered that the A.C.G.B.I. should do all in its power to encourage motor-cycling. After the House Dinner of the Club on Wednesday, the 26th

inst., a paper on "Electrical Vehicles" will be read by the Editor of the *Automotor*.

Licensing Motor-car Drivers.

MR. HENNIKER HEATON, M.P., has given notice that he will, in the House of Commons next week, ask the Home Secretary, "whether his attention has been called to the danger of incompetent persons driving motor-cars in this country; whether he is aware that in America motor-car drivers have to obtain a certificate under examination as to competency, and whether the Home Secretary will introduce a similar law in England."

M. Santos Dumont.

SANTOS DUMONT'S experiments in his No. 6 navigable balloon have come to a sudden standstill in a manner which might have been anticipated. The story of his accident resembles faithfully the stories of the series of mishaps which the plucky young man has gone through. The air vessel was not properly filled, plunging took place, the rudder got entangled in the rigging, the valve had to be opened, the envelope burst, and down came the ship. The only variation in the story is that the sea received the *débris* instead of the housetops of Paris or Baron Rothschild's trees. As usual, rescue was at hand, and M. Santos Dumont, imperturbable as ever, and up to his neck in the Mediterranean, calmly gave orders for the salvage of himself and his air-ship. An imprudence in staying too long in his wet clothes, directing operations from the bows of a friendly yacht, has sent him to bed with a severe cold; but, as usual, No. 6 is already being repaired for new ventures. We believe that M. Santos Dumont will now wisely confine his attentions for the present to overland flight, and leave the ocean alone until he is more sure of being able to avoid these recurring disasters.

THE Niagara building in London, which, as we have already announced, has been acquired by Mr. Paris Singer, will accommodate about 800 electrical carriages.

A SUM of £15,000 is included in the German Budget for 1902 for the continuation of the experiments with motor-vehicles for military purposes.

M. JENATZY, on the 14th instant, covered a kilometre, with flying start, on his combination petrol electric car in 34.25 seconds, being at the rate of 105½ kilometres, or over 65½ miles per hour.

AT the Coronation exhibition held at King's Lynn Messrs. W. Bath and Son exhibited two of the M. M. Co.'s cars—one a 12-h.p. car with tonneau body to carry six. Messrs. W. H. Johnson and Sons made a good show of De Dion vehicles.

M. S. DUPONT, of Plessis-Trevisé, near Paris, advises us that the East Riding Cycle and Motor Company of Hull are no longer agents for the Liberia cars in England, and that all inquiries regarding the same should be sent to the works in France.

THE Chemische Fabrik Helfenberg Gesellschaft, of Helfenberg, near Dresden, have sent us a sample of a spool of solutioned tape that they have introduced for the repair of small cuts in tires. The spool contains about eight feet of tape, and, as it occupies a very small space and is sold at a reasonable price, should be found a very useful addition to the toolbags of motor-cyclists.

MOTORISTS are warned that it is understood that the Inland Revenue intend to bring a test case against the first motorist they can detect who may make an error in stating what is the weight of his motor vehicle for the purposes of Inland Revenue. Owners of motor vehicles weighing under one ton, unladen, pay only the ordinary carriage licence of £2 2s., but if the vehicles weigh over one ton, £2 2s. extra has to be paid. If the Inland Revenue Office can discover a case in which the weight is given as just under one ton, whereas really the car weighs over one ton, they intend to prosecute.

THE DAIMLER 1902 CARS.

FOR the 1902 season the Daimler Motor Company, Limited, will make three standard types of cars—viz., 9 b.h.p., 12 b.h.p., and 22 b.h.p.—of which we are now able to give some particulars. Fig. 1 gives a view of the 12-b.h.p. tonneau, from which it will be seen that the frame—of wood, strengthened with steel fish-plates—is built lower than formerly. The motive power is supplied by a four-cylinder engine, running at a normal speed of 900 revolutions per minute. The cylinders and heads are cast in one piece, so that there is now no troublesome joint at the top. Both electrical and incandescent tube ignition are

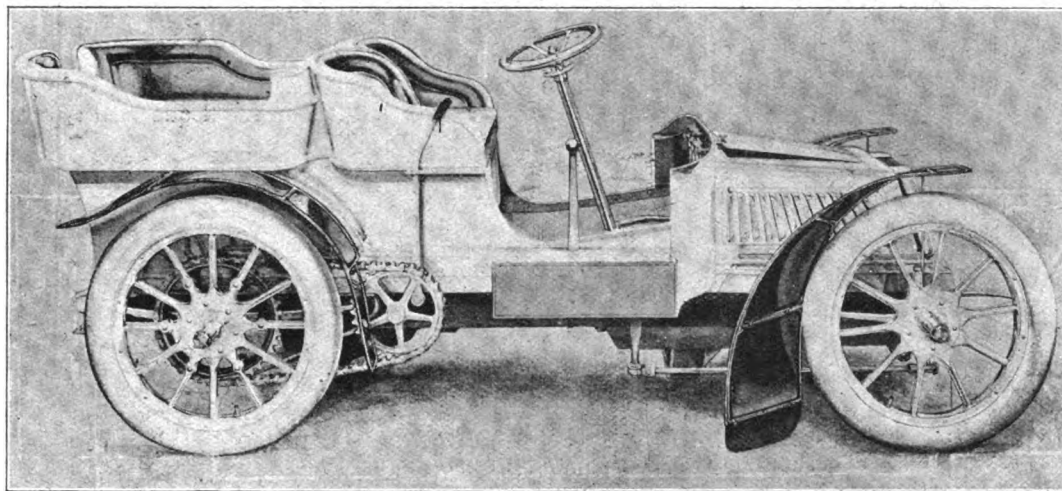


FIG. 1.—THE DAIMLER 1902-TYPE 12 B.H.P. CAR.

provided. As regards the former, the commutator is fitted in a dust-proof transparent case on the dashboard, while in connection with the latter only the pressure-feed system is now being employed. The sparking plugs are fitted in special firing boxes, so placed that the chances of the points of the plug becoming fouled by carbon deposit are considerably reduced. A gravity type of spray carburettor is employed, while the automatic governor is now arranged to act on the mixture supply, increasing or cutting off as desired the admission of gas to all four cylinders, which can thus be kept running quietly on a small charge of explosive mixture. The power is transmitted through a single leather-faced clutch to the gear-box, which is adapted to give three speeds forward and a reverse motion, all controlled by a single lever at the side of the car. A change has been made in the reverse motion. In the old types this was obtained by having two sliding bevel pinions on the cross-shaft, either of which, to give forward or reverse motion, could be brought into gear with the bevel wheel on the end of the countershaft. In the new arrangement there is only one fixed bevel pinion on the cross-shaft, and this is continuously in mesh with that on the end of the countershaft, the reverse motion being obtained by the interposition of a pinion between the pair of spur wheels giving the low gear. The clutch-shaft no longer slides to and fro with the clutch, but the latter moves forward and backward on its shaft. Furthermore, the two shafts in the gear-box are now located not

only parallel, but also in the same horizontal plane, instead of being one above the other, as in the former method. Special attention has been paid to the question of rendering all bearings dust-proof, and also to that of lubrication, a self-oiling arrangement being fitted to the bearings of the cross-shaft and change-speed gear-box, so that they only require attention about every three weeks. All four road-wheels are of equal size—32in. diameter, and adapted for 3½in. tires. Double-acting band-brakes are fitted to the countershaft and to drums connected with the chain-wheels on each of the rear road-wheels. Ample mud-guards are being fitted, and those to the front wheels are arranged so that they can be readily detached, to give access to all parts of the motor, when necessary. Another departure, small in itself, but

which adds much to the comfort of the driver and front passenger, are the rounded extended ends—somewhat on the lines of Mr. Estcourt's arrangement—given to the dashboard. Two sizes of this car are being built, one having a wheel base of 6ft. 6in. by 4ft. 1in., intended for four passengers, and one 7ft. 6in. by 4ft. 1in., for six passengers, the weight coming out at about 14 cwt. and 15 cwt., without bodies, respectively.

The new 9-b.h.p. cars follow exactly the same lines, and comprise the same features, as the 12-b.h.p. vehicles, the only difference being that instead of having a four-cylinder engine the motive power is supplied by a 9-b.h.p. two-cylinder engine, fitted with throttle governor and running at a normal speed of 900 revolutions per minute.

Fig. 2 shows the new high-powered Daimler car, which is fitted with a four-cylinder motor, developing 22 b.h.p. at a normal speed of only 750 revolutions per minute. This engine is fitted with automatic governor, acting on the exhaust valves, and a hand-controlled throttle on the gas supply. One lever controls the four forward speeds, while the reverse is actuated by a second handle. The road-wheels are all 36in. in diameter, while the

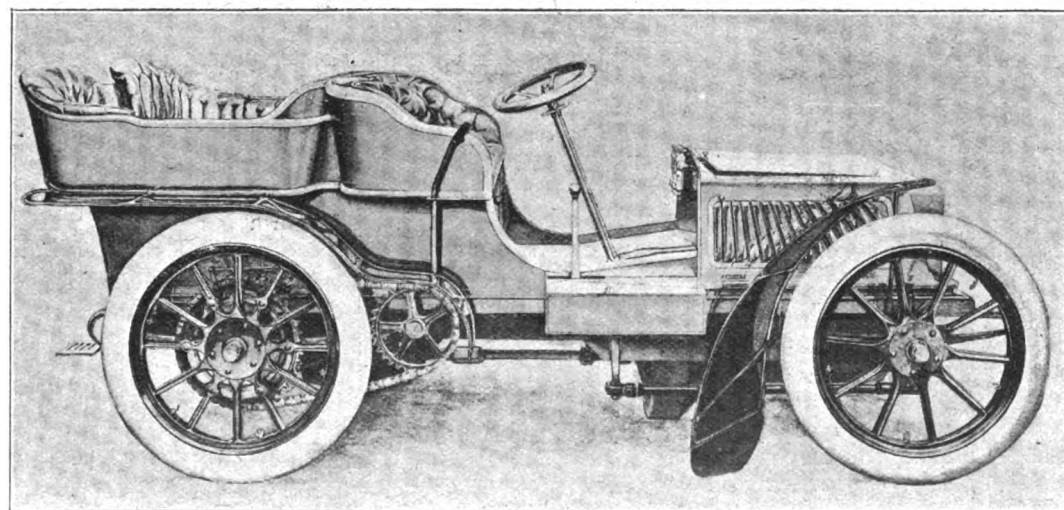


FIG. 2.—THE DAIMLER 1902-TYPE 22 B.H.P. CAR.

frames are made in three sizes—6ft. 6in., 7ft. 6in., and 8ft. wheel base respectively, by 4ft. 7½in. wheel gauge—for four, six, or eight passengers, the weight ranging from 21 to 23 cwt. In all other particulars the 22-b.h.p. cars comprise all the new features we have described above in connection with the 12-b.h.p. vehicles. Naturally, all can be fitted with various types of bodies as desired.

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THE "BROOKE" CAR.



IN entering the motor-car business the possession of a well-organised and self-contained establishment is a considerable factor in the ultimate success of the venture. And that being so, Messrs. J. W. Brooke and Company, Limited, are introducing themselves to the automobile industry with many advantages. At the Adrian Iron Works, Lowestoft, they have a modern and model works covering a ground area of 11,000 square feet, where 100 men are usually employed. The foundry is fitted with the latest appliances, while the two large machine shops with their galleries have a selection of modern machinery. The smithy contains six fires. The assembling shop is a building 113 feet long by 30 feet wide, and the utmost completeness characterises its arrangement.

Conveniently located and facing the Alexandra Road is another shop which is reserved exclusively for overhauling motor-cars, and during last summer five or six cars were frequently

cylinders are in one casting with a solid head. The engine is fitted with throttle governors and electrical ignition, and the Estcourt patent induction valves. The cranks are equally spaced and equal explosions are obtained in the two revolutions, so that the perfect balancing of the motor is ensured. Even at its normal speed of 700 revolutions per minute the running of the motor can hardly be detected when the car is stationary. In the first car made the motor is placed transversely on the frame, but it is the intention to turn it round to the front in the later cars. Power is transmitted to the gear-box by a Renold silent chain. In the gear-box an important advance has been made, gearing being done away with, except in the case of the reverse, which is actuated by spur wheels. The change speed gear is arranged by means of chains, thus reducing friction and, as was demonstrated on our trial trip, silencing the car to an exceptional extent. The absence of vibration is indeed a notable feature of the vehicle.

Three speeds have been fitted, these and the reverse being worked from one lever. Double acting brakes have been provided, and the steering is of the worm and quadrant type fitted

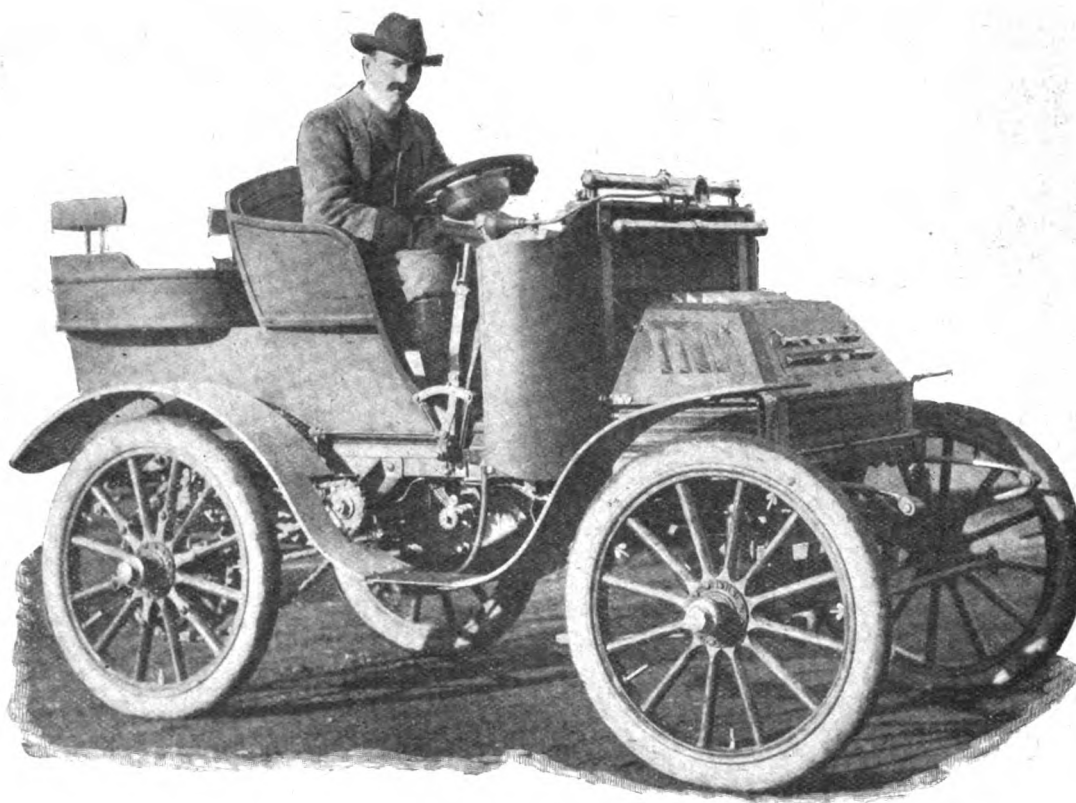


FIG. 1.—MR. MAWDSLEY BROOKE ON THE BROOKE CAR.

seen in the place at one time. At one end is a long pit for the examination of cars, and at the other is a main switchboard which contains a charging apparatus for accumulators. In the centre are large entrance gates, which are convenient for the entry and exit of cars.

With such facilities for the rapid production of any new notions as they occurred to him, Mr. Mawdsley Brooke has had many advantages in the production of a new motor-car, upon which we recently had an enjoyable spin to Yarmouth. The car had previously had only one trip, and on its second venture it did splendidly, coming back in remarkably good time and without a stop. Since then longer journeys have been made and the car has fully maintained the original good impressions.

The frame of the Brooke car—for that is the name by which the new vehicle is identified—is fitted to take either a phaeton or *tonneau* body, and although the car, as illustrated, may appear somewhat high, it is the intention of the makers to have a frame about four inches lower and eight or ten inches longer in subsequent cars. A special feature of the car is the three-cylindered motor of 10 h.p., developing 11 h.p. without difficulty. The

with a Brooke patent wheel with the receptacle below the circumference of the wheel. The electric ignition and the governor are controlled from the steering pillar. An accelerator pedal is also part of the fittings in the front of the driver. A special point has been made of the lubrication, and in the front of the driver is an arrangement showing eight glasses, each conveying oil to different parts of the mechanism—thus ensuring efficient lubrication all round. Mr. Estcourt's cooler is fitted to the car, being modified to such an extent that it forms a slightly addition to the vehicle. The weight of the car is about 16 cwt., and the wheels are all of one size, viz., 36 in.

Messrs. J. W. Brooke and Company intend to standardise the various parts so that replacements can readily be obtained. They will be able to add to the utility of the car by adopting the front-cover arrangement devised by Mr. Estcourt. On heavy roads the car has already demonstrated its capacity to maintain a speed of over twenty-five miles an hour, and with an absence of noise and vibration that should make the vehicle the object of inquiry by many visitors to the exhibition at the Agricultural Hall in April.

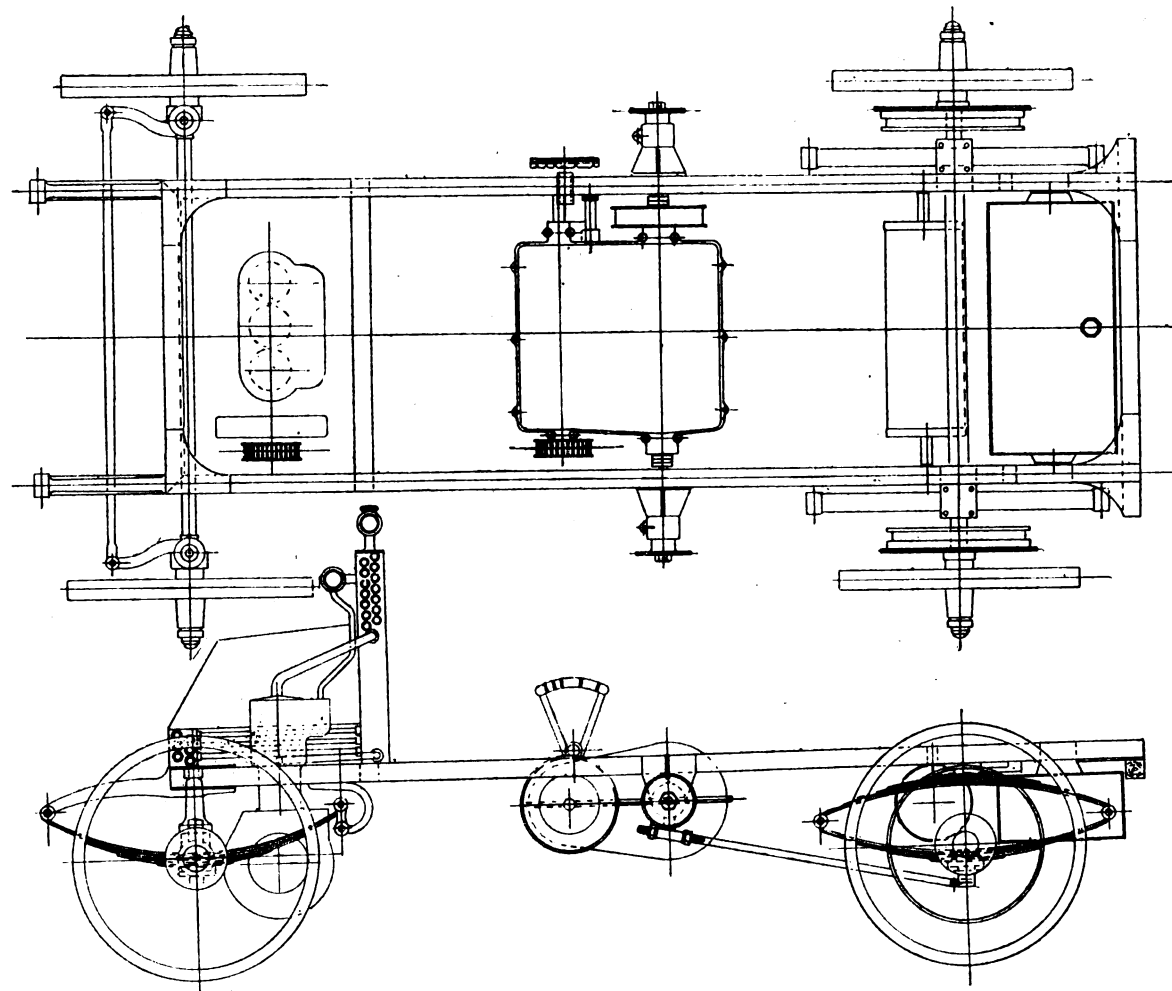
FLOTSAM AND JETSAM.

BY FLANEUR.

A BIG revolution will have to come about ere long in the methods of the suburban builder. Already he has had to consider the housing of the cycle; my own house, for example, has a nice cycle-room built into it, with cemented floor and everything as it should be, although totally superfluous in this case, as I long ago had built an outhouse that holds my car and sundry bicycles as well. With regard to cars, however, I am not suggesting that the builder should include a *garage* in his plans, though in due time that may be done in the case of mansions, for there is no need to plant a car as far away as possible, like a horse, lest the odour of the stable reek should be wafted through the windows.

slope of one in eight! To get up it with a run the driver must needs slip through his garden gates at fair speed, with only inches of clearance on either side. The ascent is thus difficult enough, but coming back is worse, and by no means a case of *facilis descensus Avernus*. The car has to be wheeled out, and allowed to drop by gravity, with a tight hand on the side brake; and steering a car backwards in a confined space, and graduating the power of the brake application at the same time, are not the simplest of operations.

This difficulty of manœuvring a car in and out of his own domain, though it vexes the soul of the suburban automobilist, serves at first one useful purpose. The one in eight gradient may be the exception, but the narrow space and awkward corners are probably the rule, and the result is that the owner, on acquiring his first car, soon of necessity learns how to use his reverse.



FIGS. 2 AND 3.—PLAN AND ELEVATION OF THE BROOKE CAR. (See opposite page).

THE consideration I have in view is that of the approach to one's back garden. If one looks round "villadom" generally, one finds innumerable houses behind which there is room to keep a car, and from the appearance of the dwellings themselves it may also be assumed that the means exist to acquire and maintain a horseless vehicle; but of room to drive it in and out there is often none whatever. In many cases this is not unavoidable; houses, it is true, are often built too closely together to permit of a motor-carriage being driven between the intervening spaces, but in the numerous examples I have in mind there might have been left ample room for the purpose if the growth of automobilism had been foreseen. But it had not.

ANOTHER difficulty which may frequently be found, even where there is just width enough to drive a car in and out, is the extreme awkwardness of the approach. I can recall three cases in which, to reach the motor-shed, the car has to be driven up a

and how to shave between gate-posts without a splitting of his splash-guards. These accomplishments being learned at home, and at the very outset of his driving career, reduce the possibility of trouble in actual traffic; but once he has become dexterous he will naturally continue to lament the inconvenience he suffers every time he takes the car out of its shed. And this brings me back to the text from which I started on this topic; the suburban builder, in his future operations, may reasonably be invited to consider the requirements of that rapidly growing class, the owners of motor-cars, for they are by no means going to be merely the men who live in mansions, nor even those who keep a carriage. Of existing automobilists, even, to say nothing of the future, the number of those who are not plutocrats is far from unimposing.

ONE of the most praiseworthy examples, by the way, which I have ever encountered of triumphing over difficulties occurred the other day in connection with one of the aforesaid gradients

of one in eight. The owner of the house has several cars, and one of these he lent to a friend to experiment upon; it has a *tonneau* body, and probably weighs about twelve hundredweights. It was not in first-class order, and its temporary owner had sundry difficulties with it on the road, with all of which, however, he coped successfully, and eventually brought it back to the foot of the stiff slope ascending to the stable. At this point the car had just taken another sulky fit; the hour was late, and the driver was loth to disturb the household. To push the car up that precipice was impossible; to leave it out-of-doors all night he disclaimed.

"WHAT would you have done?" is a question I feel tempted to propound to all and sundry, and leave the answer to next week! What the ingenious automobilist actually did resort to, however, is deserving of immediate record: I must confess that I, for one, should never have dreamed of anything so clever, and, though there may be precedents, I have met no one who ever heard of such an expedient being used before. He opened the compression tap of the motor, put in the bottom speed, applied the starting-handle, and—slowly wound the car up the hill. I may add that he is very strong!

THAT a sprag is not always the security that fancy may paint is fairly well known. If a man has any doubts about his ability to ascend a given hill on his car, he will prudently let down his sprag beforehand, and probably all will be well. But the trouble happens when he has had no cause to entertain any previous doubt, and owing to some quite exceptional failure of his engine, or miscalculation of the gradient and consequent missing of his gear, he finds the car running backwards ere he has given the sprag a thought, and it may be too late to let it down effectively when he does give it his attention. If his car be not too heavy, and his brakes in good condition, he ought, of course, to be able, even then, to obviate an untoward backsliding.

THESE facts, however, are tolerably well known, but I heard this week of a curious thing which happened to a driver on a steep hill on a main road near London, along which tram-lines are laid. He had occasion to let down his sprag, and did so amply soon enough; yet, strange to say, the car went sliding backwards. As luck would have it, the sprag had dropped in the tram groove itself, and got no grip whatever. Realising what had happened the driver raised the sprag, swerved the car a little aside, and with the aid of the brakes was able to get the sprag down again, this time with an effectual hold. The moral is, however, "Don't get too near a tram-line when you are likely to need a sprag."

THERE is another sprag story which that admirable *raconteur*, the Lord Justice Clerk, might well have included in his "Reminiscences" at the Automobile Club house-dinner last week, but so rich was the fund of anecdotes at his disposal that naturally he had to eliminate the less important. At the same time the incident which I may justifiably relate here might easily have caused a serious accident, and would have been by no means an unimportant matter, when the safety of so distinguished a friend to the automobile movement was intimately concerned. It was after one of the hill-climbing and consumption trials on Dashwood Hill; Lord Kingsburgh had been an interested spectator, and returned to town on a 6-h.p. car. Not until the conclusion of the journey was the alarming fact discovered that the sprag had become detached at one end, but that, singularly enough, instead of falling on to the road, the free end had caught on some portion of the under frame, and had rested there probably throughout the greater portion of the journey of thirty miles. The last ten, of course, were through tolerably thick traffic, and, if that sprag had dropped from its temporary lodgment, the car must inevitably have overridden it. Most likely the rod would have snapped like a carrot, but if not the car would have risen in the air. In any case the mishap would probably have had a disturbing influence upon the steering, and on a greasy surface that is not the most pleasurable of *contretemps*.

THE PHILISTINE AMONG THE MOTORS.



IT was too bad. Someone might have told me. If I had been warned beforehand I could have refused the invitation. But I was let in for it unawares. I had heard that Uncle Joseph had bought a motor-car, but did not know that he had become a motorosity, or rather what I call a monstrosity. First of all, when I arrived at Dippington by the afternoon

train a most surprisingly absent feature was Cousin Ted in the dog-cart to meet me! Not a soul to be seen. This looked queer. So I had to walk. Nearly a mile and such a dainty country road. And my best shoes, too. Most annoying!

When I reached the house I walked up the pathway. Still no one in sight. Very queer! Then, lo and behold, Cousin Ted emerged from the coach-house, and came across. Well, I have seen Ted in quite a variety of costumes, but never in anything just like this one. He wore a worried look, a sort of leather dressing-gown, and an overgrown yachting cap—and this fifty miles from the sea. "Well," I said, "what's the matter?" He held out a dirty hand, which, on behalf of my gloves, I declined. In the other he held what seemed to be an oily floor-cloth. "Oh, so sorry!" said he, "I was coming to meet you, but my throttle's out of order, I think, and it delayed me." ("That's a good old English word for his throat," thought I, "but I'd rather have the modern name.") "What's the matter with your throttle?" I asked to humour him. "Have you got a cold? Then you shouldn't take your collar off." Then he began giggling like an insane person. "Oh, that's so that I can bend easier. But it's not mine, it's 'Tom-tit's' throttle. I was getting her ready to come to the station, but there's something wrong with her throttle or a connection loose, but come and I'll show you." "Did you give her the whip?" I said, "and where are Stormaway and Ben?" Then it turned out that Uncle had sold the horses and now drives about in horrid motor-cars! I don't like them, and they don't like me; you see even this one wouldn't come to meet me, refused to budge an inch, Ted said. Uncle goes to town and back on one that looks like a gas-stove with a sofa behind it. There is a governess-cart arrangement at the back which they call something like a Watteau bodice.

I shall not stay long here. Everything smells paraffin-oily. I do declare that there was some of it in the soup this evening, and even the coffee had an oil-stove sort of flavour. The cushions in the drawing-room smell like kid gloves that have been cleaned with benzine. They have dispensed with the oil-paintings in the dining-room, and keep a regular art-gallery of portraits of famous "chauffeurs," as they call them; motor-faces sticking out of the top-front of heaps of fur and stuff. The earnest concentration depicted on their features is simply heroic. I imagine they are all trying to find the North Pole.

One evening Ted put his arm round my waist (just in fun, you know; he is so silly), and left five finger-marks of black grease on my new grey voile. He said it was only lubricating and would work off, but when it does I'm not going to have it re-lubricated! Cousin Amy has gone silly over what she calls "motor style," and wears nothing but motor costumes (which are terribly serviceable), motor gloves (like hop-pickers'), and motor hats (or rather deformed caps, which are decidedly not pretty). She thinks it smart, but I think she's ten times worse looking now than when she had the golf craze. I believe she will have her next white satin evening frock trimmed with leather. Auntie has a "motor coat" exactly like the library rug, only without a head and tail. The first day I saw it in the car I put it on the floor and my feet on top, and oh, my, she *was* mad! Well, how could I tell?

Uncle does nothing but talk of exhaust plugs and sparking valves, and inductions and driving-belts (reins, I suppose he means), and Ted is betting frightfully on racing motors. I only saw Sidney once. He spends all his time in the saddle-room trying to make an engine work with champagne. Of course he never will, because the thing will get drunk. We tried it on a horse once. We all went to a motor meet one afternoon. Of course, I wore my blue velvet toque and a dress to match. I wasn't going to be a guy to match Aunt, Flo, and Amy. Oh, they looked awful! Amy had an entire suit of terra-cotta football-leather, and Aunt Flo wore her bear-skin, and a sort of turtle-back plateau on her head, warranted to resist the rain. They both wore blue-bottle gauze curtains round their faces. Uncle looked like a partially-inflated balloon in yellow oilskins, and Ted wore seaman's boots and a sou'-wester. Instead of veils their eyes were carefully guarded by navy-blue glass plates. I don't see why the people all stared so, but I was the only decently-dressed person there.

You can't hear yourself speak on board a big motor when its going, so I asked Uncle to lend me the silver ear-trumpet he has on the handle of the rudder affair he steers with, but I had to give up asking, because he couldn't hear! Why didn't he use the ear-trumpet? It was Saturday, and they said they *must* have a little run on the Barleygate Road. So we did. They carried on so queerly. First they'd fly along, and then suddenly pull up (I mean slow down), and then they'd stop dead, and someone would get out to look behind every milestone! It appears there are policemen behind these little kopjes ready to pot at them. So what's the good of a motor-car? They make me quite nervous. I was introduced to a nice gentleman who gave me a ride on his motor, a sort of bath-chair like those at Brighton, only with a seat behind for the bath-chair man. But, dear me, I really thought at the end that they'd have to dig me out of the bank of dust that was all over the front of me. And he was quite cosy and neat at the back. This machine had conversational drawbacks. He could talk quite nicely to the back of my head. He said:—"So you are a devotee of the art of motoring, Miss So-and-So?" and I yelled "No!" but he couldn't hear, and when I turned my head round to put my answer more plainly the brim of my hat almost took off his nose. Under these circumstances our acquaintanceship did not thrive. One day Cousin Ted took me out in the "Swallow" with the gas-stove frontage, and about ten miles away the horrid thing began to shoot like a gun. I wasn't going to stay and be murdered, so I jumped off while we were going up a hill, and I sat on a fence to wait for a cart or something safe to go home in. Nothing came that way, so what with cold and hunger and Cousin Ted sitting by persuading me I *had* to go back in it. I'm sure it will explode or do something terrible some day. When we got home it was rather dark, and Ted was—er—talking to me and not looking what the car was doing. It ran into the gate-post, stood on end, and then fell over on its back. I fell right out, and the cushions and rugs and Cousin Ted and everything fell on top of me. I was awfully squashed. I have the foot-mark, I am sure, of the air-cooled cylinder thing on my back yet, only it's too far round to see. Ted says the car will have to have its bonnet done up. Well, I know mine is ruined, but I don't see how a motor-car can wear a bonnet. I'm going home to-morrow!

ANITA.

BUILDERS of heavy steam vehicles in this country have, we understand, just been asked to quote for six wagons adapted to use liquid fuel firing for the Russian Government.

MESSRS. W. KING AND COMPANY, Bridge Street, Cambridge, who have been taking an interest in motor-vehicles for the past four years, inform us that they have taken large central premises in the town, which will be opened early in March. The establishment will have storage accommodation for about sixteen cars, with large workshops and inspection pits. They will be able to undertake repair work of all kinds, and will keep a large stock of petrol and motor accessories.

MOTOR-BICYCLES FOR LADIES.

ONE of the latest departures in connection with motor-bicycles is the adaptation of these machines for use by ladies. Fig. 1 shows the Ivel machine, which has been introduced by Mr. Dan. Albone, of Biggleswade. As will be seen, the machine follows the general outline of an ordinary lady's bicycle; the motor is a $1\frac{1}{2}$ -h.p. Minerva, driving the rear wheel by a belt, which is efficiently guarded, so that it is impossible for the dress to become entangled. The motor is fitted with a float-

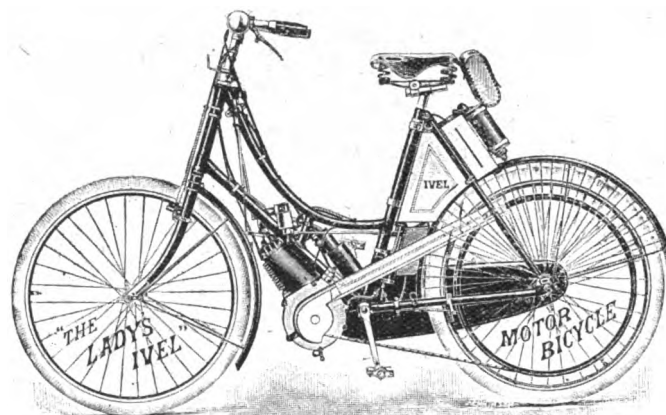


FIG. 1.—THE IVEL.

feed carburettor and automatic oiling apparatus. The levers are all conveniently arranged, while the petrol tank, which is fitted in the rear frame, has a capacity sufficient for a run of fifty miles.

Fig. 2 shows the Excelsior machine, made by Messrs. Bayliss, Thomas and Co., of Coventry. It will be seen that the frame is of special design. The motive power is supplied by a $1\frac{1}{2}$ -h.p. Minerva engine, fixed below the bottom tube. The combined



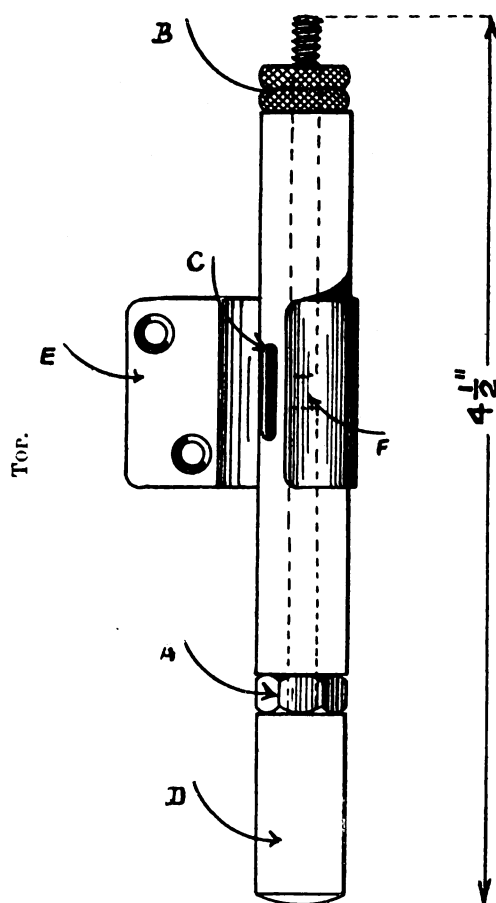
FIG. 2.—THE EXCELSIOR.

carburettor and petrol tank is located between the top and bottom tubes behind the head, while the coil and accumulator are fixed to the seat tube behind the saddle. As in the Ivel, the motor and driving arrangement are efficiently guarded. Mr. Van Hooydonk, of Holloway, is also introducing a motor-bicycle specially adapted for ladies' use.

THE works, plant, and business of the Kingsburgh Motor Construction Company, Limited, Granton, were again offered for sale by auction as a going concern in Dowell's Rooms, Edinburgh, on Wednesday last. "To induce competition," the lot was put up at the "greatly reduced upset price of £10,000," but up to the time of going to press we have not heard whether a sale was effected.

AN ELECTRIC IGNITION INDICATOR.

UNDER the name "Ignicator," a new and ingenious device for instantly ascertaining whether the electrical ignition in petrol, oil, gas, or any other internal combustion engine is active or not, is being introduced by Mr. V. Douglas de Wet (representing the Ignicator Syndicate), of 12, Regent Street, London, S.W. The device provides those in charge of cars with a simple means of localising, without leaving the seat, any failure in the vehicle such as (1) batteries run down; (2) damage to sparking plug; (3) short circuit or leakage; (4) unsuitable carburation; (5) faulty contact-breaker or trembler. Also in the case of more than one cylinder being employed, as in the Panhard, Daimler, Mors, and Peugeot cars, this device shows at a glance, in addition to the foregoing, what each and every cylinder is doing. Thus, without getting down the driver can see that No. 3 cylinder, for instance, is idle and consequently throwing all the work on the others, instead of, as at



present, having to stop, descend, and examine all the cylinders to find the offending one.

When duplex ignition (*i.e.*, hot tube and electric spark) is used simultaneously it is almost impossible to tell whilst travelling whether one or both methods are performing their duty, but with the new instrument this is at once made manifest, as if, on switching off the electric current by means of the switch usually provided in the cars, the cylinders are still in action it is evident that the hot tube is firing the charge, the only means at present of ascertaining if the electric ignition is doing its work being to get down and turn off the burners of the hot tube ignition. Another useful and important point about the Ignicator is that it can also be used as a "cut-out," thereby securing a double purpose: firstly, to enable the driver, without leaving his seat, to test each and every cylinder of a motor of two or more cylinders separately; and, secondly, to economise power by cutting off any cylinder or cylinders that may not be required for working purposes, such as when going down hills or when a less speed is required. This is effected by simply turning the vulcanite handle (D) until the points of the rods (represented by

the dotted lines) are too far apart for the spark to jump across. It should be mentioned that an Ignicator is required for each cylinder, suitable clips to hold one, two, or more, as required, being provided. The instruments are small and neat, one being only four inches long, so that very little space is taken up; and, moreover, they are easily attached to the car, as, after having screwed the clip or clips on to the dashboard or other convenient part, where it can be easily seen by the driver, the insulated wire usually employed to convey the secondary or high tension current from the coil to the sparking plug is to be connected instead from the coil to one terminal (A or B) of the Ignicator; then, by means of an extra length of similar insulated wire, the other terminal of the Ignicator (B or A) is attached to the sparking plug. In other words, the Ignicator is connected in series with the high tension circuit, and it should be pointed out that it does not use up any of the current of the accumulators or batteries. Referring to the illustration, which shows the actual size of the Ignicator, D is the vulcanite or insulated handle for regulating the width of the spark gap or electric bridge, and it is by turning this handle sufficiently, so as to widen the gap, that "cutting out" any cylinder can be effected; A and B are the terminals connected, one to the coil, the other to the engine sparking plug; C, the observation slot through which the spark and condition thereof is observed; E, the clip in which the Ignicator is held (the one in the illustration being for a single Ignicator). The dotted lines represent the rod inside the tube from the points of which the spark passes, and F is the gap, or electric bridge across which the spark passes.

To ascertain where a fault, if any, lies, the following conditions have by repeated observations been summarised:—

(1) Batteries run down.—The spark at the gap in the Ignicator will be intermittent and probably cease altogether until the points are brought a little closer, upon which the spark will commence again. This is due to a "drop" in the E.M.F. (electro-motive force), a sure indication that the batteries are nearly "discharged," and therefore the pressure of the induced current is not sufficient to jump the gap. (2) In the event of the porcelain of a plug cracking, and thereby causing a short circuit in the body of the plug, this can at once be ascertained by "cutting out" the good cylinder or cylinders, and the one that is failing to explode (although indicating a good spark in the Ignicator) is the one that is short circuiting. (3) Short circuit or leakage.—In this case there would be no spark shown in the Ignicator. (4) Unsuitable carburation is shown by there being no explosion in the cylinder or cylinders although a good spark is shown in the Ignicator. (5) Faulty contact in contact breaker or trembler would be indicated by a complete absence of any spark, whether the points are close together or not, or even in contact.

It will thus be seen that although the Ignicator is an extremely useful little device for the purpose of testing even single-cylinder cars, it becomes far more useful in cars having motors of two or more cylinders, and also in such cars where duplex ignition is used.

In addition to their tire-driven motor-bicycle, Messrs. Edward de Poorter and Company, Limited, of 9 and 10, Great Tower Street, London, E.C., have now introduced a belt-driven machine. The general arrangement follows the old type of "Derby," but instead of the friction drum acting on the tire, a small pulley, carrying the belt, is used to convey the power to a light metal pulley on the rear wheel. A lever is provided, by means of which the belt can, without dismounting, be tightened or slackened at any time, so as to give practically a free engine.

The East Riding Cycle and Motor Company, of Grosvenor Street, Hull, has just introduced a new motor-bicycle, in which several novel features are comprised. The frame of the machine is of special construction, the motor being carried in a vertical position, just forward of the bottom bracket. It is of the air-cooled type, developing $1\frac{1}{2}$ h.p., the power being conveyed to a light pulley on the rear wheel by means of a leather band. A single lever operates the exhaust-valve lifter and advance sparking arrangement. A spray type of carburettor is used, while particular attention has been paid to the question of lubrication.

CONTINENTAL NOTES

BY "AUTOMAN."

THE Paris-Vienna motor-car race is now a certainty, all doubt having been put to an end by the official sanction of Austria being accorded. From Paris to the frontier there will be no racing, but just a promenade—unless the French governmental authorities should relent, which seems at present very unlikely, and allow full speed ahead. From the French frontier there are several proposed routes, and, very naturally, Mr. Ernest Cuenod, who is the vice-president of the Swiss Automobile Club (although his headquarters are in Paris), is most anxious that the route should be through Switzerland. In a conversation I had with Mr. Cuenod the other day he expressed the opinion that he would succeed in obtaining the sanction, but I fear "the wish is very much the father to the thought" with him, and I should feel inclined to doubt the possibility of such a result, because of the peculiar state of the laws of the little mountain Republic. There each Canton seems to have its own complete control of the roads. I should be inclined to prophesy that very little, if any, Swiss soil will be disturbed by the rubber tires of the competitors in the Paris-Vienna race. The route will more likely be through the Bavarian Alps.

THE rules for the competition in the touring section have just been printed, and are briefly as follows:—Any vehicles are admitted which have a system of mechanical propulsion, providing they are entered by a member of the A.C.F. or one of the affiliated clubs, and that they are driven under the direct responsibility to this person. The competing cars must have comfortable sitting room for the number of passengers which they propose to carry, and must be vehicles similar in type to those delivered ordinarily to the customers of the manufacturer. The power of the motor must be declared, and must be in proportion to the kind of cars and the weight of the vehicle fully loaded. Every car must be photographed before the start by an official photographer. Entrance fees are 200 francs, or £8, up to May 31st, and 400 francs, or £16, after that date and up to June 10th. The entrance fees will be forfeited if the car is not started. Every car must carry a ticket with Paris-Vienna printed on it, and with the crests of the French, Swiss, and Austrian automobile clubs, and the number of the entry. No advertisements are allowed, but the driver must have a distinguishing band on his arm. The tour will take place between June 17th and 28th. The driver of each car must carry the documents showing his permission and capacity to drive. In France and Switzerland drivers keep to the right when meeting other cars, and pass other cars going in the same direction on the left, whereas in Austria the opposite rule holds good, as in England. Spare parts can be carried, and any repairs are allowed either on the road or in the garage.

WHILST on the subject of racing, I must mention the peculiar situation in which the matter is placed at the present moment in France. Since the unfortunate hasty action of the Chamber of Deputies on the motion of M. Gautier de Clagny, who was scared by the lamentable accident on the road between Epernay and Reims in the Paris-Berlin motor-car race, no other race has been authorised in France. But now the Government is so interested in the alcohol question that it has a project on hand for a great race between Paris and Calais. The A.C.F., which has already asked for sanction for several races and received a flat refusal, does not see why the monopoly of organising races should fall into the hands of the Government, whom it considers an improper authority in these matters. The question, therefore, is whether or no the A.C.F. shall authorise the Government race from Paris to Calais; and the automobilists of France may find themselves in a peculiar dilemma. If they enter for the Government race they may be disqualified by the A.C.F., and if they do not enter for the Government race, the Government will not let them race under the auspices of the A.C.F.

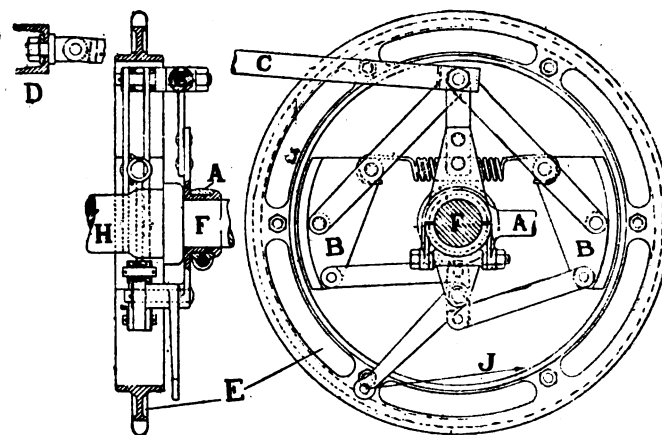
TALKING of the A.C.F., a meeting was held the other day to

organise the Société d'Encouragement as a branch of the Club, as explained in the *Journal* some few weeks back. There were a great many present, and the discussion on the subject got into such a state of confusion that M. Forestier, who was the author of the project, proposed that the proposition should be put off until a later date. This was agreed to.

THE defenders of the Gordon-Bennett Cup are to be Fournier, Girardot, and René de Knyff, who, in the case of sickness or other accident, will be replaced by Huillier (commonly known in the racing world as Gilles Hougières), Giraud, and Maurice Farman. Three cars that are likely to compete will be a Mors, driven by Fournier; a Charron-Girardot-Voigt, driven by Girardot; and a Panhard-Levassor, driven by René de Knyff. The race will be doubly interesting from the fact that in addition to the international struggle, there will also be the purely national contest between the two great French houses, as well as with the new competitor.

THE JAMES AND BROWNE DOUBLE-ACTING BRAKE.

IN connection with the recent correspondence in our columns on brakes, and more especially in regard to the letter from "Double Action" in our issue of the 8th inst., describing the brakes on the new Charron cars, Messrs. James and Browne



FIGS. 1 AND 2.—SECTION THROUGH CENTRE, AND ELEVATION ON INSIDE OF CHAIN RING

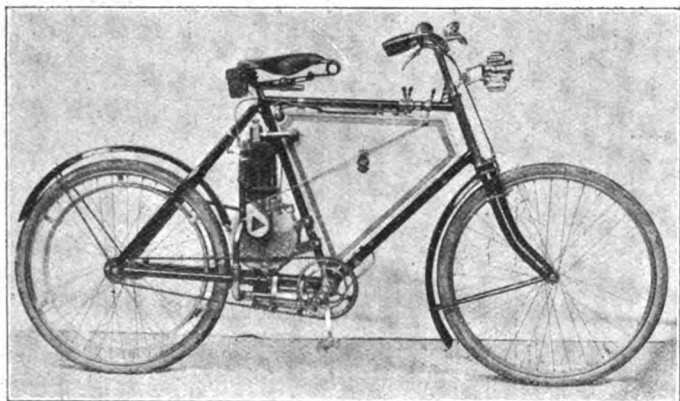
- | | |
|--------------------------|------------------|
| AA. Chain thrust rod. | E. Chain ring. |
| BB. Brake blocks. | FF. Axle. |
| CC. Brake tension rod. | H. Hub of wheel. |
| D. Back member of frame. | J. Brake cord. |

of Hammersmith, have sent us drawings of the brake which they are fitting to their new cars, for which they claim all the advantages of the "Charron" brake, such as removing wheels without affecting the brake, etc. As will be seen, the brakes take the form of two slippers acting on the inside faces of the chain sprockets attached to the rear road wheels of the car. The slippers are brought into contact with the braking surface by means of ingenious toggle arrangements actuated by the pull on the brake cord. The thrust rod runs to the back of the frame instead of to the sprocket bearing, so that no strain is put on the latter when the brakes are used; it is made a fixed length and consists of a plain tube. As the chains can be adjusted without in any way interfering with its action, the work of chain adjusting is rendered a very simple matter.

THE Motor-Cycle Manufacturing Company, of Brockton, Mass., U.S.A., have lately built what is claimed to be the most powerful motor bicycle in existence. It is a 6 h.p. racer, in which the motor is supported parallel with, and in front of, the main down tube of the frame, and drives the rear wheel by a belt. The frame is of specially strong construction, a noticeable feature being the use of duplicate front forks. In an official trial the machine has, it is stated, covered a mile in 1 min. 23.5 sec.

THE "KING" MOTOR-BICYCLE.

"STILL they come!" is the cry with regard to motor-bicycles, one of the latest to come under our notice being the "King," made by Messrs. W. King and Company, of Bridge Street, Cambridge, and of which an illustration is given herewith. It is probably one of the most powerful machines of the kind in the country, being fitted with a $2\frac{1}{2}$ h.p. De Dion engine. The wheel base of the bicycle is longer than usual, to enable the engine to be fixed between the seat tube and the rear wheel, which is driven by means of a small twisted belt working on a light metal pulley. The motor is provided with a jet-feed carburettor, which is claimed to work satisfactorily in the coldest of weather; an exhaust-valve lifter, controlled by Bowden wire, is also fitted. To render the machine as quiet as possible a large exhaust box is made use of, while as regards lubrication of the crank case, this is so arranged that it can be effected whilst riding, sufficient oil being carried for a run of 300 miles. The petrol tank, which is fitted in the frame, has a capacity of two gallons. The frame of the machine is of specially strong construction; the wheels are twenty-six inches in diameter and are



shod with 2-in. or $2\frac{1}{2}$ -in. pneumatic tires. Messrs. King inform us that, employing a $2\frac{1}{2}$ -h.p. engine, the machine is an excellent hill climber, a statement we can readily believe; in fact, they claim that it will pull a trailer up most hills without any pedal assistance on the part of the driver.

WE hear that the British Power, Traction and Lighting Company, Limited, of York, will shortly open a dépôt in London for the sale of Gardner-Serpollet steam vehicles.

MESSRS. TRENT, of Wells Road, Shepherd's Bush, W., have just introduced a new motor-bicycle. It is somewhat on the lines of the old Werner, a $1\frac{1}{2}$ h.p. air-cooled motor being fixed in front of the head, and driving the front wheel by a leather band.

THE Thomson Motor Company, of Melbourne, Victoria, have just completed a 5 h.p. steam motor-van for the Dixon Tobacco Company. The van will run nearly 70 miles without recharging water or kerosene, the latter being used as fuel.

THE P. and R. Storage Battery Company, Limited, has been registered, with a capital of £6,000, to adopt an agreement made by this company with Allan and Adamson, Limited, and W. Peto (the liquidator thereof), and to carry on business as electricians, electrical engineers, etc.

THE capital of the company formed for the carriage of goods between Liverpool, Blackburn, and Manchester by motor-wagons has now been fully subscribed and the directorate completed. It is not at present proposed to include Manchester in the daily service, but first to work up and consolidate the Liverpool to Blackburn service for the carriage of goods, the principal advantage being that the cotton will be carried at 1s. 6d. per ton cheaper than by rail, and delivered the same day as collected.

LUBRICATION.

THIS is a subject which appeals forcibly to every motorist, and one on which, perhaps, more than on any other single matter affecting an automobile, satisfactory running depends. The necessities of explosion motors, more particularly those of the smallest type, have evoked much scientific and manufacturing skill in the production of suitable oils for their lubrication, and beyond the recommendation that a good and well-known brand should be selected little need be said here on the subject, except to remark that there is never any objection to using a thick oil where a thinner one will do, unless, of course, it will not flow easily through the type of lubricator employed, though the reverse is by no means the case. The general lubricating arrangements of cars, however, invite more comments than space will permit. Few drivers will fail to properly oil their engine, which is quite capable of calling attention to the omission; but the same care is not always given to the numerous other points about the vehicle where lubricants are needed, and where much unnoticed deterioration may be caused by their absence.

Mechanical feeds of the "oleopompe," or similar types, are not largely used on account of their complication and expense, and the usual methods vary between lubricators grouped on the dashboard, and the same distributed in proximity to the parts they supply. The former arrangement, though convenient, is perhaps less advisable in some ways, as the long and tortuous pipes needful are possible sources of trouble, especially in cold weather, and additionally so where grease is employed; while the general inspection that distributed lubricators demand is by no means an undesirable formality. Semi-solid lubricants have, in the writer's opinion, many advantages in automobile work; they offer greater resistance to the entrance of road dust and grit into bearings, are cleaner, and more economical, while the increase of friction due to a more consistent lubricant is infinitesimal, and for ball bearings practically they are much to be preferred.

And here it may be remarked that the virtues of graphite as a lubricant are hardly as much appreciated as they might be. True, it is dirty, and somewhat difficult to distribute, being, when mixed with oil, not altogether an ideal liquid for drip-lubricators; but in such cases as a piston or bearing slightly injured through insufficient lubrication a short course of graphite will often get the surfaces back into good working condition—a fact worth noting, particularly with steam-cars. For valve-stems, too, graphite is useful, being indeed the only admissible lubricant, and it is equally beneficial to that bugbear, the pump. It is somewhat odd, by the way, that lignum-vitæ bearings have not been employed in the latter, being the only material on which metal will run with water lubrication. Graphite for such purposes should, it is needless to say, be of the best, the ordinary black-leads, though good enough for smearing packings with to prevent adhesion, being by no means suitable for anything else except blacking stoves. Finally, for such small moving parts as are not deemed worthy of special oiling devices, and usually have to depend on a casual—sometimes very casual—oil-can, a grease syringe, best employed with some graphite grease, is far preferable.

R. W. BUTTNER.

WE learn that Lord Edward Spencer Churchill has just placed an order for a 12 h.p. Daimler car of the new type.

THE Clarkson and Capel Steam Car Syndicate, Limited, have made a donation of £5 5s. to the funds of the Motor Union.

AT a recent meeting of the Maidstone Urban District Council the recommendation of the Electric Lighting Committee in reference to the charging of the storage batteries of electric motor carriages was adopted. In future, ignition batteries and main cells will be charged at the municipal electricity works at the rate of 8d. per unit. A yard is provided at the station, where the motor-cars may stand while the charging is carried out.

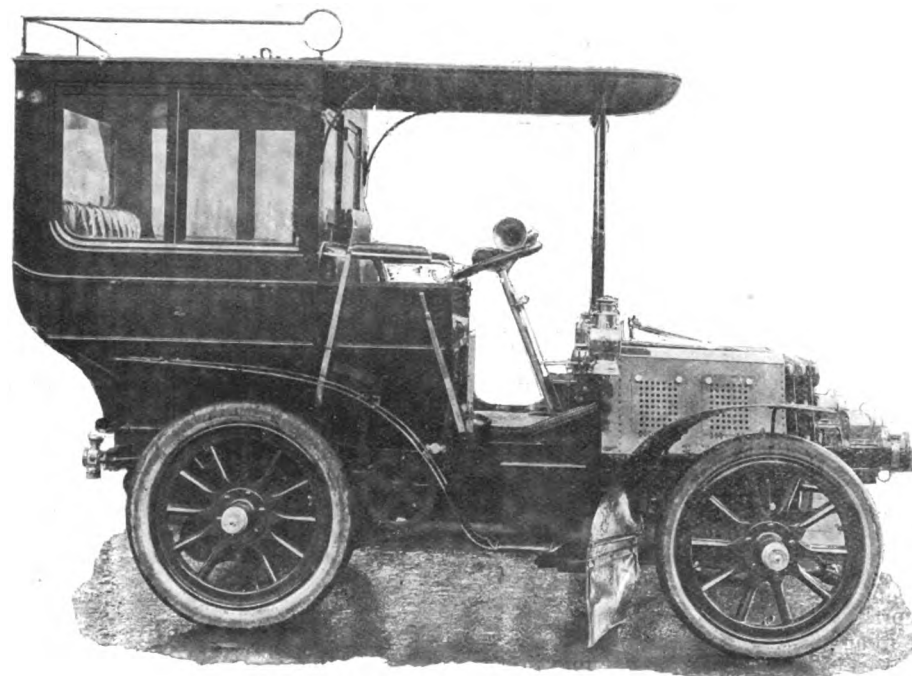
DOUBLE-ACTING BAND BRAKES.

THE term double-acting as applied to brakes is somewhat ambiguous. If it is interpreted to mean that the brake effects a retarding action on the vehicle for each direction of motion, then all the brakes which have come to our notice, and probably all that have ever been made, are double acting. If, on the other hand, it is interpreted as meaning that the retarding effect is exactly equal, with equal operating pressures, for both directions of motion, then the class of so-called double-acting brakes most commonly used only deserve their name when certain conditions as to dimensions are fulfilled. The class of brakes we refer to, remarks the *Horseless Age*, is the band brake in which both ends of the band are movable and are fastened to the opposite arms of a double-armed lever.

By varying the design of this brake, that is, by changing

THE NAPIER 24 H.P. BAROUCHE.

HEREWITH we reproduce a photograph of Mr. Wilfrid Ashley's 24 h.p. Napier car, fitted with a type of body which is known in France as a "Limousine," but which originated in this country some twenty years ago, it being made for the Duke of Beaufort, and called a Beaufort barouche. The Motor Power Company, Ltd., state that they believe it is absolutely the first body of this description built in this country, and was constructed to their own design and specification. Although it looks very large it is really very light, as, wherever possible, aluminium is used. All of the top portion is of glass, readily removed, the whole making a fine double phaeton. All the fittings, etc., are the very finest cabinet work. The photograph hardly does the car justice, as, owing to the fine mahogany and rosewood fittings, it looks very much lighter in



THE NAPIER 24 H.P. BAROUCHE.

the distance between the centre of brake drum and centre of brake lever, the length of the lever arms and the length of the band, it may be made either a perfectly double-acting brake, with equal effect for both directions of motion, a brake exactly similar in action to the so-called single-acting band brake with one end of the band fixed, or it may occupy any position between these two extremes. In practice the brakes of this class usually belong to the last category; that is to say, they are not quite as powerful for reverse motion as for forward motion. There is, of course, no reason why we should insist upon the theoretical condition of equal power for both directions being complied with, especially as, on account of the higher forward speeds of vehicles, the greatest braking effort is always required to arrest forward motion; but, at the same time, if judicious design permits us to increase the brake power for reverse motion without seriously affecting the power for forward motion, we might as well take advantage of it. It is, at any rate, well to know what are the theoretical conditions underlying the equality or inequality of brake action for the opposite directions of rotation of the brake drum. In the ordinary band brake, in which one end of the band is fixed, the tension in the band varies from end to end. For forward motion it is greatest at the fixed and least at the opposite end. Similarly in a band with both ends movable the tension varies from point to point, but the point of least tension is never at one end.

In order that the braking effect may be the same for both directions the tension applied to each end of the band must be the same. To ensure this the length of the band must be so adjusted that when the band is drawn tight the effective lever arms, through which the operating power is applied to the ends of the band brake, are the same.

real life than it does in the photograph. We may add that Mr. Ashley has now driven the car some thousands of miles.

MR. E. H. MICKLEWOOD gave a lecture on "Motor-cars and Traction" at the Plymouth Athenæum last week.

SEVERAL local authorities have deferred the consideration of the question of the law affecting light locomotives until the result of the recent conference between the Local Government Board and the County Councils' Association is made known.

"THE proposed motor-cars" is the heading of a paragraph in a Devonshire paper, which, on reading, proves to be a refusal of the Local Government Board to allow the Electric Lighting Committee of the Taunton Town Council to spend £2,000 for motors for power purposes to be let out on hire.

MESSRS. STROM AND SON, Paris, who are represented in this country by the Grapholine Manufacturing Company, Ltd., have issued a most effective catalogue of their special clothing for motorists. There we have splendid illustrations of motor raiment for ladies and gentlemen, ranging from the simplest leather garments to most elaborate motor robes for ladies' evening wear. It reveals a picturesqueness in motor costume that is sadly lacking in our ordinary attire.

THE Peak district of Derbyshire has resembled Canada during the last few weeks, and the snow and ice have given joy to all who love winter sports. Mr. Bradbury, the well-known writer on Derbyshire, has been touring through the district on Mr. A. Beatson's Locomobile. He writes graphically of the ascent of Topley Pike and the journey to Taddington, a village which lays counter-claim to its neighbour, Chelmorton, for the distinction of being the highest village in England. Snow and ice have no terrors for a well-driven motor-car.

AUTOMOBILES AND THE RAILWAY COMPANIES

OFTEN have we urged in these columns that motor vehicles might be usefully and profitably employed to act as feeders to outlying districts and also in facilitating the conveyance of passengers from the railway station to their homes. But hitherto the railway companies have not been very enterprising in the matter, and have shown an aloofness which has at length been broken down by the Northern Counties Railway Company of Ireland. As we have already announced, the company recently decided to supersede the horse bus plying between the Whiteabbey and Greenisland railway stations, Belfast, by a motor-omnibus. During the last few days this vehicle—the first of its kind introduced into Ireland—has been plying in the streets of the northern city, attracting considerable attention. The omnibus is one of Messrs. Thornycroft's steam cars, and should it prove satisfactory the railway company will adopt similar machines in other towns on their system.

There are several ways in which the adoption of automobiles by the railway companies should be of advantage, and their use in large towns will be preparatory to a development in rural districts, which will be of considerable utility to the country. Many large villages are miles away from the railway station. By providing motor-vehicles at such stations a regular service could be maintained to run in conjunction with the trains, thus securing a through time-table system. With horse traction no really reliable time-table can be issued, but with the provision of motor-cars running from villages to stations it will be possible to meet the trains and avoid the uncertain running incidental to horse-drawn vehicles.

This is but one department in which automobiles will be serviceable to railway companies. Probably it will be in the supersession of motor lorries for ordinary vans in dealing with heavy traffic and parcels delivery that the greatest economy will be effected. By such means it would be possible to work the goods department with the same exactness in time that the passenger service is now run. That this is recognised by some of the leading railway managers is evident from the fact that the Lancashire and Yorkshire Railway Company are building motor-wagons for their own use, such enterprise having been warranted by previous experience with a vehicle in actual use.

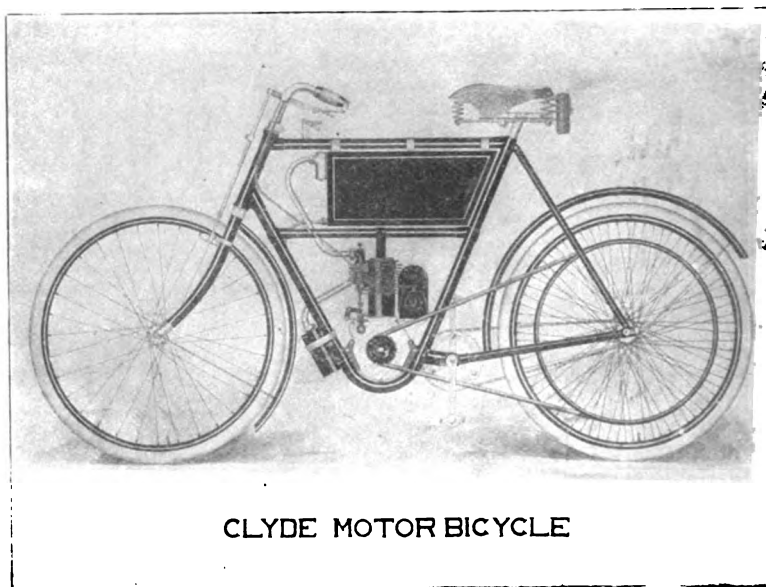
There is no doubt that railway directors will find in the automobile a most valuable ally, one that is more adaptable to varying circumstances than light railways. Even in localities where light railways will have eventually to be developed, motor-car services might well be established with a view of obtaining data as to probable traffic and other information of service when considering the financial aspects of the question. Thus, in every way, the matter is one of interest to railway companies, and we gladly recognise the Lancashire and Yorkshire Railway Company and the Northern Counties Railway Company of Ireland as pioneers in this respect. Which will be the next company to utilise the automobile?

MR. W. M. LETTS has returned from a visit to the United States, and has brought with him some excellent specimens of the cheaper form of Locomobile which is being made specially for the British market. These cars have the same power and capacity as those already familiar in most of our towns, but in some minor points economies have been effected, with the result that a reduction in cost has been obtained. Three hundred of these cars are now being made.

A NEAT little catalogue, illustrating their specialities of motor clothing, has been brought out by Messrs. Holding and Son, of Maddox Street, W., and King Street, E.C. The firm is favourably known in connection with Auto-cloth, and has five other kinds of cloth in non-dust-showing shades. These are made up with lining to suit the individual preferences of customers. A special coat for lady motorists has a prominent place in the list, and attention may well be drawn to the kangaroo-leather vest, which is really a combination of kangaroo leather, chamois leather and flannel with slipping sleeves.

THE CLYDE MOTOR-BICYCLE.

IT was announced in these columns some time ago that the Clyde Cycle and Motor-Car Company, Ltd., of Shenstone Street, Leicester, were at work on the construction of a new motor-bicycle. The machine is now on the market, and from the accompanying illustration it will be seen to comprise several novel features. In the first place, it will be noticed that the frame is of special design. The motive power is supplied by a Simms air-cooled engine of 2 h.p. The placing of the motor in a vertical position is claimed to ensure equal wear on the piston and valves, and perfect lubrication and cooling of the cylinder. The mixture is formed by a spray carburettor, while a Simms-Bosch magneto-electric machine furnishes the electrical spark for the ignition of the charge. An exhaust valve lifter is provided, and this is actuated by a Bowden wire so arranged that before the exhaust valve is held closed the ignition is retarded



CLYDE MOTOR BICYCLE

to its slowest point. From the motor the power is conveyed by a belt to a light pulley connected to the rear wheel. The petrol tank has a capacity sufficient for 100 miles, and if necessary an extra tank can be fitted behind the saddle. A pump is provided for the automatic lubrication of the crank case. The road wheels are 28 inches in diameter, and are shod with 2-inch pneumatic tires. Each wheel is provided with a brake, so that although the motor-bicycle can attain a speed of thirty-five miles per hour on good roads it is always well under control, the various levers being grouped together within easy reach of the rider's hands.

It has been decided to have a badge prepared for members of the Motor Union.

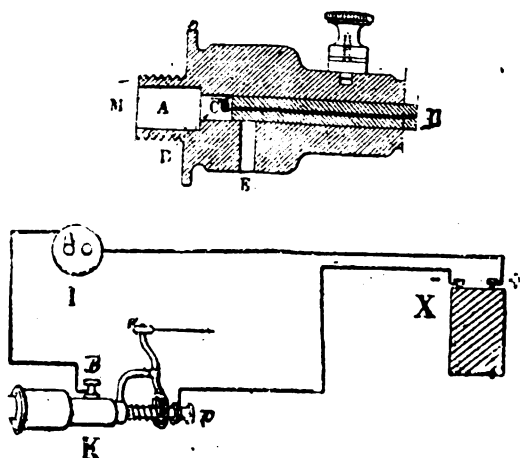
The annual general meeting of the Automobile Club will be held at Whitehall Court, S.W., on the 27th inst.

AMONG the recent shipments of Stirling cars were, one to Holland, another to Malta, and two to Johannesburg, South Africa.

THE statutory meeting of Portsmouth and Gosport Motors, Limited, was held at Portsmouth last week. Only formal business was transacted. The chairman gave an interesting account of the working of the cars, more especially the Cambria, which, he said, had run practically without any serious detention upwards of 2,600 miles, the two vehicles having carried upwards of 17,000 passengers, which spoke well for the popularity of the car of the future. The receipts from all sources for the past four weeks amounted to £103. There were three cars on order for early delivery.

L'ALLUMEUR ELECTRO-CATALYTIQUE.

IN our issue of December 28th last "Automan," in his account of the report of the Paris Automobile Exhibition, gave a brief description of what may be termed the "metallic" ignition of M. Wydts. We are now able to publish a further illustration showing a section of the new ignition plug, and the arrangement of connecting up the small battery with it. As previously stated M. Wydts uses a special alloy of osmium, iridium, and ruthenium, which is extremely porous, inoxydizable, and able to withstand very high temperatures. He discovered at the same time that the faintest electric current through this alloy had the effect of purging the metal of all impurities and keeping it permanently in perfect condition for ignition purposes. The device which he has produced, and which is guaranteed to do all the work now done by incandescent tubes or the electric spark, is described as follows:—A plug *K*, made of brass, is screwed into the head of the motor, and contains a piston *D*, which may be pushed back and forth by means of a lever or other device. Through the piston *D* runs an insulated wire. At its inner end the piston *D* carries a piece of the alloy *C*, which is fastened on one side to the inner, insulated wire, and on the other side to the end of piston *D*. The latter, being in contact with the body of the plug, receives the current transmitted through the terminal *B*. An electric current passing from *B* to *P* will consequently pass through *C*. The commutator *I* by which the current may be interrupted when no longer necessary is seen in Fig. 2. It is to be noted that the electric current may be extremely weak, and serves only to heat the alloy when the motor is cold. A few seconds after starting the motor, even this weak current, for which any small battery is sufficient, may be cut out and the alloy will take care of all subsequent explosions without assistance, by its mere presence in the combustion chamber. The ignition may be advanced or retarded at will by the movements of a lever acting on the piston *D*, and may be interrupted entirely by drawing the alloy *C* back to the aperture *E* in the plug. The free admission of the oxygen of the atmosphere will then immediately cool the incandescent mass, and disturb the explosive properties of the gas mixture in the combustion chamber. From the correspondence we have received on the subject it is evident that considerable interest is being taken in the new ignition. Curiously

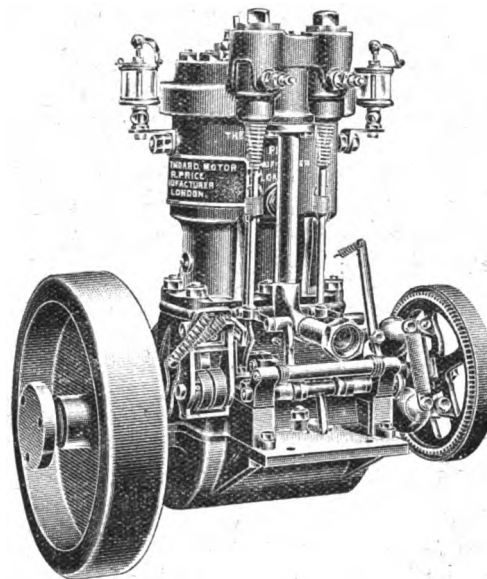


enough, too, we learn that experiments have been in hand in this country for some time past with a somewhat similar form of "metallic" ignition. We may add that Messrs. Ed. de Poorter and Company, Ltd., 9, Gt. Tower Street, London, E.C., have acquired the sole agency in this country for the "Allumeur Electro Catalytique."

MR. F. T. MERSELES, of the American Bicycle Company, New York, is, we learn, at present over in this country looking into the possibilities of opening up a trade in motor-cars.

THE PRICE PETROLEUM SPIRIT MOTOR.

A VERTICAL two-cylinder petroleum-spirit motor made by Mr. R. Price, of Willow Grove, Plaistow, E., is shown in the accompanying illustration. The cylinders have a bore of $3\frac{1}{2}$ in. by $5\frac{1}{2}$ in. stroke, and at a normal speed of 800 revolutions per minute develop 8 b.h.p. The crank case is provided with detachable openings sufficiently large to enable the connecting rods to be adjusted without having to dismantle the engine, while the valves are also so



arranged that they can be withdrawn without breaking any of the joints. A centrifugal governor, in connection with which is an accelerator, is provided. This can be made to act in three different ways, viz., one cylinder to cut out at a speed of 700 revolutions per minute, and the other at 900 revolutions, or both together, or the governing can be done by throttling the vapour valve. Electric ignition is employed, care having been taken to so arrange the contact-breaker that no oil or dust can reach it. All the parts are well balanced, and special attention has been paid to the details, the gear-wheels being provided with shields. The 8 b.h.p. motor weighs, excluding the 90 lb. flywheel, 110 lbs. Mr. Price is also making motors with one, three, or four cylinders, for both motor-car and launch purposes, ranging from 4 h.p. to 24 b.h.p.

THE Syracuse Automobile Club, of Syracuse, U.S.A., has decided to call the place where motor-cars are stabled an "autogorium."

THE Automobile Club of America has succeeded in obtaining certain touring privileges in Canada, a letter having been received from the Acting Collector of Customs at Ottawa, announcing the willingness of the Canadian authorities to extend to American touring automobilists the same privileges accorded sportsmen entering the border ports. If requested, his department will issue orders that touring motor-vehicles be regarded as sporting outfits, on the same footing as guns, fishing rods, and other paraphernalia of sport. These pay 25 per cent. duty, but their temporary importers receive receipts for the duty paid, which is refunded when they recross the border. The tourist is required to make an affidavit and fill a descriptive blank, so that the article entered may be readily identified. The Automobile Club of America will now endeavour to induce the United States authorities, who now demand the full 45 per cent. duty from touring Canadians, without refunding, to reciprocate by issuing similar orders, or carry the matter a step further and ask for the same privileges as cyclists, who do not even have to make deposits on crossing the border.

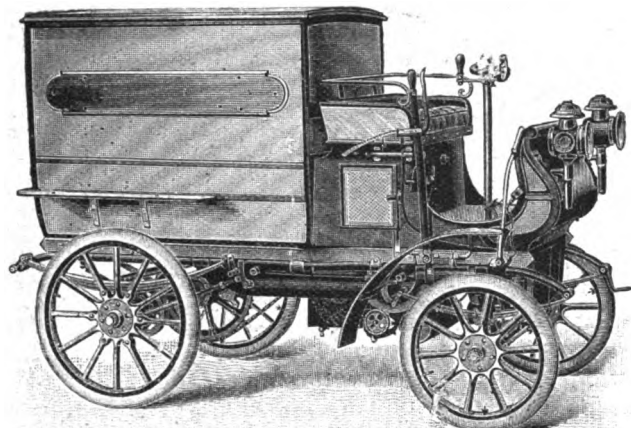
HERE AND THERE.

MR. A. LORENZO BARBER, president of the Locomobile Company of America, is at present in England.

MR. G. FOSTER PEDLEY informs us that he has recently resigned his position as manager of the Daimler Motor Company.

MR. R. N. WHALEY'S auction sale at Lincoln on the 1st prox. will include a few motor-tricycles and quadricycles.

THE Caledonian Motor-Car and Cycle Company, of Aberdeen Scottish agents for the Peugeot motor-vehicles, are introducing a light motor parcel delivery van made by the Peugeot Company, and of which an illustration is given herewith. The vehicle, which is intended to carry a load of six cwt., is propelled by means of a 5-h.p. two-cylinder horizontal motor, having electric



ignition. Three forward speeds and a reverse motion are provided. The road wheels are of the artillery type, shod with solid rubber tires. The illustration shows a car fitted with tiller steering, but in the latest types wheel steering is provided, the throttle and ignition levers being mounted on the inclined steering post.

THE Locomobile Company are bringing out a new steam air and a steam water pump. By fitting one of these pumps and simply turning on the steam cock, the air is pumped up to 80 lbs. within two minutes—thus obviating the long and irksome process of pumping up air pressure by hand. We hope to refer to this improvement in our next issue.

IN reference to the importation of automobiles, the director of an automobile company writes that it must not be overlooked that this country is making enormous strides. The output of his company is now five times what it was two years ago, and there would be no trouble in increasing this tenfold; but wise manufacturers have to be careful that every vehicle turned out is a credit to Great Britain. The greatest barrier to increasing the output rapidly is the difficulty of securing good mechanics, only about one in ten, it is said, being good enough for the work.

WITH reference to the action brought by the Whitney Company against Messrs. Stanley, mentioned in last week's *Journal*, it transpires that the Locomobile Company of America, who own a controlling interest in the Whitney Company, is behind the suit. The patent in dispute covers forty-six details in steam vehicle construction, relating for the most part to the running gear, the power transmission, engine and boiler. We understand that the Locomobile Company intends to take action with regard to all infringements of its patents, and that a number of steam-car makers have expressed their readiness to take out licences from the Locomobile Company, in order to protect themselves.

THE Road Carrying Company, Limited, of 7, Victoria Street, Liverpool, has been registered with a capital of £20,000. The directors are Mr. G. H. Cox, deputy chairman of the Salt Union, Limited (chairman); the Hon. A. Stanley, M.P.; Messrs. R. O. Burland, J.P., Wigan; F. R. Dixon-Nuttall, St. Helens; T. Thornycroft Vernon, Liverpool; Max Muspratt, Liverpool; and G. W. Paton, Liverpool. The offices are at 7, Victoria

Street, Liverpool, and the company will establish a garage as well as carry out road-carrying operations.

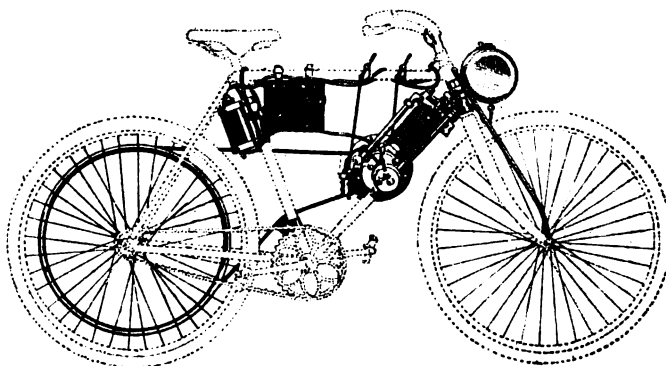
THE *Surveyor* returns again to the suggestion for a new road from London to Windsor which was outlined in its columns by Mr. W. Rees Jeffreys in November last.

HORSES are learning to jump safely from out of the way of the motor-car. Mr. Estcourt was driving his motor-car in Yarmouth the other day when he passed a horse, which became frightened, swerved on to the path, and dashed over the palisading fronting Sefton Terrace. The animal was extricated from the garden, and found not to have sustained any serious hurt. Evidently the horse had had a good automobile education.

VERY comprehensive is the new catalogue of the British Electromobile Company, Limited, of 4, Bloomsbury Place, W.C. A useful article on the equipment of the company's electrical cars precedes a series of illustrations of landaulettes, voiturettes, wagonettes, pleasure brakes, delivery vans, etc., in all of which the Leitner battery is employed. The company possesses facilities for the housing, cleaning, and maintenance of electrical vehicles, and will shortly stock a number of cars for hire.

MESSRS. J. ROTHSCHILD and Son, Ltd., 1, Endell Street, London, W.C., is the title of a company formed, with the Earl of Shrewsbury and Talbot as chairman, to develop the English business of Clement Rothschild and Messrs. J. Rothschild and Son, both well-known in France, as makers of motor-car bodies, the former dealing with the business in a wholesale way. The company will be among the exhibitors at the forthcoming automobile show.

THE Garrard Manufacturing Company, Limited, Magneto Works, Ryland Street, Birmingham, are placing on the market complete motor sets suitable for fitting to existing strong roadster bicycles. Although the complete motor set only weighs from 25 lbs. to 30 lbs., bringing the entire weight of the machine well under 65 lbs. all told, the power given out by the "Clément" motor is claimed to be sufficient to take a rider up any ordinary hill without assistance. It will be noticed in the illustration that there are two tubes that run almost parallel with the front forks, these serving the double purpose of strengthening the front forks and supporting the petrol reservoir. The motor weighs 15½ lbs.,



and develops 1 h.p. at 1,900 revolutions. Its features are an external flywheel, the method of opening the exhaust valve, similar to the Buchet; a compression cock attached to the cylinder, and the contact-maker, composed of a cam with notches and of a trembler. The contact is obtained, not by the sudden fall of the trembler on a platinum screw, but by the pressure on that screw on the back of the trembler.

THE British Automobile Commercial Syndicate, Limited, have taken the premises at 1, Endell Street, W.C., adjoining their present dépôt in Long Acre. The ground floor will be used as show-rooms, the first floor as offices; the second floor will be devoted to accessories and will also be the home of the "Maison Talbot" for the supply of Talbot tires; and the third floor will be given up to automobile clothing. With regard to the Talbot tires, we are informed that Lord Ingestre has used them on a De Dion voiturette on journeys aggregating 4,800 miles, and that they were then in a sound condition. The Hon. C. S. Rolls has fitted his 20 h.p. Panhard with these tires.

CORRESPONDENCE.

THE CENTURY MOTOR-TANDEM.

To THE EDITOR OF *The Motor-Car Journal*.

SIR,—You are good enough to allow your journal to be used as a medium for inquiry and reply respecting matters relating to motoring. Will you kindly permit me to ask any reader who has used the Century motor-tandem to favour me with his opinion upon its merits, stating whether it is adapted for a hilly district and whether its brake power is effective? An opinion, based on a fair experience, as to its suitability as a touring motor vehicle will be most acceptable.—Yours truly,

A READER.

MOTOR-BICYCLE CONSUMPTION.

To THE EDITOR OF *The Motor-Car Journal*.

SIR,—In your last issue you mention, under "Here and There," the fact that at the recent Liverpool trials the R. and P. motor-bicycle ran 81 miles on nine half-pints of petrol. I should like to remark that my 1900 pattern Werner, with surface carburettor, has on several long runs been found to use exactly one quart for 35 miles; nine half-pints would therefore run it 78½ miles, and but for a leak in the top of the tank, which is now soldered up, the efficiency would have been better still. It would be interesting to know the amount consumed by other types.—Yours truly,

T. FREDK. HUNT.

LICENCES FOR MOTOR-CARS.

To THE EDITOR OF *The Motor-Car Journal*.

SIR,—If "Planeur" applies to his district Inland Revenue officer for Form 132 B, he will find that the Inland Revenue Department only demand the duty under the "Light Locomotives on Highways Act" (59 and 60 Vict., c. 36), 1896, on and for mechanically driven or drawn carriages over one and under three tons in weight, this duty being for locomotives between one and two tons weight £2 2s. and for locomotives exceeding two tons £3 3s.; plus ordinary carriage duty.

A footnote on this form reads as follows:—"For a locomotive not exceeding one ton in weight, or of the weight of three tons or upwards, which is liable to duty as a carriage or a hackney carriage, an ordinary carriage licence should be obtained." The Act under which cars under one ton weight pay duty is not the "Light Locomotives on Highways Act" of 1896, but the "Customs and Inland Revenue Act" (51 and 52 Vict., c. 8), 1888. Motor-cars under one ton (and over three) in weight, and motor-cycles are locomotives under the 1896 Act as far as speed is concerned, but are not locomotives as regards duty. Anomalous, but most motorists thereby save at least two guineas, so there is a grain of comfort to be got out of the absurdity.—Yours faithfully,

ARTHUR J. CARY.

FRANCE COPYING ENGLAND.

To THE EDITOR OF *The Motor-Car Journal*.

SIR,—We have noticed with some amusement the correspondence continuing from week to week upon the subject of "France copying England." The two points most dwelt upon have been "separate liner and water jacket" and "a straight exhaust-valve spindle." With regard to the first, a separate liner has been the constant gas engine practice for a great many years in this country; the mere substitution of one metal for another in a water jacket is, we think, not worth talking about.

With reference to the second point, "the straight exhaust-valve spindle," we should like to inquire what this means. For if it be taken literally, surely it has been the usual gas and oil engine practice for many years past and to the present time to have these valve spindles straight. We should like to know what is meant by "straight exhaust-valve stems." Surely Mr. Edge should be the last person to claim special originality, particularly as against French designs, when the whole design from one end to the other of the Napier car is the Panhard or French construction, with some slight modifications made by Messrs. Napier.—Yours faithfully,

ROOTS AND VENABLES.

To THE EDITOR OF *The Motor-Car Journal*.

SIR,—I have read Mr. Edge's letter on this subject in your current issue, and I take grave exception to a certain element he introduces, namely the personal one. In the first place he states definitely that I have some evident reason for not wishing to see it clearly proved that England has been in advance of France in some directions. May I point out that I have never questioned that; indeed, in many constructional parts the Napier is in my opinion superior. But the question was—had the French copied the English; and I have demonstrated that such was not the case. I must ask Mr. Edge not to credit ulterior motives to me, in face of a statement I made in my first letter, which was that, apart from many of my relations being French, I have no personal bias or other interest in the subject. However, to place the matter clearly before you. Some letters and advertisements appeared some weeks back stating, among other things:—(1) The aluminium water jacket was copied from the Napier by the big French makers. (2) Also straight exhaust stems. (3) The exclusive use of electric ignition. (4) Enclosed valve gearing and cam shafts. Now I enclose a letter from Messrs. Mors. In it they state that

the aluminium jacket was fitted to their first machines turned out in 1900. The aluminium-jacketed Napier engine did not appear in public till later. I presume the case is that both Mors and Napier designed the same thing at the same time without knowledge of the other's doings, but certainly Mors appeared first on the market.

With regard to the second statement I beg to say that in all his big car engines Mors has always used straight exhaust valve stems, and Mors first built motors in the very early nineties before the Act of 1896 was passed allowing automobiles in England. How then can Mr. Edge state that Mors has copied Napier? Thirdly and fourthly: In all his engines Mors has always enclosed his valve gear. In the 1900 engine referred to he placed his 2 to 1 pinions on the outside for the first time. The original arrangement of his vertical engine of '98 is shown on page 164 of the "Automotor and Horseless Vehicle Handbook" published in January, 1900. Moreover, Mors has always used electric ignition, and as I have before stated, he was making petrol cars long before any English firm.

It is also stated that Mr. Edge's information is all first hand, etc., and that mine is "only something I have heard of." To show the truth of this statement as regards the Napier, I went through Mr. Napier's workshops on more than one occasion in 1900, and I have since taken great interest in this machine. As to the Mors car, I have ridden, driven, and assisted in taking to pieces most types during the last two years. Again I must ask Mr. Edge to refrain from introducing matter not at all "pertinent" to the title of his letter, as I am sure my personal acquirements and qualifications have no more to do with the subject under discussion than Mr. Edge's own.

I trust you will allow me to apologise to Mr. Mark Mayhew for my error of memory regarding the metal used for the jacket of engine of his 1900 16 h.p. Napier. Permit me to point out that if an engine be painted all over with aluminium paint, it is only possible to ascertain the real material by scratching it off. Needless to say I do not indulge in these little liberties. As to my capabilities of distinguishing aluminium when I see it—and I have had much work done in it—I may say that I was experimenting with alloys of this metal in '89 and '90 when it was very expensive, nevertheless I still experience a difficulty in distinguishing an aluminium-painted article from an aluminium casting when at a short distance from the object. I may point out that the fact of Mr. Mark Mayhew's engine having or not having an aluminium jacket does not affect my argument that Mors produced the same thing as early, if not earlier than Napier, and Mors therefore could not have copied it.—Your truly,

ANTHONY WESTLAKE.

HILL CLIMBING AT RICHMOND.

To THE EDITOR OF *The Motor-Car Journal*.

SIR,—Will you kindly permit us to air a grievance *re* above. We see that fifteen cars were timed and twelve of these were driven by members of the trade; to all intents and purposes it was a trade function. Your report states that the meeting was unofficial and informal; but the names of the two timekeepers are sufficient to vouch for the absolute accuracy of the tests and every person reading your report would accept such timing as official. We think that the whole trade should be invited to compete in such tests, or if their presence is not desired such meetings must be treated as private.

We are provincial makers and do not belong to the Club, and cannot therefore have notice of such events which our trade competitors who are members of the Club are able to obtain. There is a growing feeling amongst provincial manufacturers that some events held by the Automobile Club, whether official or otherwise, are largely participated in by members who are also prominently engaged in the sale of cars.—Yours faithfully,

PROVINCIAL.

QUERIES *RE* STEAM CARS.To THE EDITOR OF *The Motor-Car Journal*.

SIR,—Like your correspondents "Naval Engineer" and Mr. W. Lee, I am an intending purchaser of a steam car, and have wondered how the difficulty of the exhaust steam could be overcome. Messrs. Clarkson, Capel and Company, I understand, have brought out a condenser and oil separator by which the exhaust steam can be used over again, and which, they say, enables a car to run for seventy miles instead of twenty, on twenty gallons of water. I shall be glad to hear from any of your readers how it works in practice. I now have one or two queries of my own to make. Can one use very hard water in these cars without the trouble of furring? With regard to hill-climbing, I shall be grateful for information as to the gradient and length of some suitable hills in the immediate neighbourhood of London for testing a car, the steeper and longer the better. As I live in a very hilly district, I wish to satisfy myself that they really will "climb any hill" as advertised. All the makers decline to send even a second-hand car into the country for trial.—Yours truly,

RUSTICS.

MESSRS. EDWARD DE POORTER AND COMPANY, LIMITED, the British agents for Wydts Allumeur Electro Catalytique, write:—"Before we make any definite statement as to reliability and working of this device we wish to give it a longer test. However, we may say that so far it acts wonderfully. The sensation of seeing a petrol motor working without lamp, coil, accumulator, or trembler for the first time, we must confess, was somewhat peculiar."

ALLEGED OBSTRUCTION.

At Buckingham Borough Petty Sessions, Frank Whitworth, of Biddlesden House, Bucks, was charged with causing obstruction on the highway by leaving his motor-car unattended. The police stated that the car was left outside the Swan and Castle Hotel from 7.15 to 10.10 p.m. without any light attached. The road at that spot was very narrow, and there was insufficient room for two vehicles to pass. A fine of £1 18s. inclusive was imposed. Counsel for the defence said the money would be paid, but notice of appeal was given.

NOTICE REQUIRED FROM DRIVERS.

Before Judge Lush Wilson at the Plymouth County Court, Mr. John F. Selmon, trading as the Plymouth Motor-Car Company, sought to recover £1 10s. from W. J. Willey, at one time a driver in his employ, a week's wages in lieu of notice. Mr. J. Shelley, who represented plaintiff, said that defendant was paid 30s. a week for driving a motor-car, and on a Saturday night he left without giving notice. This necessitated plaintiff's foreman being taken from another task, and one of the cars remained idle for some time, resulting in a loss to plaintiff. Mr. Shelley's statement was corroborated by Walter Smith, manager for the plaintiff. Defendant averred that he had given verbal notice eight days before, but this was denied. His Honour held that no notice had been given, and judgment was given for plaintiff.

REPAIRING A MOTOR-CAR.

CAPTAIN AUGUSTUS KENT, R.N., of Billericay, Essex, sued Messrs. Davenport Vernon and Company, Limited, of High Wycombe, at the Wycombe County Court, for the sum of £13 15s. 8d., damages sustained by the plaintiff by reason of injuries to his motor-car in consequence of the negligence of the defendants or their servants. The particulars of claim included the sum of £7 10s. in respect of the five days during which the car was useless, undergoing repair. Mr. Frank Dodd, who is himself a motorist, appeared for the plaintiff, and the defendants were represented by Mr. J. Bliss. Captain Kent stated that on September 18th he was going to Wycombe on a De Dion 3½ h.p. motor-car. It was moving very well indeed. He heard a scraping noise near Amersham, and found it was necessary to put up the car at Upper Temple Farm. He drove the car to the farm-yard and left it there, and he and his friend went to High Wycombe. Next morning he called on the defendants and asked for a man to see to the clutch gear, as he imagined the scraping noise he had heard on the journey was in that part of the machinery. The man helped him to take off the clutch gear, but no fault was found there. Witness took train to London, calling on the defendants and giving orders that the car was not to be brought down. Later he returned and was surprised to find the car at the works, and a bill was presented to him for £3 2s. 6d. He tried to start the engine but it would not go. Ultimately they got it to start, but it went so badly he had to wire to Mr. R. E. Knights, of Chelmsford, to examine the car. Mr. Knights also gave evidence, and said the car had been in a collision and was quite unfit for use. Evidence for the defence having been given, His Honour the judge, Sir Alfred G. Marten, said the evidence was not such as to justify him in coming to the conclusion, unless he had further evidence, that plaintiff was entitled to the return of the money which he had paid defendants. As to the other sums which had been incurred by him in consequence, as he held, of the non-execution of the work by the defendants, he had no doubt that Mr. Knights was paid for his services £1 13s. 2d., and for the repairs to the machine £1 17s. 6d., and that plaintiff was entitled for the five days in which he was unable to use the vehicle and his expenses of 15s. He thought the plaintiff was entitled to judgment for £11 15s. 8d. He was satisfied that the defendants, through their servant, were guilty of negligence in regard to the repairs. It appeared that plaintiff while driving the car found there was a scraping inside, which he desired to have rectified. He also gave instructions that the car was not to be removed from the farm. Defendants, contrary to these instructions, moved it down from the farm to their works, and while running it met with a collision which was not communicated to the manager until the damage was pointed out by the plaintiff and Mr. Knights. There was undoubtedly negligence, and plaintiff had made out his case entitling him to judgment for £11 15s. 8d. and costs.

AN IRISH CASE.

COLONEL JOHN R. MAGRATH, Baun-Aboo, Wexford, sued the National Telephone Company, at the Wexford Quarter Sessions, for having wrongfully and negligently placed wires upon a public highway between New Ross and Waterford, whereby plaintiff's motor-car was obstructed, broken, and damaged, and plaintiff suffered a loss of £50. After hearing witnesses and counsel, his Honour said that the parties on both sides gave their evidence very fairly, though it was contradictory. Colonel Magrath, who at the time of the accident did not appear to be any way flustered, had stated only what he believed to be perfectly true. He said that there were no wires on the pole broken at all by the accident. Where, then, did the wires on the ground come from? Colonel Magrath said they must have been lying along by the side of the road. He (the judge) was asked to jump to the conclusion that these wires belonged to the Telephone Company, but there was no evidence to that effect given, only the Colonel stated the wires looked like telephone wires. There had been no neglect proven on the part of the defendants, and he was bound, therefore, to dismiss the case. He allowed £2 expenses.

EXPERIMENTING ON A MOTOR-TRICYCLE.

At the Derby County Court, before Judge Smyly, David Roberts, electrical engineer, of Derby, sought to recover £27 from Edward Goldstraw for work done to a motor-tricycle. The plaintiff's case was that he did certain work to defendant's motor-tricycle at his request, and carried out various experiments in connection with fixing a free wheel and a Weston clutch to the tricycle and transferring the petrol on to a particular valve. He asserted that Goldstraw, against his advice, would have these things, but the defendant denied this and said he told plaintiff he should be responsible for any experiment he tried. He was willing to pay for the work that he had ordered.—In the end his Honour said he considered the £22s. paid into court was sufficient to satisfy the plaintiff's claim, and gave judgment accordingly.

THE DETENTION OF A MOTOR-CAR.

SOME litigation has arisen out of a hire purchase agreement in regard to a Daimler motor-wagonette, Mr. Ernest W. Hart, of Luton, claiming that Mr. George Senior, of Hull, should deliver up to him the vehicle or its value. He also claimed damages for detention. It appeared that in November, 1900, Mr. Hart owned the car, and sent it to a firm of manufacturers to have it done up. Ultimately, after trials, one of which included a trip up Primrose Hill with seven or eight persons on the car, the defendant entered into the agreement in question. Under that the price was fixed at £265, and defendant paid £125 down, the remainder to be paid by monthly instalments of £11 13s. 4d. Plaintiff's witnesses said the car was sent down to Hull in December in perfect condition, but after about three months the defendant made default in his payments, and as the plaintiff also alleged that he did not keep the wagonette in proper repair, as he undertook to do, plaintiff claimed its return or its value, as he said he was entitled to do under the agreement. For the defence, however, it was said that the car when it arrived was not in good condition, and when started would only go one hundred, or at most one hundred and fifty yards, and then stopped suddenly. In consequence the defendant had had to incur considerable expense to get it in order, and had lost profits which he placed at £7 a week, because it appeared he used the wagonette for the purpose of conveying passengers about Hull. Another suggestion for the defence was that the car sent to the defendant was not the car he agreed to take on hire. The defendant accordingly counter-claimed for the return of the money he had paid, £32 for repairs, and £75 for loss of profits. The jury found for the plaintiff with £35 damages. They also found for the plaintiff on the counter-claim. His Lordship entered judgment for the plaintiff for £265, to be reduced to 1s. on the return of the motor-car, with £35 damages for its detention.

WE notice that one of our cycling contemporaries has discovered a new form of motor-bicycle, Mr. B. Rotherham, of Coventry, having been found "riding a machine fitted with a 2½ engine on the brake." Probably the next advance will be to put the engine in the inner tube of the tire!

THE Forman Motor Manufacturing Company, Day's Lane, Coventry, are now making a four-cylinder throttle-governor engine with enclosed valve gear which is automatically lubricated, and fitted with solid heads to cylinders. Cylinders and heads are cast in one piece. The engine runs at a normal speed of 900 revolutions per minute, and develops 16 h.p.

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COMMENTS.



DAIMLER MOTOR BICYCLE (1885)

ON Tuesday evening, Mr. Henniker Heaton asked the Home Secretary whether his attention had been called to the danger of incompetent persons driving motor-cars in this country; and whether he would take steps to issue licences to competent drivers only, on the plan adopted in America. Mr. Grant Lawson, in reply, said this question should have been addressed to the President of the Local Government Board. His right hon. friend had received representations on the subject, but on his present information it did not appear to him that danger from motor-cars arose from want of skill on the part of the drivers. He was afraid there would be much difficulty in giving effect to the suggestion of the hon. member.

Motor-Cars and Manœuvres.

ALTHOUGH motor-cars have had to suffer from the lack of knowledge of military men with regard to their utility in warfare, their value in manœuvring at home is being amply demonstrated. On Sunday the South London Volunteer Brigade, consisting of nine battalions, held a tactical night march around Wimbledon. Some of the commanding officers walked, but others covered the ground in motor-cars. The Brigadier, Colonel Fludyer, of the Scots Guards, travelled by automobile, making a thorough inspection of the various outposts. So far as we can hear, all were well satisfied with the behaviour of the various cars engaged in connection with the march.

Activity at Lincoln.

AUTOMOBILISM has many good friends in Lincolnshire, and the Automobile Club of that county is evidently prepared to do all that is possible for the furtherance of social intercourse and automobile knowledge amongst its members. The annual dinner is to be held at Lincoln on the 22nd inst., and invitations will be extended to the Nottingham and Yorkshire Clubs, as well as to members of the A.C.G.B.I. To-day (Saturday) Captain J. A. Cole will give a lecture on "Ignition" at the Club headquarters, the Saracen's Head Hotel, Lincoln.

Lawyers and Automobiles.

THE dreariness of the law courts is often relieved by judicial attempts at humour, and our judges evidently regard the motor-car as a fit subject for merriment. There was an amusing case before Mr. Justice Bigham the other day, when a coal-dealer and wagonette proprietor confessed to a desire to make £7 a week profit out of a motor-car which "he had run on one wheel." The driver of the car said the vehicle jibbed every hundred yards, and to get it to start again he "had to knock a lot of wind into her." The particular car in question was said to have been kept in an open shed, and formed a roosting-place for hens—a foul use, indeed. In opening the defence, Mr. Witt, K.C., said there was some consolation in this case, so far as members

of his profession were concerned. He had feared that motor-cars would oust the horse from his long and honourable career, and that there would, in consequence, be less litigation. After what he had heard about automobiles, there was a magnificent prospect of many law suits in the future. If such is the case, we would advise lawyers to become motorists—if only to realise that there is a serious side to the subject.

The Carriage of Goods by Motor Vehicles

CONSIDERABLE interest is being taken throughout the North of England in the Road Carrying Company, Limited, the main lines of which have already been described in the *Journal*. We now learn that Mr. Ernest A. Rosenheim, B.Sc., A.I.E.E., has been appointed engineer to the company—an appointment upon which both may be congratulated. Mr. Rosenheim took his engineering degree with Professor Hele-Shaw, F.R.S., and served a pupilage with Crompton's, Limited. Latterly he has been with the General Electric Company, Limited, from which concern he has resigned in order to take up a position with the Road Carrying Company, Limited. Mr. Rosenheim was assistant hon. sec. to Mr. Shrapnell Smith at the 1901 Liverpool trials, and will be active in connection with the forthcoming exhibition at the Agricultural Hall. In this connection we may add that the resignation of Mr. Shrapnell Smith from the hon. secretaryship of the Liverpool Self-Propelled Traffic Association will take effect as from April next, when a meeting will be held and plans for the future of the Association decided upon.

The Calculus of Probability.

IT speaks well for the capacity of modern actuarial methods that insurance is to be obtained not only against accidents and claims for damages from car-owners, but against legal expenses for speed prosecutions. The chances of occupying the martyr's dock offer an interesting, if painful, subject of calculation, which would, we should imagine, have puzzled Laplace, whose reported last words, "*L'homme ne poursuit que des chimères*" now need a corrigendum. For *homme* read *gendarme*. The factors include the size and noisiness of the car quite as much as its speed, while important variables are the driver (by no means directly as *his* speed proclivities), and, largest of all the county. It is odd how the vagaries of ill-luck in this direction pursue some men rather than others, apart from any obvious reasons. The one thing omitted specifically from the insurance (in one prospectus sent to us) is the amount of the fine. This is presumably supposed to depend on the magistrates' digestions, and to be, therefore, incalculable.

The Bicycle Boom.

THE unwisdom of prophecy is being very much illustrated by the distinct signs that, in spite of all that has been said against it, the motor-bicycle has "come to stay." The objections to it are, as experience has proved, largely imaginary, and, for the rest, are more than counterbalanced by its convenience and cheapness; while among the marvellous variety of designs that are now available some at least are sufficiently near

perfection for practical purposes. The amount of interest shown in them by the hitherto non-motoring section of the public, as vouched for by cycle and motor agents in all parts of the kingdom, show that this is becoming generally appreciated. The value of motor-cycles has hitherto been largely educational, the man who had one seldom being content till he got a car; but it is not at all unlikely now that a good proportion of the devotees of four wheels will not be satisfied without including a two-wheeler in their stud.

As regards the Ladies.

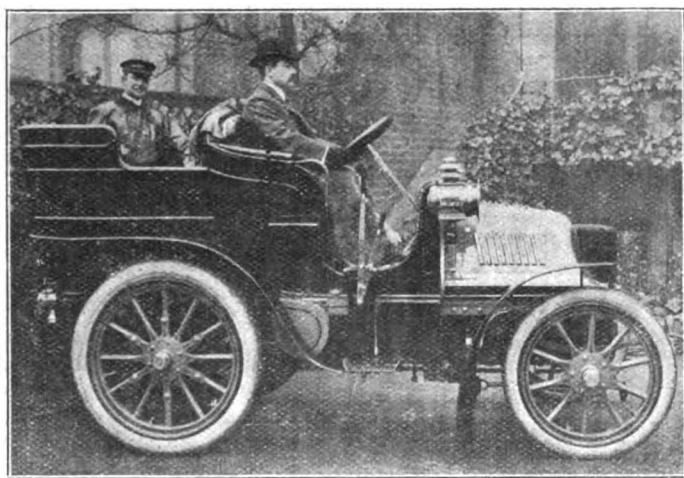
It cannot be said that the lady's machine lends itself to a motor gracefully, but then, even in its non-motor state, it is at best a somewhat unmechanical concession to fashion, in which the admirable design of the diamond frame has to be sacrificed.

The motor-tricycle would be more easily adapted for ladies' use, but for some reason the attempts to create a demand for a lady's machine of this kind seem to have fallen flat so far. It must not be forgotten, however, that nearly seven years elapsed after the introduction of the ordinary lady's bicycle before it attained a wide popularity, and the rate of progress is, as a rule, much greater than the rate of public acceptance of it. That ladies are becoming interested in the subject is generally recognised, and the article by Miss Kennard in this week's issue shows that that keen motorist recognises the advantages that are associated with the two-wheeled machine.

Mr. W. J. Peall's Car.

COMMENCING his automobile career on a 6-h.p. Daimler, Mr. W. J. Peall has advanced a stage and is now the owner of a 12-h.p. car, upon which he has already run nearly a thousand miles. The new vehicle is so arranged that it is not necessary to have

the usual assortment of petrol tins, oil cans, dirty rags, etc., sur-



MR. W. J. PEALL ON HIS 12 H.P. DAIMLER.

rounding the driver's feet, while the body is of a comfortable tonneau type, with accommodation for three passengers on the rear seats. The underworks and the wheels of the car are painted primrose and lined with black, the body being painted dark green. All the fittings are of rolled silver, giving the automobile a remarkably fine appearance. Wherever the car goes it will be a credit to the British industry, for Mr. Peall has his motor-vehicles kept in as smart a condition as any fashionable horse-drawn carriage. In fact, instead of employing a mechanic, he engaged a coachman whose earlier training has well fitted him for the work of sending the car out in the smartest possible fashion. Doubtless other owners of automobiles may be inclined to take the "cue" from Mr. Peall.

Some Grievances.

MOTORISTS have always regretted the fact that so many drivers of horse-drawn vehicles leave their animals unattended when delivering goods, seeking refreshment, etc. These unattended horses are always a source of trouble, not only so far as automobilists are concerned, but also with regard to owners of traction engines, and tram-car drivers and others; for the absence of anyone to watch any sudden change of disposition may lead to accident and is, moreover, contrary to the law. Akin to this matter is the regulation of traffic in the London streets. It is gratifying to know that these matters are being submitted to the Home Secretary and to the Commissioner of Police, with a view to action being taken to minimise the dangers and difficulties now attaching to both inconveniences of the road.

Good Business.

UNDER the authority of the Automobile Club the statement has gone forth that at least a thousand automobiles will be sold in London alone during the present year—a very modest estimate indeed. There is no doubt that the present activity of the motor-car industry will receive a great impetus from the forthcoming exhibition at the Agricultural Hall, and that the motor-car business is now rapidly advancing to a season of prosperity. This is particularly gratifying to those who pioneered the automobile in the days when the public were ill-favoured towards it and the prejudice of rustic people and those of narrow ideas was keener than it is in the present year of grace.

Exeter.

COMMERCIAL men throughout the country are watching developments in the automobile industry, and several local Chambers of Commerce are considering the suitability of their towns for the location of motor-car works. The Exeter Chamber of Commerce, which takes an active interest in the welfare of the city, has decided to have a special meeting to consider the prospects of success for the automobile industry there—should such be established—and to invite the Traction Committee of the City Council to be present.

Motor-Car Imports.

THE official list of imports published in another column will be regarded with interest. They show that the imports from France alone during the first month of 1902 were nearly equal to the whole of our imports in the last month of 1901, more than sixty cars having been sent here *via* Boulogne and Dieppe. On the other hand, the receipts from Belgium were scarcely half the value of the imports in December, and the most conspicuous feature of the Belgian exports to England was the presence of about a dozen motor-cycles in the returns. The value of the German shipments showed a slight increase, while an export of nine cars has quintupled the Dutch exports to Great Britain. A slight falling-off is reported from the United States, but looking at the total figures they show a larger import than in either of the last two months of the year. In our issue of the 15th ult. we published the Board of Trade figures, which recorded an importation valued at £43,000—the difference is probably due to the inclusion of some "motor-trucks" for tramcar work in the latter figures.

Motor-Buses for London

As announced last week the London Road Car Company has decided to make a series of practical experiments with a view to the adoption, if popular and economical, of mechanical traction. We are now able to give an illustration, on page 929, of the coke-fired steam omnibus made for the company by the Thornycroft Steam Wagon Company. This vehicle, which seats

thirty-six people, has been approved by the authorities at Scotland Yard, and is intended to ply in regular service between Hammer-smith Broadway and Oxford Circus. The mechanism is of the Thornycroft patent chainless type, but the road wheels are of rather larger diameter than the firm usually fit to their steam lorries. The carrying body is bedded on rubber, and there are special provisions to reduce noise and vibration, while powerful brakes and reversing gear give the driver absolute control of the vehicle. The new omnibus is capable of an easy eight miles an hour, at which pace it will be able to overtake all the ordinary horse-drawn omnibuses on the road.

A Wall from Reading.

REALLY the local authorities about Reading will have to look after the dogs of the town. From a letter by Mr. F. G. Rowcroft to one of the Reading journals it would appear that the people there have a most canine fancy. "On Sunday last," writes Mr. Rowcroft, "a party of us, with five dogs, were walking on the Oxford Road, and down the hill between Purley Post Office and Purley Hall a motor-car containing two men and one person in female dress appeared and dashed past us through the midst of our dogs like an express train. It was going as near forty miles an hour as a motor-car can go. One dog we gave up as lost, and it escaped by a hair's breadth." This is a sad case; but the escape of one dog by a hair's breadth is splendid testimony to the cleverness of the motor-car driver or the cuteness of the dog. It must have been an interesting scene, for "in my futile rage," says Mr. Rowcroft, "I so far forgot myself as to shake my fist at the man in the back seat. Good-bye to pleasant peaceful country walks, rides, and drives, with these infernal machines monopolising the even most countrified roads. But for the sake of one's life and limbs there ought to be police on bicycles, or mounted men, to patrol certain roads, particularly the Bath and Oxford roads." Why be satisfied with police on bicycles or horses? The better way would be to mount the police on motor-cars and let them arrest all dogs wandering on the roadway. They might also have power to warn persons shaking their fists at other people.

Horses in Paris.

AT a time when the London omnibus companies are experimenting with mechanical traction, some figures just published in Paris have considerable interest. There are 90,796 horses still employed for various purposes in the French capital, but the number of steeds available for requisition in the case of mobilisation by the Ministry of War is 5,900 less than was shown in the corresponding figures of last year. The omnibus company had nearly 2,000 more horses in its stables a twelvemonth ago than it has now. The chief hackney-carriage owner has reduced his stud of animals by 750, and the remainder of the diminution is mostly accounted for by private persons having discarded horse-drawn vehicles for motor-cars. In superseding cab and omnibus horses by mechanical traction a great humane work is being done in Paris.

What might have been.

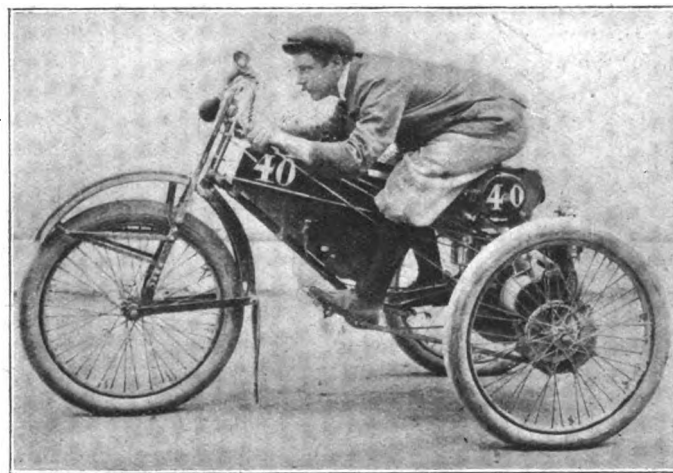
THERE were all the elements of a tragedy, without the sad conclusion, in an incident which occurred in a London thoroughfare the other day. A small girl of about ten years of age was wheeling a perambulator along the roadway when a motor-car came speeding along. Losing her head the girl rushed to the pavement for safety, leaving the perambulator in the middle of the road. A young mechanic who attempted to drag the baby carriage out of danger was just too late, for it was overturned and partially revealed a small white bundle—which all present thought was a baby. This was hauled out. When the excitement had subsided it was discovered that the bundle was—"washing"!

Automobiles and Railways.

LAST week we referred to some interesting developments in connection with motor-vehicles which were being undertaken under the auspices of some Irish and English railway companies. Already Belgian and Italian railway companies have adopted the automobile for service in conjunction with main lines, where it is often difficult to secure convenient secondary trains, and on branch lines where passengers are few. In view of the motor-omnibus experiments now being carried on in London, railway managers are showing increased interest in the automobile movement, and some practical developments are likely to take place before the end of the year.

A Kentish Enterprise.

UNDER the presidency of Dr. Oldfield, the statutory meeting of the Bromley Autocar Company, Limited, has been held, when it was said that the company had five sources of profit—viz., (1) the service of 'buses, (2) the hiring of motor-cars by private residents of Bromley, (3) the sale and exchange of vehicles, (4) repairs of all sorts to motor-cars and motor-cycles, and (5) advertisements in 'buses. The Chairman spoke at some length on the prospects of motor-omnibuses which would run rigidly to time and thus prove admirable feeders to the railway companies. He hoped, too, that the enterprise would be able to find well-paid employment for a number of local lads who were more fitted for mechanical than for office work. Mr. W. Prebble, Mr. Kenyon, and Mr. Draper also spoke, being unanimously of opinion that automobilism would have a good effect on Bromley and the surrounding district.



OSMONT ON HIS RECORD-BREAKING DE DION TRICYCLE.

Axles for Motor-Cars.

A BROKEN axle is capable of such serious results to life and limb that too much stress cannot be placed upon the question of its stability, and it is unfortunate that the design of a front or rear axle is as yet impracticable upon mathematical lines, but must be the result of expensive and even dangerous experimentation. The stress imposed upon these members of a motor-car are so complicated and so nearly incalculable that theory can offer little assistance to the designer with the data at hand, and, further, the qualities of the material employed are far from being perfectly understood. Like most parts of a motor-car, remarks Mr. A. L. Clough in the *Horseless Age*, the axles are generally proportioned empirically as the results of experiments. The great basic difficulty which prevents the actual design of all the structural parts of automobiles is the utter impossibility of predicting the stresses which may be expected to arise from imperfections in the road surface. This is the only difficulty in axle design. When one knows what are the maximum stresses arising

from this source no further difficulty is apparent, although the problem is rather a complicated one. If a vehicle were fitted up with carefully calibrated springs and means were provided to automatically record the extent of the maximum deflection of the vehicle springs due to running at full speed over rough roads, quite a good idea of the axle stresses due to road irregularities for a particular type of carriage could be obtained, which might lead to intelligent proportioning. Much is said about the failure of axles through crystallization, but no such phenomenon seems possible when resilient tires are used, indeed its occurrence at all is scouted by the best authorities. What really happens in the case of an axle which breaks after considerable use, is that it fails through the fatigue due to repeated application of what would be a safe stress if applied as a quiet load. Fortunately, a working formula which may yet be turned to account is at hand for taking into account the effect of repeated stresses.

Electrical Vehicles.

THIS was the subject of the chapter for the Badminton Book on Motoring which was read at the Automobile Club on Wednesday evening by the Editor of the *Automotor*. The paper was a very extensive one and attracted a notable gathering of electromobile experts. Mr. Jas. Swinburne occupied the chair, and among those who joined in the discussion were Messrs. Oppermann, Joel, Northey, Leitner, and Chambers. Dr. Lyon Playfair asked some very pointed questions with regard to the actual cost of electrical vehicles in practical use, and mentioned that, as a result of his inquiries, he found that the annual cost of an electric landau was at present fully £100 a year more than that of a carriage and pair.

"TRAILING CARS FOR CYCLISTS" is the title of a booklet explanatory of the "Royal Eagle" trailing car, which has been brought out by the New Coventry Eagle Cycle Company, Limited.

THE Empress Eugenie is one of the latest converts to automobilism, she having, according to report, placed an order for a 12 h.p. vehicle.

AN electrical omnibus, similar to those which have been in use for some time in Berlin, will be seen on the London streets shortly. This will hold twenty-six passengers, and Messrs. Zadig & Co., who are introducing the vehicle, are sanguine as to its efficient running when tried on the route from Hammersmith to the Caledonian Road.

IN the pouring rain, and on a road lying several inches in mud, Osmont, the well-known motor-tricyclist, has just established a record for the machine ridden by him. He covered 100 kilometres (sixty-two miles) in 1 hour 16 minutes and 55 seconds. The last thirty-one miles were done in thirty-six minutes.

WHILE driving from her house in Tedworth Square, W., to the Imperial Theatre, in her electric motor brougham, on Tuesday, Mrs. Langtry met with an alarming accident, owing to one of the wheels suddenly collapsing. The driver kept his seat and righted the automobile. Although considerably shaken, Mrs. Langtry was fortunate enough to escape serious injury.

THE East Riding Cycle and Motor Company, of Grosvenor Street, Hull, have just brought out a new light car fitted with a 9-h.p. Aster motor under a bonnet in the forepart of a tubular frame. Three speeds forward and reverse motion are provided, the power being transmitted to the gear-box through the medium of a friction clutch, and from the differential cross-shaft to the rear road wheels by a duplicate set of chain and chain wheels.

A NEW undertaking at Coventry is the Maudsley Motor Company, who a few months ago secured a large portion of the old Beeston cycle factory. The plant and machinery is being laid down under the supervision of Mr. A. Craig, the consulting engineer to the company. At first attention is to be devoted to the construction of high-powered pleasure cars. A department for the repair of all types of cars is also being established.

MOTOR-BICYCLES FOR LADIES.

I DARESAY that a good many ladies are anxious, like myself, to purchase a motor-bicycle which can be ridden in an ordinary cycling skirt. Already, makers of these handy little machines are bestirring themselves on our behalf, and we owe them a debt of thanks for their energy and enterprise. But in their gallant endeavours to shield the feminine dress from oil and grease, they are in danger of losing sight of a most essential item—namely, accessibility. Safety and cleanliness are admirable things, but their value ceases from the moment they are not coupled with "getatability." Last week I closely inspected the Phoenix, Excelsior, and Ivel lady's machines.

The Phoenix was a finely-constructed, and, in the main, a well-designed machine, but in several important particulars it failed to realise the ideals of the practical female rider. The exhaust-pipe was placed so close to the exhaust-valve that to remove the cotter-pin and spring was almost impossible, quite apart from the difficulty of doing so without burning the fingers. The tread was too narrow to permit of sufficient clearance, and instead of a proper gear-case, a celluloid chain-case was fitted, which effectually prevented the owner from cleaning the chain, whilst admitting dust and dirt in any quantity from the inside. The exhaust-valve lifter was placed too far away from the hand, and it struck me as questionable whether it were an advantage dispensing with the switch. I make these criticisms with all deference, and fully recognising the general excellence of the machine. As for the Excelsior, it had a specially-built frame of clumsy design, and its lines were not pleasing to the eye. The engine and belt were completely encased by an extremely ingenious birdcage arrangement, and were doubtless calculated to afford satisfaction to a person supremely indifferent to the condition of her engine. It was veiled in mystery—I mean wire—and made one shudder when one contemplated roadside repairs. Let us hope the Excelsior does not require them from feminine riders. Few ladies are mechanics, or, indeed, possess the smallest mechanical knowledge. The use of the spanner is a terrible puzzle to the majority. Everything must be easily got at. That is the first problem requiring solution. It is hard on a woman for valves to be placed in such a position that she has no possible chance of removing them in case of any mishap arising. neither should she run the risk of burning her fingers against an exhaust-pipe.

What we want is this: an engine, preferably hung in a vertical position, when any oil exuding from the crank-case will fall upon the ground. It should be freed at will through traffic, so as to permit of ordinary pedalling when desired. Simplicity and accessibility of all parts; a detachable dress-guard, not hooked to the mud-guards, but capable of being undone by a thumb-screw or butterfly nut; a belt protector that will readily unhinge; plenty of clearance, even if it be obtained at some sacrifice of appearance, for many of us take pride in grooming our own machines, or else are forced to tend them through circumstances. In any case, plenty of room is wanted, as also are wide mud-guards, firmly attached so as not to rattle, and placed a couple of inches from the tires; puncture-proof inner tubes; all levers and brake handles within reach of the hand; a duplex petrol-tank, sufficient for a run of over a hundred miles; a visible feed-lubricator, and space behind the saddle to carry a luggage carrier. These are just a few of the points likely to appeal to the practical lady rider.

I was pleased to find the majority of them embodied in Mr. Dan Albone's Ivel motor-bicycle. That gentleman has evidently grasped our requirements more clearly and comprehensively than most of his competitors.

MARY E. KENNARD.

AN International Exhibition of Sports is to be held in St. Petersburg, from the 1st May to 1st July next. The first section is devoted to automobiles and motor accessories. It is hoped that English firms will take part in the exhibition with the view of giving an impetus to the automobile movement in Russia.

The Chatel-Jeannin Petrol Car.

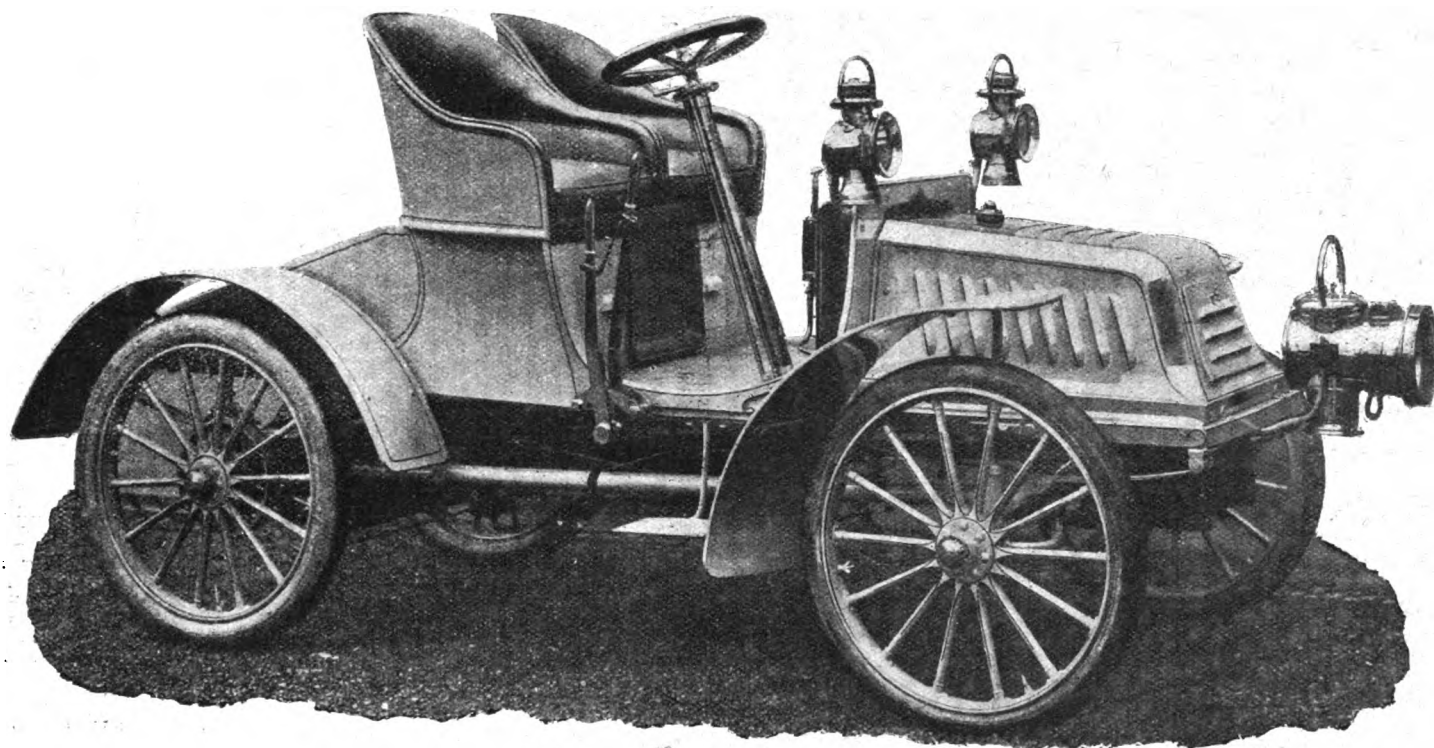


FIG. 1.—GENERAL VIEW OF TWO-SEATED CAR.

WE are enabled this week to give an illustration and a brief description of a new petrol car which has lately been introduced into this country, and which appears to comprise several novel features. The manufacturers, La Compagnie de Construction d'Automobiles Chatel-Jeannin, Mulhouse, Alsace, have for some years been experimenting with the object of bringing out a motor-car with such a simple and effective mechanism that the average man, having no knowledge of mechanics, may readily understand it. This they now claim to have done, and English motorists will have the opportunity of seeing at the Agricultural Hall next month, three or four cars of the new type, petrol or alcohol driven, with *tonneau*, phaeton, and two-seated bodies. Two different powered cars

driver's seat, so it is not necessary to stop in order to oil up. One feature especially is unique, i.e., the sparking or electric ignition, which works in oil. The bore of the cylinder is 105 mm. and the stroke 108 mm., the maximum speed of the engine being 1,500 revolutions per minute.

The 12 h.p. car is built on the same lines as the 6½ h.p., with the difference that the engine is double cylindered, and is located under the centre of the car, the power being transmitted to the back axle by means of two special chains. Any speed from one mile up to fifty miles per hour can, it is claimed, be attained, and on the low gear any hill may be mounted. There are three speeds and reverse, all of which are manipulated by one lever. The change gear is worked on the friction clutch principle.

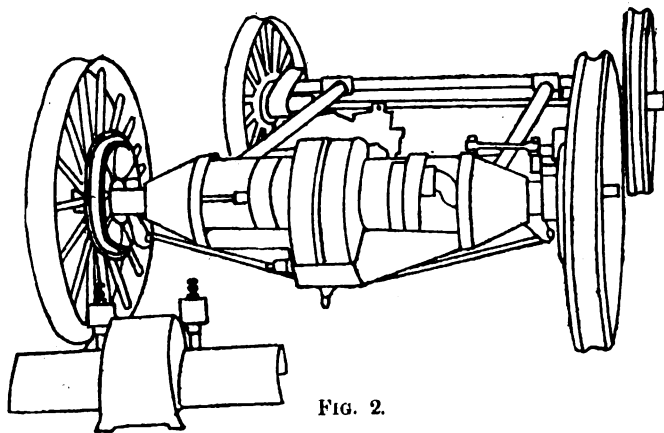


FIG. 2.

are principally being made—6½ h.p. single cylinder and 12 h.p. double cylinder. The sketch (Fig. 2) shows the whole mechanism of the 6½ h.p. vehicle. The motor is fixed on the back axle, the crank shaft being enclosed in an aluminium case, the top of which may be removed in less than a minute, so exposing the entire engine and working parts. It is also possible to detach any wheel or part of the motor without disturbing the remainder. The lubrication is worked automatically by a pump from the

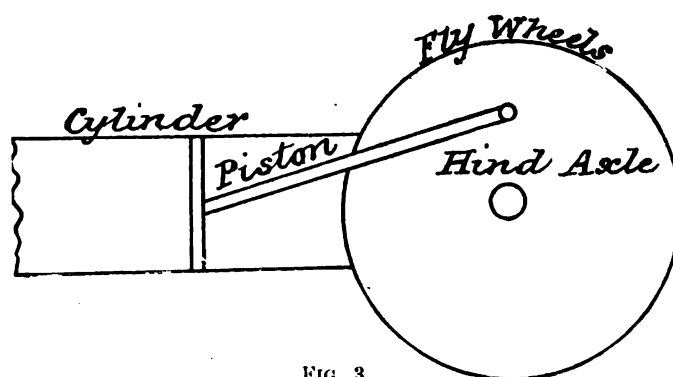


FIG. 3.

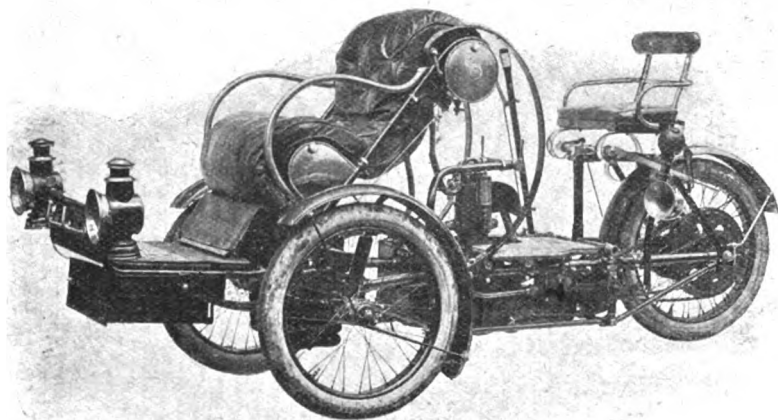
Among the advantages claimed by the makers for the new car are: firstly, there is no vibration whatever, even when the motor is running full speed, and car stationary; secondly, there is no trouble with sparking, as this works in oil. Arrangements are in hand for the introduction of the new car on the English market. In the meantime, anyone requiring further particulars would do well to communicate with Mr. Sydney S. Dixon, Gale House, Bradford, who has a car which may be seen by appointment. — L.

THE CENTURY 1902 TANDEM VOITURETTE.

THE Century tandem voiturette, which is already well known to our readers, has undergone a number of modifications since its first introduction, and in its latest form is capable not only of attaining high speeds on ordinary roads, but is possessed of exceptional hill-climbing qualities. The Century Engineering and Motor Company, Limited, inform us that for the 1902 season they will fit Aster engines only, either 4 h.p., 5 h.p., 6½ h.p., not governed, or 6½ h.p. governed, to order, with gearing in proportion to the engine power.

The water-circulating pump, which is of the company's own construction, is stronger and larger, and is now driven direct off the engine by chain gearing, instead of by a strap from the countershaft. The latter, although the same in principle, has been considerably strengthened in its dimensions throughout; while, in view of the extra horse power which can now be provided, the strength of the high gear chain has been practically doubled in order to have an ample margin of strength, the chains used being the Renold silent solid block chains.

The brakes have been improved, and are now more powerful than ever. The front seat springs have been altered somewhat in the angle, so as to render the seat more comfortable; while the back seat springs are more flexible than hitherto, and in addition the back seat itself is upholstered with good springs, so



that the driver may be said to be almost equally as well off in point of view of comfort as the front passenger.

There are many other small improvements in the way of finish and detail in the 1902 car, which add considerably to the efficiency of the vehicle, the makers themselves considering it from 20 to 25 per cent. better than the 1901 pattern.

A LECTURE on "Cycling in the Alps" will be given by Mr. Rees Jeffreys at the Samuel Morley Memorial College, Waterloo Road, S.E., on this (Saturday, March 1st) evening.

THE 6-h.p. Daimler car, on which the Lord Justice Clerk for Scotland journeyed in the 1,000-miles trial, has travelled 43,000 miles since it left the factory, and is still fitted with the original gear wheels and motor.

MR. ERNEST M. C. INSTONE has resigned his position with the Motor Manufacturing Company, Limited, and is now entering the service of the Daimler Company as manager. Mr. Instone went to Paris about three years ago, and stayed for a considerable time in the French capital acquiring a first-hand acquaintance with the most modern developments of French automobilism. As Paris correspondent of this journal he kept our readers well informed as to the progress of events. In his new capacity he will doubtless be able to add to the credit of the British automobile industry.

CONTINENTAL NOTES.

By "AUTOMAN."

YEAR after year it has been prophesied in France that a slump in motor-cars was coming, and year after year events have exposed the false prophets. The boom still exists, and the really up-to-date makers have their year's production sold ahead. Large numbers of these cars have, of course, been sold to English agents, but there is now a new *debouche* for the ever expanding French trade, and one likely to take a lot of filling. I allude to the American market, which has suddenly developed a demand for French petrol automobiles. The serious demand began last autumn, when several French agents, including Charron, commenced operations on a large scale across the Atlantic. Charley, the French agent of the Mercedes, followed suit, and sold in an incredibly short space of time £20,000 worth of cars, and brought home orders for nearly twice that amount. Every Atlantic steamer from Cherbourg or Havre is now transporting French cars and Frenchmen with vehicles to sell or contracts to place. Clement is now on his way to the United States, and amongst the passengers on the "Savoie" on Saturday last from Havre was Mr. Ernest Cuenod, the vice-president of the Swiss Auto Club and a very prominent member of the A.G.F. M. Cuenod, though of a Swiss family, is, I think, a Frenchman by nationality and certainly by adoption. He is now visiting America with the intention of forming a large automobile undertaking on French lines. Amongst other contracts he has one in hand for the manufacturing rights of the new light cars made by the Société des Établissements Georges Richard. Over two hundred of these cars are, it is said, the subject of an American contract, and I understand that the whole output of the works for the season has been sold ahead. Mors' late manager, Brasier, is now superintending the works of Georges Richard, and building, in addition to the 10 and 20 h.p. light cars, a racing car which is to compete in the Paris-Vienna contest.

THE Nice week and the Nice-Abbazia race, forming, as they do, the practical opening of the racing season so far as automobiles are concerned, deserve a little special attention. In the first place there are two distinct "caravans," which will leave Paris towards the end of March with the "littoral" as their destination, and timed to arrive during the first week in April. One of these "caravans" is the "heavy weights" organised by *La France Automobile*, and includes omnibuses, lorries, and delivery wagons; and the other, organised by the *Auto-Velo*, comprises carriages of all sorts and descriptions. The Nice races include the Turbie hill-climbing competition, the mile race on the level, and the Nice-Abbazia-Nice race. It is well to be noted that no car will be available for classification or prizes which has not completed by its own mechanical means the whole course of each competition.

AT the time of the Paris Automobile Exhibition I gave a short explanation of the term "limousine" in connection with car bodies. It may be useful to give the various names for the different kinds of bodies now employed. Everyone by this time knows the phaeton and the tonneau, and the limousine is more or less a tonneau with a covered-in back seat and a roof extending over the driver's seat. There is, of course, the double phaeton, which has two seats parallel facing the wind, and in which the back seat is reached either by steps between the wheels or by a lifting or hinged front seat. There is, however, now the phaeton tonneau, which differs from the ordinary tonneau in that the back seat is reached through the lifting or hinging of the front seat, but the sides of the back part are high and arranged as a tonneau. There is also the berline, which is a limousine with the back part rounded and with no door at the back. This car generally carries four or more passengers in the back part in addition to those on the front seat. It is a very roomy covered body and good for a family travelling car.

I saw one at Rothschild's the other day being fitted for the Duke of Marlborough on a Mors 15 h.p. frame.

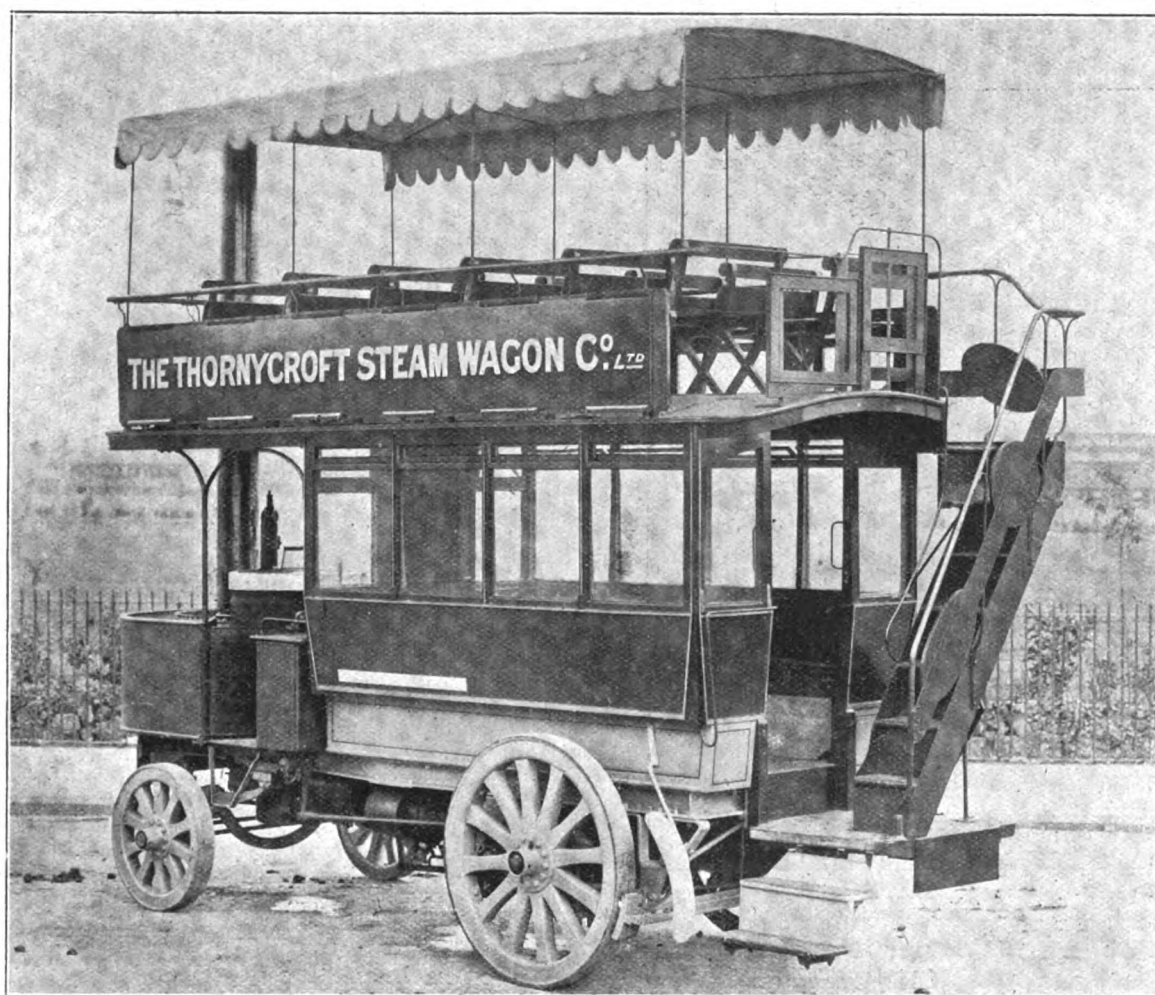
LAST week I gave the readers of the *Journal* an abstract of the rules for the tourist section of the Paris-Vienna motor-car race. The rules for the racing section include the following points. There are to be five classes of vehicles, viz. (1) bicycles weighing less than 50 kilos.; (2) motor-cycles weighing less than 250 kilos.; (3) voitures between 250 and 400 kilos.; (4) light cars between 400 and 650 kilos.; (5) heavy cars between 650 and 1,000 kilos. The last two classes must carry two passengers side by side, and one of them must be a member of the A.C.F. or of an affiliated club. The cars will be weighed empty, that is without passengers, petrol, oil, water, accumulators, tools, or luggage. On the first day the cars will start in the order of entry with an interval of two minutes between each.

fourth class, 300 francs; fifth class, 400 francs. After the end of April the entrance fees will be doubled, and the last day for entrance will be June 15, at 6 p.m.

MESSRS. ROWLAND HILL, King Street, Coventry, have recently extended the size of one of their foundries by taking in a portion of the open yard.

SOME interest has lately been aroused in Belfast by the presence of a motor-lorry on the premises of the Northern Motor Company in Montgomery Street. The vehicle is one of the productions of the Lancashire Steam Motor Company.

ON returning to London from Burton-on-Trent the King journeyed from Euston to Marlborough House in a closed carriage. Some members of the party, including Lord Westbury and Mr. and Mrs. George Keppel, left Euston in motor-cars.



LONDON'S NEW MOTOR OMNIBUS. (See page 924).

The following days they will start in their order of arrival on the preceding day. On the last day they will start in the order of a provisional classification, so that as nearly as possible the car arriving first at Vienna will be the real winner of the contest. On arrival at the "parc" or enclosure at the end of a day's run the cars must be left at once and nothing whatever done to them save stopping the engine, turning off the petrol and flooding the cylinders. No refilling, renewing, or repairs of any kind can be done inside the "parc," but the car must remain there until the time for starting in the morning, and must then be driven outside, where all refilling, etc., must take place, for which no allowance of time is made. Should it be found impossible for any reason to drive a car out of the "parc" it must be pushed out by hand. The entrance fees are as follows:—First class, 50 francs; second class, 100 francs; third class, 200 francs;

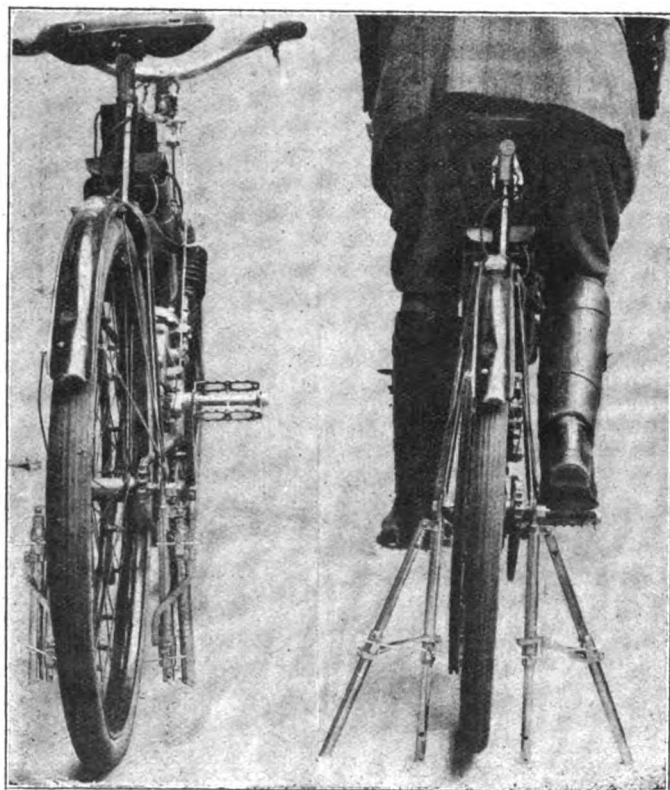
THE Holborn motor-tire will, in future, be manufactured by the St. Helen's Cable and Rubber Company, Limited, of Warrington, St. Helen's and London. A new company is about to be registered and larger premises taken to cope with the demands for this tire.

THE Club Garage which has been established opposite the Art Gallery in Edmund Street, Birmingham, for the storage, cleaning and repairing of motor-cars, cycles, is now open. An electrical plant has been installed with facilities for charging the accumulators of cars.

MR. G. CALVERT, 12, Woodville Road, Mildmay Road, N., and 8, Kingsland Passage, Dalston, N.E., has issued his 1902 list of bicycle motor parts, etc. The list has some interesting notes on motor-cycle fittings, and will be found serviceable to all interested in motor-bicycles.

THE McCURD PORTABLE SUPPORT FOR MOTOR-BICYCLES.

It is always well, when starting out for a ride on one's motor-bicycle, to give the engine a preliminary trial to see that all is in proper order. To do this, without necessitating mounting the machine and pedalling it on the road, some sort of convenient stand must be used. The motor, too, may from one cause or another occasionally have a "fit of the sulks" when out travelling, to discover the cause of which would be greatly facilitated if some means of jacking up the rear wheel and holding the machine firmly in an upright position were at hand. Mr. W. A. McCurd, of 21, Clapton Square, London, N.E., whose ingenious portable stand for motor-tricycles we illustrated some time ago, has now introduced a somewhat similar arrangement for motor-bicycles, which seems to meet all requirements. From the accompanying illustration, which shows the support in and out of use, it will be seen that to the bottom stays near the rear axle, on either side, duplicate pairs of telescopic tubes are permanently and rigidly



THE McCURD PORTABLE SUPPORT FOR MOTOR-BICYCLES.

attached. Within the two tubes nearest to the wheels are inner tubes held in position by a catch or bolt; when the support is required for use the catch is withdrawn and the inner tube by means of a spring is forced out to the ground. The machine is then slightly raised, when the inner tube extends a little further, and the bolt catches in place, supporting the rear wheel clear of the ground. To give ample base so that the machine can be held up in position, the outer tubular supports of each pair are brought into use. These are suitably attached to the inside supports by connecting links, so that when not in use they are held firmly in position parallel to them, and when required to support the machine can be rapidly extended as illustrated. The supports weigh only about $3\frac{1}{2}$ lbs. per pair, so that they are not a cumbersome addition to the machine. They can be quickly brought into use, and when extended the machine is supported from five points, i.e., the front wheel and the four tubes, the width between the extreme outer ones of the latter being 16 ins. So firm is the arrangement that the machine can be jacked up to permit the rider mounting and trying the motor at any time by pedalling.

FLOTSAM AND JETSAM.

BY FLANEUR.

ALMOST is it easier to drive a camel through a needle's eye than to induce the average daily paper journalist to write sensibly on automobile topics. The pity of it is that the prejudices of the unthinking are thereby confirmed. No harm is done in cases where a man has begun to reflect seriously upon the advantages of automobilism; he resolves to inquire into the facts, and, once he is on the right tack, the facts will soon speak for themselves. But the essence of prejudice is a refusal to consider facts, conclusions being formed from false premises, or, oftener than not, no premises at all, but mere fantastic insubstantialities. The responsibility of an editorial writer on any leading organ is therefore great indeed, for its readers, for the most part, have votes, and the occasion may conceivably arise, in the near future, when a large mass of uninstructed opinion will be thrown in the scale against the actual knowledge of the automobile user, who may be overborne by sheer weight of numbers.

A TYPICAL example of editorial misdirection is that of the *Daily News* in commenting on Mr. Henniker Heaton's proposal to license the drivers of motor-cars. So far as that suggestion is concerned, I am not proposing to discuss it here; there are plenty of automobilists in favour of such a scheme, which has even been promulgated by the Automobile Club itself. What it is that calls for comment is the airy inconclusiveness of the *Daily News'* arguments and the consummate worthlessness of its "facts."

TAKE, for example, this statement, which is virtually the foundation of the editorial superstructure:—"The tale of motor-accidents and of prosecutions for dangerous speed is already long enough to warrant some such action by the Home Secretary." Parenthetically, I may remark that the Home Secretary has no jurisdiction in the matter, but that is a detail—a detail, however, which illustrates the characteristic slipshodness of the editorial methods. As regards the "tale of motor accidents," however, I can only flatly deny that it is in any sense a lengthy one, and I have followed the happenings in the automobile world since its earliest days. If there is one thing more surprising than another about the history of the movement it is the comparative immunity from catastrophe which it has displayed, despite the considerable element of experimentalism that has necessarily been part and parcel of its progress.

So far as the public are concerned, the number of victims of unskillfulness or mischance can be counted on one hand, while the ranks of automobilists themselves have by no means been decimated. Not a single pioneer automobilist in this country has been immolated on the altar of his devotion to the cause, and I can only recall two cases of injury, one of which happened during a trial journey on an experimental car, and the other to a French racing vehicle, the user of which, of course, drove at his own risk on English roads. The well-known Harrow Hill fatality, of several years ago, and two other cases on Edge Hill, were individual instances of imprudence on the part of professional drivers, and can scarcely be regarded as typical of the usual behaviour of the average automobilist. On the other hand, accidents with horses are of everyday occurrence, and so commonplace as to escape tabulation in this country. In France another tale could be told, and if the *Daily News* would obtain and ponder over the monthly figures of *Le Velo*, which show the horse to be responsible for about eighty deaths per month in that country, the Bouverie Street organ might be induced to amend its views.

It is not more fortunate in its reference to magisterial proceedings. "Prosecutions for dangerous speed" are almost unknown; automobilists could wish that the charge was more often made. The prosecutions that do take place are for technical

infractions of the twelve-miles limit, a very different thing from furious driving. It is not once in twenty times that any attempt is made to prove furious driving to the danger of the public; the police know better. They also know, what the *Daily News* presumably does not, that a conviction for furious driving is not only much harder to obtain, but brings into the court coffers a maximum penalty of only forty shillings, while with the aid of a Waterbury, or even without, a policeman has simply to "prove" an automobilist to have been driving at 12½ miles an hour, and he may be fined £10 by a vindictive and possibly horse-breeding Bench. This is no hypothesis, but a hard fact which may be commended to the most serious attention of the journal named.

THE discussion on motor-bicycles at the Automobile Club the other evening can hardly be described as satisfactory, for the good and sufficient reason that the experience of the majority of those present was either limited or a minus quantity. Personally, I was profoundly sorry that the Chairman, Mr. Vernon Boys, had not found time, as yet, to make practical investigations into the subject, for if there is any man alive whose opinions thereon would be worth listening to it is the erstwhile professor. As it was, he could only bring his profound analytical capacity to bear upon certain theoretical aspects of the problem of how to build a motor-bicycle, at the same time being the first to admit that his remarks were more academical than otherwise.

FOR the rest, it was equally unfortunate that the only person present who had made trial of almost every type of motor-safety on the market was unable to carry conviction to his hearers, the value of his personal experiences being discounted again and again by the immoderation of his rhetoric. Whatever was undesirable, according to Mr. Pennell's experience, was hopelessly bad, and what was good was the finest thing in the world. He spoke of "millions" when he meant hundreds, and destroyed at almost every point the effectiveness of what, with more sedateness of diction, would have been valid argument. There was special cause for regretting this in connection with his plea for a more powerful motor than the 1½ h.p. to 2 h.p., which, in the majority of cases, is fitted to a motor-safety.

Now herein Mr. Pennell spoke as a tourist of unusually extensive experience, and I, as an old tourist myself, was just as much in favour of his views as I was perturbed by the mode of their expression. Nine-tenths of the people who have produced road vehicles, whether bicycles, motor-cycles, or even cars, until the period of the 1,000-miles Trial, have had but the most rudimentary idea of what touring really involves, and the same may be said even to-day of people whose sole idea of travelling is a Saturday or Sunday run on one type of vehicle or another. Touring conditions are as different from week-end jaunts as chalk from cheese, for in the latter case one may count on a probability of nothing going wrong during a short journey, or of finding a good repairer on the route.

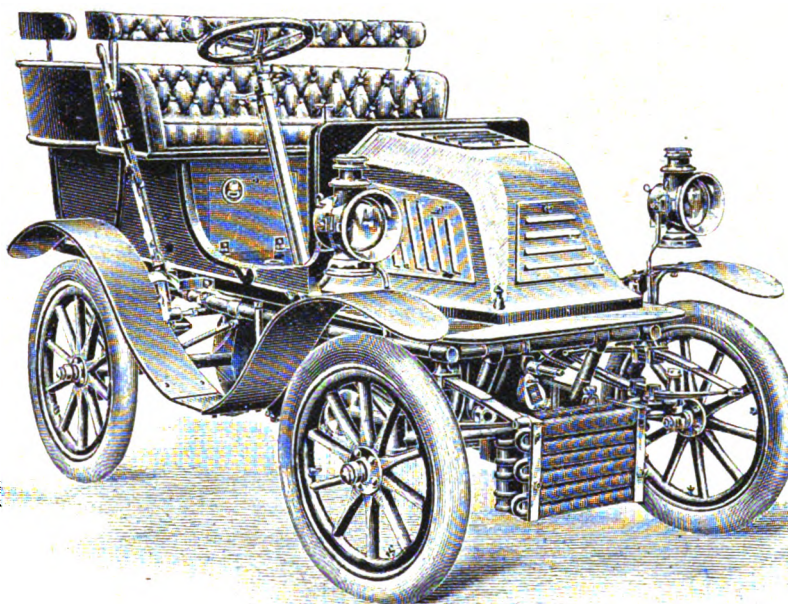
A LONG, genuine touring journey, however, is quite another matter, for the chances are that one may meet with road con-

ditions not only immeasurably more trying as to gradient and surface than anything previously encountered within the radius of a day or two from one's own home, but also one wants to be guaranteed the minimum possibilities of breakdown, lest such may occur at the most inconvenient time. From my own touring experiences by road, extending over ten countries, I can most emphatically endorse the contention that something reliable and powerful alike is imperative when a real tour is embarked upon. As one who has been eastwards by many routes, even as far as Venice, I am bound to say that, where motor-safeties are concerned, I should decline to start on anything less than a 2½-h.p. machine. Its fittings throughout, moreover, would have to be emphatically less flimsy than the average motor-bicycle displays. If one appears insistent in these matters, the manufacturer, at least, has small ground of complaint. The tourist is really paying the highest form of compliment to a machine, whatever it be, when he proposes to put it to the serious purpose of a long journey instead of Saturday flutters on well-known roads.

THE "HORBICK" CAR.

MESSRS. HORSFALL AND BICKHAM, of Pendleton, near

Manchester, have lately introduced the light four-seated car of which a general view is given herewith. The 6 h.p. engine which provides the motive power has been supplied by the Motor Manufacturing Company, but otherwise the makers have mostly fallen back on their own resources. There are three speeds forward and one reverse, the engine, which is located in the fore part of the frame, transmitting its power through a friction-clutch, gear-box, and a universally-jointed shaft to the rear live axle. The *cardan* shaft is made telescopic with the object of obviating undue strain. The change-speed lever is attached to the steering post, on which are also conveniently placed the actuating handles for the



THE "HORBICK" CAR.

sparkling advance, accelerator, and mixture regulator. The car is wheel steered, and there are three band brakes, one on the gear-box shaft, and compensating brakes, acting backwards or forwards, attached to the rear wheels. Michelin tires are fitted to the artillery-type road wheels. The *tonneau* body will seat four, and is upholstered in maroon morocco, the panels being painted royal blue, relieved with a thin red line. The total weight of the car is 10 cwt.

JOHN CHILD MEREDITH, LIMITED, Birmingham, have sent us an illustrated sheet showing a number of specialties they are making for motor-bicycles. Amongst these we notice accumulators, coils, contact breakers, carburettors, sparking plugs, and some special tanks for carrying an extra supply of petrol and lubricating oil. They have also sent us a price list of their motor-cycle parts for the trade, and a sheet of working drawings of parts of bicycle motors of 1½-h.p. and 2-h.p., showing also the arrangement of wiring for the electrical ignition, and a sectional view of the carburettor. This sheet, for which a small charge is made, should be of great use to those small concerns taking up the manufacture of bicycle motors.

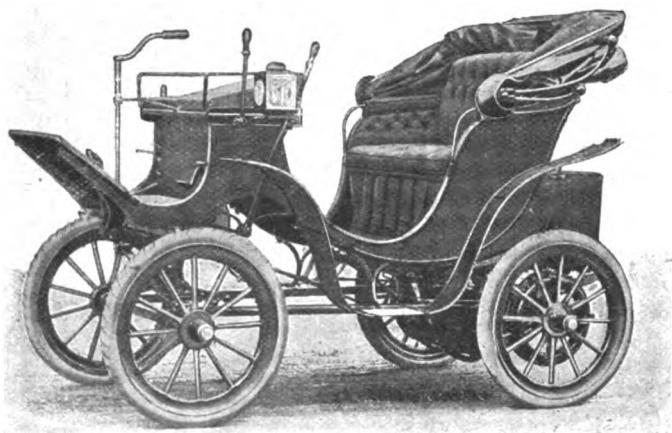
THE "CITY AND SUBURBAN" ELECTRICAL VEHICLES.

THOSE who have not had an opportunity of going over the depôt of the City and Suburban Electric Carriage Company, at Denman Street, Piccadilly Circus, London, W., can have no idea of the extent of the building. We ourselves were astonished at its size when we were taken over the establishment the other day. Not only is there ample accommodation for the storage, cleaning, washing, recharging, etc., of customers' cars, but several floors are used as sale and stock rooms, offices, etc. The variety of vehicles from which a choice can



FIG. 1.—THE "CITY AND SUBURBAN" ELECTRIC SURREY.

be made may be gauged from the fact that we inspected no less than ten different types. Space prevents us from referring to all these at length, and while it may be mentioned that the landaulette appears to be the favourite type in the West-end, we have selected for illustration the Surrey phaeton to seat four (Fig. 1), and the hooded victoria (Fig. 2). The under frame of both vehicles is of tubular construction, with special flexible joints to allow for uneven roads. Supported on this at the rear are two small electric motors, one at each side, pinions on the motor shafts gearing with internally-toothed wheels rigidly attached to the rear road wheels. The battery used as a standard consists of 44 E.P.S. accumulators contained in a receptacle formed



2.—THE "CITY AND SUBURBAN" ELECTRIC VICTORIA.

in the rear portion of the body. The distance that can be covered on one charge of the battery ranges from thirty-five to forty miles, according to the character and condition of the roads traversed. In the Surrey phaeton the controller is adapted to give three forward and three reverse speeds, while that of the victoria is arranged to give three speeds ahead and two backward, the maximum speed in each case being twelve miles per hour. Steering is controlled by a tiller, while the driver has both

foot and hand double-acting brakes under his command. The road wheels are of the artillery type shod with solid rubber tires, the company finding these quite satisfactory, having regard to the ample springs introduced between the carriage body and frame.

For the benefit of London users of their cars who are not equipped with battery charging appliances, the City and Suburban Company have arranged for the storage, cleaning, and recharging of cars, at inclusive monthly, quarterly, or yearly rates. The normal time occupied in recharging the accumulators is 4½ hours, but where a spare battery is kept on hand this can be substituted for the discharged one in about five minutes. We have in a previous issue referred to the many well-known personages, ranging from H.M. the Queen downwards, who are using "City and Suburban" electric carriages.

IMPORTS OF MOTOR-CARS, CYCLES, AND PARTS.

BELOW we publish our monthly official list of the imports of motor-cars, motor-cycles, and the parts thereof into the United Kingdom during the month of January, 1902. Compared with the three preceding months, the total imports as officially recorded were as follows:—

January, 1902	...	...	£37,988
December, 1901	...	...	£25,233.
November, 1901	...	...	£34,574.
October, 1901	...	...	£45,441.

Shipped from	To	Description.	No.	Value.
Antwerp	Harwich	Motor cycles	6	£ 260
"	"	" parts	—	1,626
"	London	" cycles	3	140
"	"	" car	1	108
Brussels	"	" frames	3	168
Ghent	"	" machinery	—	298
Ostend	"	" cars	2	370
"	"	" cycles	2	54
Total Value of Imports from Belgium, January, 1902				£3,024
" " " " December, 1901				£6,859
Bordeaux	London	Motor car	1	200
Boulogne	Folkestone	" cars	32	9,291
"	Goole	" "	2	390
"	London	" "	8	1,333
Dieppe	Newhaven	" "	29	9,906
"	"	" parts	—	1,477
"	"	" tires	—	668
"	"	" cycles	2	60
"	"	" parts	—	48
Havre	Liverpool	" cars	5	1,110
Paris	London	" "	2	320
Rouen	Glasgow	" cycle	1	39
Treport	London	" car	1	280
"	Leith	" "	1	600
Total Value of Imports from France, January, 1902				£25,722
" " " " December, 1901				£10,831
Bremen	London	Motor wagons	6	3,339
Hamburg	Leith	" carriage	1	100
Cologne	London	" car	1	600
Total Value of Imports from Germany, January, 1902				£4,039
" " " " December, 1901				£3,110
Rotterdam	London	Motor cars	8	1,390
Flushing	Queenboro'	" car	1	168
"	"	" parts	—	25
Total Value of Imports from Holland, January, 1902				£1,583
" " " " December, 1901				£354
New York	London	Locomotives	2	300
"	"	" parts	—	233
"	"	Motor cars	12	1,242
"	"	" parts	—	438
"	"	" cycles	6	180
"	Southampton	" cars	4	1,160
"	"	" parts	—	67
Total Value of Imports from United States, January, 1902				£3,620
" " " " December, 1901				£4,709

Mechanical Flight Up-to-Date.

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By SIDNEY H. HOLLANDS.



CHAPTER V.—AERIAL MOTORS.

IT has been remarked—and the remark is a true one within certain limits—that the modified success attendant on the motor-ballooning demonstration in Paris (for the Henri Deutch prize) was “entirely due to the motor-car,” as that “airship” was provided with an engine much lighter for its power than could have been obtained had not automobile engineers been engaged for some years in studying the problem of weight reduc-

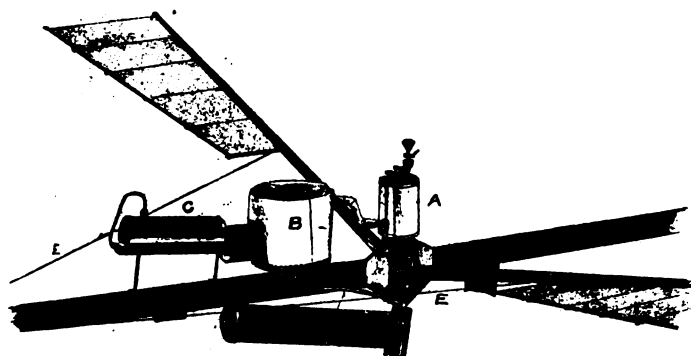


FIG. 1.—HARGRAVE'S STEAM AERIAL MOTOR (1892).
A.—Engine. C.—Spirit Fuel Tank.
B.—Coil-Boiler. D.—Feed Water Tank.
E.—Wing Back-stays.

5 lb. 11 oz. Steam Engine No. 18.
Cylinder, 2 in. diameter. Surface of Wings, 281 sq. in.
Stroke, 2.52 in. Boiler, 21 ft. of copper pipe, .18 in. bore.
Feed Pump Ram, .266 in. diameter.
Piston Valves, .3 in. diameter.

tion. Now, without detracting from the obligation under which would-be aerial navigators certainly lie to our friends the automobile engineers (and the writer is one of that fraternity), it must be said that the degree of success attained was due to the motor-car because M. Santos Dumont elected to use the petrol motor of the

for use in aviation. Moreover, this extremely light steam motor bears favourable comparison with the lightest petrol motor (for a given power) yet produced; in fact, is considerably lighter.

For the very light steam motor, which, by the way, is considerably lighter than the latest and lightest of marine types, our thanks are due to certain workers in the field of aviation exclusively. It is only a measure of justice to the successful labours of the ingenious and persevering producers of the specially light steam motor, as adapted for aviation, to claim due recognition of them. Alluding to light marine types of engines, it would at

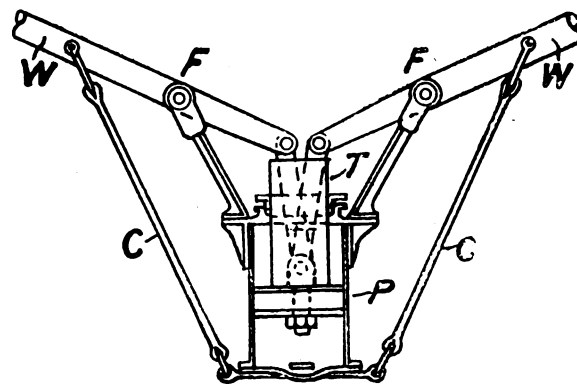


FIG. 2.—HOLLANDS' RECIPROCATING STEAM TRUNK MOTOR (for Winged Aviators),
With semi-annular Piston, P, economising power on return stroke of Wings; F F Fulcrum; W W Wing arms; C C Elastic Pectoral Cords (forming reservoirs of Power for downstroke of Wings); T Trunk.

first sight appear that the comparatively new departure, the marine steam turbine, would be admirably adapted for aerial propulsion. Being so impressed I went to the fountain-head, and communicated with the Hon. Charles A. Parsons, asking him to kindly state his views on that question, and to let me know the

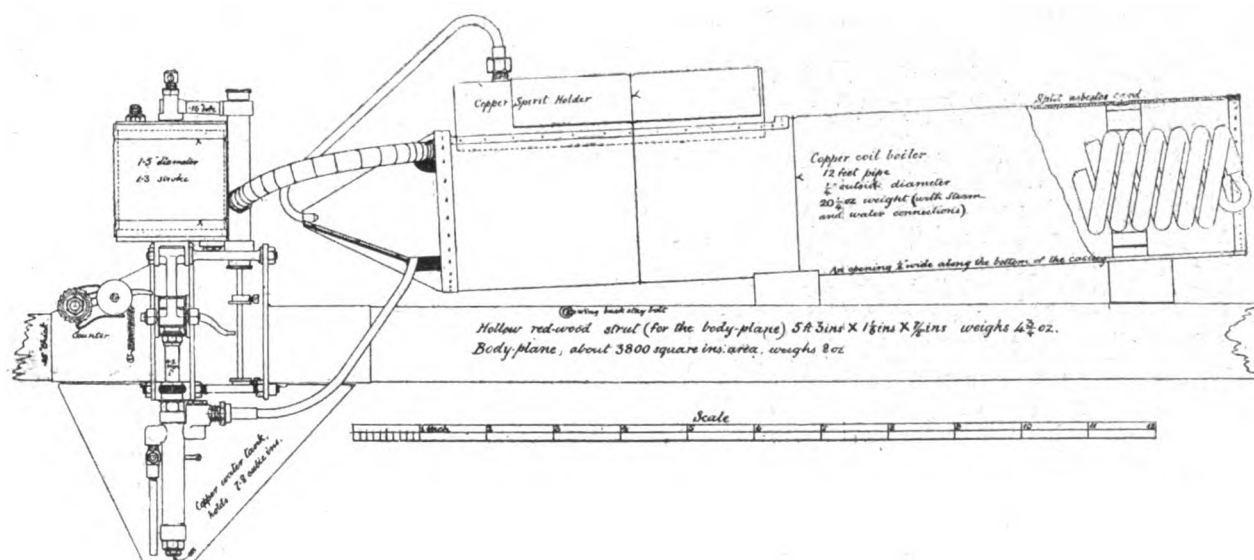


FIG. 3.—HARGRAVE'S STEAM AERIAL MOTOR (1892). Length of Flight, 1,640 yards.

automobile rather than a specially light steam motor. Such a motor as the latter is available—there is even a choice of types—and it has been developed, independently of the motor-car industry, specially for aeronautical purposes, or, more correctly, mainly

lightest steam turbine he could produce for a given power. That gentleman duly responded, but the purport of his reply was surprising and disappointing. It certainly surprised me, for it stated his opinion that the steam turbine is not so well adapted

for aeronautical uses as one would think, and went on to give the minimum weight of it for a given power as *one ton for 100 horse-power*, which works out at 22.4 lbs. per h.p. This certainly will not do for aeronautical uses.

Professor Langley's steam motor, as designed for and applied to his famous "Aërodrome," weighed $4\frac{1}{2}$ lbs. per h.p. (engine and generator)—it developed $1\frac{1}{2}$ h.p. and weighed 7 lbs. That is the "record" light steam motor—a motor that has flown three-quarters of a mile and sustained 22 lbs. besides its own weight. We certainly do not need to break that record of powerful lightness—less than one-fourth the weight of the steam turbine! As showing a course of development, and the great advance made by one experimenter on a previous production of his own, it may be mentioned that Professor Langley's first steam motor weighed no less than 25 lbs. per h.p.—the engine (double oscillating) weighed $3\frac{1}{2}$ lbs., and the boilers (four) collectively $21\frac{1}{4}$ lbs. It developed just 1 h.p. The numerous steam motors designed and made by Mr. Lawrence Hargrave are really admirable productions. Until recently these have all been small—i.e., working models—but nevertheless are very efficient, and fairly indicate what may be effected in large motors of similar types. One of Mr. Hargrave's lightest, simplest, and most efficient motors is of the reciprocating, non-rotative type, specially designed for winged types of aviator, and acting directly on to the wing-arms (see Figs. 1 and 3). It is a curious and noteworthy coincidence that Mr. Hargrave

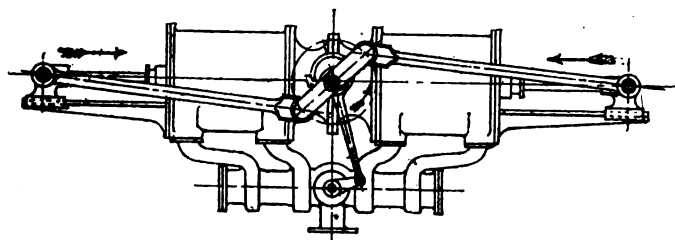


FIG. 4.—HOLLANDS' BALANCED HIGH-SPEED LIGHT STEAM MOTOR (1892).

and myself—living and working in the field of experimental aeronautics (with models) at opposite sides of the world—Mr. Hargrave residing in Australia—quite independently produced model non-rotative motors of striking similarity of design, stored compressed air, too, being used in both cases. The main point of difference was that mine had a trunk piston (see Fig. 2) to economise power on the return or up-stroke of the wings (when less power is needed), which it effectually did. Both Mr. Hargrave and myself have since used steam pressure with these little motors. The weight of these for a given power, using a very light coil type of flashing generator, is less than 6 lbs. per h.p. While on this point, I will, with the reader's indulgence, allude to another type of light steam motor of my own—a rotative engine this time—in designing which a perfect balance was aimed at, both as to momentum of moving parts and of turning effort, without introducing balance weights; lightness, of course, is understood. This was effected—and successfully, as far as a very high-speed working model was concerned—by the means shown in Fig. 4. The arrangement formed a perfect "couple," was remarkably free from vibration, and was extremely light and compact. The weight of an engine of this type (engine alone) is 2 lbs. per h.p.

(To be continued.)

At the Plymouth Institute, Mr. E. H. Micklewood has been lecturing on motor-cars and traction. An interesting discussion followed, in which Major Drummond and the Rev. G. Scholey took part.

THE bronze medal awarded the Imperial Autocar Company, Limited, at the Liverpool Show, was for a 5 h.p. car. The company write to inform us that the observer on their car during the trial was unaware of the place at which the concluding time was taken—a point to be considered when comparing the time of their car with that of the others.

PROGRESS IN THE UNITED STATES.

AMID a crowd of steam-cars I found Mr. W. M. Letts, the other day, at Sussex Place, South Kensington. He was full of enthusiasm for the Locomobile and all its works—I mean its factory—and a pile of photographs had to be glanced through before we settled down to business. These photos he had brought with him from America. They included views of the wonderful factory at Bridgeport, with a capacity for turning out twenty-five cars a day, and actually producing sixty a week—scenes in the southern States, with the Locomobile dodging round almost impassable curves and ascending marvellous gradients, and views calculated to impress the stranger with a great sense of the steam car's adaptability and reliability.

"Now, Mr. Letts," I went on, "you were in America two years ago, I believe, so that your recent visit has given you a chance for comparing the advance of automobilism in at least one city of the States."

"Yes," he said, "I will compare. Two years ago the De Dion and the Winton petrol cars were familiar in the streets of New York. So, too, were electric and steam vehicles. But the former appear to have fallen into the rear, while the more silent vehicles have forged ahead. Standing at a corner of Fifth Avenue one afternoon I counted ten steam carriages and five electrical vehicles for every gasoline car that passed."

"But gasoline cars are not being ignored," I suggested.

"No; in fact, the visit of Fournier has given an impetus to the demand for petrol cars that will last a good time yet. Americans, too, are experimenting, but they have not yet produced anything like a gasoline car that would be really serviceable in a country like England. I must confess I had expected to find more gasoline cars than I actually saw. There were, of course, machines of every make, and Keene, Bostwick, Vanderbilt, and others had splendid vehicles; but, speaking generally, steam and electric automobiles are in common use. The hotels in New York have such cars for ordinary work. One incident occurred during my stay that gives some idea of the progress that has been made in America. While I was there a great dynamite explosion occurred, in which six people were killed and many scores injured. Within a few minutes of the sad event four electrical ambulances had arrived. I saw them perform their work with an expedition and ease that was lacking in the case of the horse-drawn vehicles."

"Then, I suppose, garages are plentiful in New York?"

"Plentiful and extensive. The storage departments are a feature of the city—to automobilists. There you can find every type of vehicle stored during bad seasons. Of course, in America there is not the home life that is found in England, and consequently many owners of motor-vehicles send their cars to the storage department, where they are cleaned, kept in repair, and generally looked after—a development that is hardly ever likely to attain such gigantic dimensions in this country, owing to the facilities for keeping cars that are provided near every country, and a good many town, houses."

"Is the presence of so many practically silent vehicles in the streets of New York regarded as a source of danger," was a question that naturally occurred in view of recent Press strictures on noiseless vehicles.

"A lot of nonsense is talked about noise and silence with regard to automobilism," said Mr. Letts. "Look here"—and he produced a newspaper cutting with which he apparently maintains a high state of feeling—"here is a man declaring in a London paper only last week that had noiseless steam and electric vehicles preceded petrol cars in England the Day of Emancipation would still be afar off. He actually argues in favour of noisy cars, and yet every maker of petrol cars is trying all he knows, and much that he doesn't know, to reduce the noisy clatter that prejudiced people against automobilism a few years ago. Society folks are favourable to electric and steam vehicles because of their silent running, and to praise noisy cars to the detriment of noiseless ones is absurd."

Tacking about, for the subject is evidently a burning one with the London manager of the Locomobile Company, I asked if he believed the steam car was adaptable to every purpose.

"Let me tell you of some of the applications in which it has succeeded. We have delivery vans running about New York, Locomobile cars for fire brigade purposes, and in some American cities the postal collections from pillar-boxes are made by a special type of car, with a large box at the rear—effecting a saving of time and economy in expense. While I was in New York an Englishman, Mr. Giles, of San Juan, Cuba, came into the office there and ordered twelve cars, each of which was required to run sixty-eight miles per day. In one place a river had to be forded, and in another a hill eight miles in length had to be traversed. These cars were to carry the mails and four passengers in addition to the driver. The company will also shortly bring out an opera 'bus, and other types of vehicles for different purposes. It is not only in designing new types, but also in additional improvements to the existing cars, that our company is maintaining a position in America. For instance, I brought back with me a new steam air-pump, and also a water pump, which are being fitted to our cars in the States. By fitting one of these pumps, it is possible to simply turn on the steam cock and have the air pumped up to 80lbs. inside of a couple of minutes—thus doing away with the necessity of pumping by hand."

A brief study of these pumps concluded my chat with Mr. Letts. Herewith are illustrations of the air pump, Fig. 1 showing the connections, Fig. 2 a section of the steam cylinder and air pump which it drives, and Fig. 3 a section of the valves at right angles to Fig. 3. The air pump can be used for inflating the tires as well as pumping up the air tank. It has a weight of $4\frac{1}{2}$ lbs., the steam and air pistons are $1\frac{1}{2}$ inches diameter by 2-inch stroke, and the space occupied when placed in the carriage is only 9 inches long by 8 inches in diameter. The piston valves 665 and 673 (Figs. 2 and 3), control the live steam entering the cylinder, and the space surrounding the stem of plunger 665, is always filled with live steam. The cross section of the upper piston is larger than that of the lower one, and consequently the plunger is forced in the direction of the upper head and valve 673, the stem of which, resting upon the upper piston of 665, is also raised by the motion of plunger 665. The lower end of the steam cylinder is then in communication with the atmosphere through the lower part, the steam exhausting from it. At the same time live steam enters

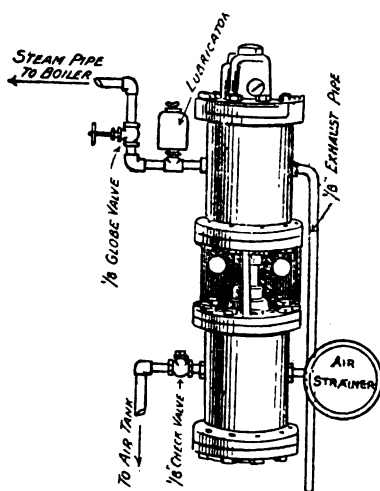


FIG. 1.

the clearance space on the opposite side of the piston through the steam port on the end of the cylinder controlled by the upper head of piston valve 665. The piston 648 is thus forced downward, and communication between the two lower parts controlled by the slide valve 658 ceases. Then, when the valve is at its

lowest position, live steam enters valve 673, and as the area of the latter is larger than that of valve 665, all the control valves are forced downward until the plunger strikes the bottom. The clearance space below piston 648 then communicates with the live steam chamber, and the motion of the piston is reversed.

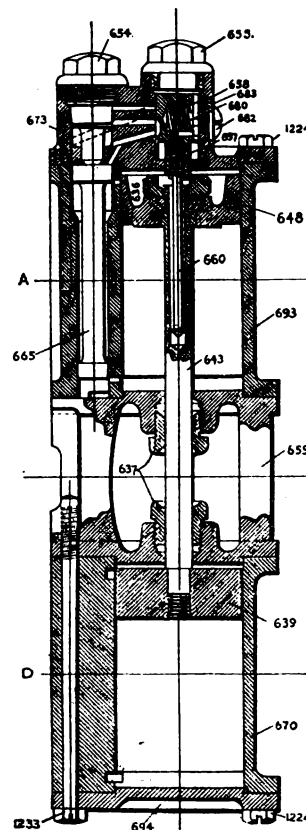


FIG. 2.

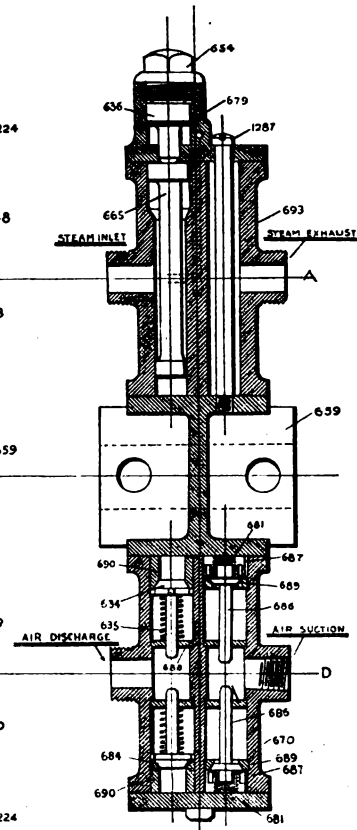


FIG. 3.

When nut 636 strikes and raises valve 658 the steam is cut off from the space above 673, and the plunger is raised again. After the steam has done its work it rushes out to the atmosphere in the same way as it does in ordinary steam-engines. The air pump is also double acting, and has poppet valves, but no piston rings. There are two sets of identical valves—one for each end of the cylinder. On the suction stroke the inwardly opening valve admits air to its end of the cylinder, and as soon as the compression stroke begins this valve closes. When the compression in the cylinder slightly exceeds the tank pressure, the delivery valve opens, and the air flows past it and the check valve in the piping, into the air pressure tanks. LOLLIS.

SIR THOMAS LIPTON has lately shown an interest in automobilism.

SKIDDING on the tram-line at South Croydon last week, a motor-car was overturned, and the passengers, Messrs. H. H. Spalding and G. Morrison, were much shaken.

"NOTES on the Management of the Gardner-Serpollet Steam Motor-car" have been written by Mr. G. H. Olliver, and published by Iliffe and Sons, Ltd., for the benefit of those commencing to drive this particular type of car. A careful study of the hints contained in these twenty-four pages will enable the novice to avoid many difficulties, and although it will not enable him to entirely dispense with the services of an instructor, it should save him from breakdowns. At the end of the little book is a chapter of questions suggestive of the varied knowledge required to successfully operate the Gardner-Serpollet steam car. Boiler, pumps, motor, relief valve, brakes, lubrication, the fire and the water are all lucidly considered.

HERE AND THERE.

THE Marquis of Anglesey has purchased a Locomobile.

THE Brighton Motor and Cycle Club held its third annual ball last week.

CROWDS assemble nightly outside the Imperial Theatre to witness Mrs. Langtry's arrival and departure on her new automobile.

MESSRS. BREWER AND SON, of 33, Chancery Lane, W.C., have issued a useful manual on "Property in Trade Marks." The book is intended to give users and the prospective users of trade marks a practical knowledge of the law on the subject.

THERE has been a marked improvement of late in the roads of North Wales, and we are informed that from Chester to Bettws-y-Coed, or to Barmouth, there is scarcely a bad patch to be found.

THE Yorkshire Motor Company have opened premises in Delph Street, King's Cross Lane, Halifax, under the management of Mr. J. W. Brown, late works manager of the Yorkshire Motor-Car Manufacturing Company, Limited.

REALLY the editor of the *Express* ought to read his *Motor-Car Journal* before making statements about American motor-vehicles; for he has just declared the "Tractobile" to be capable of converting an ordinary vehicle into an "up-to-date automobile."

A CORRESPONDENT writes asking for information as to the size of water tank necessary to use for the cooling of a 3½-h.p. De Dion motor. He also asks whether he should use a radiating coil, provided he employed a three to four gallon tank.

OWING to the increase of business the Collier Twin Tyre Company, Limited, are shortly removing to more convenient and extensive premises at King Edward's Mansions, Shaftesbury Avenue, W.C.

COPIES of the Judges' Report on the 1901 Liverpool trials can still be obtained from the Liverpool Self-Propelled Traffic Association at 10s. 6d. per copy, post free. The price will probably be advanced to a sovereign at no distant date.

COMMENTING on the healthy effects of motoring a doctor writes, "May I suggest to those in charge of sanatoria the advisability of combining a daily run on a good motor-car at a pace fully up to the legal limit with the ordinary open-air treatment."

THE next quarterly 100-mile trial of the Automobile Club will be held on the 25th inst., the route being *via* Uxbridge, Beaconsfield, and High Wycombe to the fifty-second milestone from London, and back again without stopping. Entries should be made before the 22nd inst.

MAYFAIR GARAGES, LIMITED, has been registered with a capital of £7. Object, to carry on the businesses of or connected with storage of motor-cars, as repairers, instructors, hirers, manufacturers of, and dealers in, component parts, and petroleum spirit, and lubricating oils.

THE Automobile Club will have a run to Bexhill on Saturday. Some of the members will start from the Club-house at noon, but there is no recognised programme either as to the

start or the route to be taken. The Sackville Hotel will be the headquarters of the Club in connection with the trip.

THE Manchester Motor Transport Company, Limited, has been registered with a capital of £20,000 to adopt two agreements and to carry on business as carriers, carters, railway and forwarding agents, collectors, agricultural produce dealers and merchants. The registered office is at 10, Deansgate, Manchester.

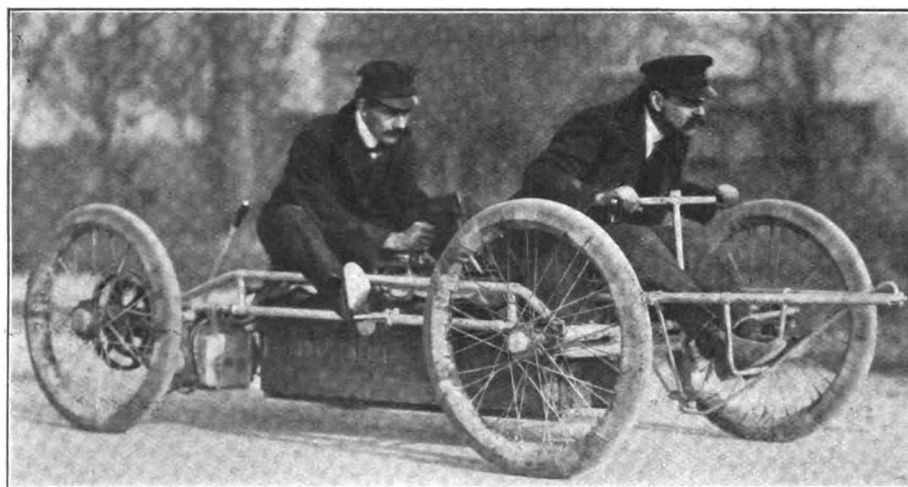
A CORRESPONDENT suggests that the reason the police prefer to prosecute under the old "furious driving" Act and not under the Act specially dealing with motor-vehicles, is that under the former the fine goes to the police, while under the later Act it goes to the county funds. The *Daily News* asks whether this explanation is not too cynical?

THE legislators of New York are still considering the bill aimed at the liberties of automobilists, and much amusement has been caused by the presence of several toy motor-cars in the Senate House. These have been sent on their wild careers by enthusiastic motorists determined to defend the larger kinds against the suggested restrictions.

THE Primus Motor Works, of Rathgar Road, Loughborough Junction, S.E., have just brought out a new 1½-h.p. bicycle motor. The engine is neatly made, and comprises a cast cylinder with copper radiators. The oil tank case is of aluminium.

Special attention has been paid to the question both of the bearings and of the lubrication.

IN our issue of August 3 last we briefly described the novel electric racing machine built by Mr. A. H. Riker, of the Riker Motor Vehicle Company, Elizabethsport, U.S.A. We are now able to give an illustration of the machine as it appeared in the recent Long Island Automobile Club's speed trials, when it covered a mile in 63 sec., or at the rate of over 57 miles per hour.



THE RIKER ELECTRICAL RACING CAR.

[The Horseless Age.]

A NEW bicycle motor, to which the name "Unique" has been given, has lately been put on the market by the Midland Motor Company, of Ladywood Road, Birmingham. The engine, which develops 1½ h.p., has large cooling ribs cast around the valve chambers as well as the cylinders. A positive form of contact breaker is used on the motor, the trembler being fitted on the induction coil.

SOME time ago the *Bristol Times and Mirror* reported the case of a motor-car accident which had subsequently to be explained as less serious than originally reported. Our attention has been called to another instance of similar exaggeration by the same journal, and a Bristol automobilist feelingly suggests that newspapers should be more careful in mirroring the occurrences of the day.

BEWARE OF RAILWAY CROSSINGS.—At Colomars, near Nice, on the Chemin de Fer du Sud, Mdle. Schiff, with several friends, was returning from an excursion in her motor-car when she came to the railway track. The gates were open, and she attempted to cross. Just at that moment a train dashed round the curve, and the locomotive struck the front of the motor-car, throwing the occupants out on the line. By a miracle no one was fatally hurt, but the occurrence was not pleasing. Had the train gone off the metals it would have been heralded as "another accident caused by the motor-car."

CORRESPONDENCE.

MAINTENANCE OF MOTOR-CARS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I noticed in a recent issue a letter from a correspondent on the cost of maintenance of motor-cars, in which he stated that £50 a year was a liberal allowance for a man. I wonder what sort of a man he wants?—Yours truly,
H. J. D.

GARDNER-SERPOLLET CARS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—In answer to your correspondent "Rusticus" I have had five years' experience of Gardner-Serpollet cars, which are all fitted with a condenser and oil separator by which the exhaust steam can be used over again, and which I have found to give every satisfaction. These cars are now built to run 100 miles on twenty gallons of water (perhaps a little more). I have found no difficulty as regards kind of water used. As a hill-climber this particular car has no equal that I have seen.

I hope soon to be in possession of a steam car of 50 h.p., on which I intend to make the run from London to York without a stop.—Yours faithfully,
F. H. HUNT.

MOTORING AND HEALTH.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—In your issue of last Saturday you refer to the beneficial effects of motoring on health. To this I can most cordially and gratefully bear testimony. About eight months ago I was taken ill, suffering from an acute local affection which rendered horse riding and even walking impossible. The doctor recommended outdoor air as indispensable to my recovery. Having a strong car, with hood—a most valuable adjunct in winter—and good engineer and driver, I resolved upon using them when the weather permitted and I was able to move, or rather, which was often the case, to be moved, the result being that my general health was well maintained, even during the winter, well wrapped as I was in furs, etc. Gradually the local mischief is being effectively exorcised, and it is felt that all this is mainly attributable to the open, airy, and pleasant spins I was able to enjoy. I may mention that during the time the car, a 10-h.p. Rochet-Schneider, has travelled between 3,000 and 4,000 miles or more with scarcely any hitch or mishap, not even any tire troubles.—Yours faithfully,
H. OWEN.

THE STIRLING CARS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—In answer to the inquiry of J. T. in your issue of the 15th ult., regarding the hill-climbing abilities of the above cars, I can give him, briefly, the experience of a friend and myself on a Stirling Parisian phaeton. In September of last year we made a journey from Glasgow through the Lake district, the Potteries, the region of the Peak, and the district around Harrogate, returning by Edinburgh. The car was able to climb the hills with ease, notwithstanding the exceptionally hilly nature of the country through which we passed. In the Potteries, where, in addition to the hills, or "banks" as they are locally named, the roads were bad, the car did splendidly; the brake power was ample. The journey extended to over 1,200 miles, and the only hitch (one of short duration) was due to our ignorance of electrical ignition, being unable to recognise a faulty connection.—Yours truly,
ALEX. ROBB, M.B.

AN INTERESTING EXPERIMENT.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Referring to the very interesting experiments being carried out by an American railroad company, mentioned in your issue of February 8th, I hope to very shortly run a Napier car 200 miles a day for some considerable time, and I should be most pleased to carry out the suggestion mooted in your paper if you think it of sufficient public interest to appoint somebody to do the necessary certifying as to weight, etc. The trial will consist of a run of 200 miles per day for a month or two on a 9-h.p. Napier. I should very much like to see one or two other manufacturers enter for this test.—Yours truly,
S. F. EDGE.

TIRES FOR IRISH ROADS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—In your issue of the 8th Feb. I notice a letter from a Dublin motorist, who drives a 6½-h.p. Daimler, and complains that after a thousand miles the 2½-in. solid tires with which the wheels are shod are practically cut to pieces. I, too, drive a Daimler car, but mine gives 9½ h.p. on the brake, and weighs about 23 cwt. I have Michelin pneumatic tires on the front wheels. They have run over 2,500 miles, and are still in excellent condition. The back tires were in bad condition after about 2,000 miles, and I had new treads put on. Meanwhile, I fitted 2½-in. solid Buffer tires, made by the Sirdar Tyre Company, as I thought they would stand better during the winter. These have up to date run over a thousand miles, and are still in excellent order. They show hardly any signs of cutting, due, I fancy, to the quality of the rubber, and to the fact that it is under

compression. I might mention that the pneumatic tires on the front wheels were repaired after they had run about 2,000 miles. They have traversed a distance of nearly 2,000 miles without meeting with a puncture. From my experience, I am inclined to think that the soft metal with which Irish roads are repaired is not as injurious as the English flints.—Yours faithfully,
R. J. MCCREDDY.

HORSE v. MOTOR.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I should be glad to learn from your readers the respective merits of horse and trap *versus* motor-car, from the point of view of convenience and also expense, the latter to be exclusive of first cost. Can anyone give me the cost of a motor-car to go to and from the station (two miles each way) twice daily, and occasional drives with four passengers? The above information will be of service.—Yours faithfully,
MOBILE.

CORRECT HORSE-POWER.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Will someone be good enough to tell me definitely what brake horse-power is given off from the M.M.C.'s De Dion engine? It is 100 mm. bore and 130 mm. stroke, and is stated by the Hozier Engineering Company, Limited, to give 8 brake horse-power at 1,500 revolutions. The makers, however, term it their 5 or 5½ h.p. A correspondent to your journal recently, in describing his journey home from London on his new M.M.C. voiturette, calls it a 6 h.p. I am expecting delivery of my M.M.C. voiturette any time now, but am waiting for better weather, and should like to know definitely what horse-power to call the engine. Surely the makers would not call it 5½ if it is capable of developing 8 h.p.?—Yours truly,
UNCERTAIN HORSE-POWER.

MOTOR-BICYCLES FOR 1902.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—You have already inserted in your journal one or two letters I wrote on motor-bicycles. I look upon these machines as about the most valuable of all automobiles. I have purchased two of them, but have only found them perfect torments, as I could neither make them go nor discover anyone who had the skill to make them work. I have read many letters in your paper by riders of motor-bicycles, who have extolled their machines, but I am impelled to the conclusion that such letters must be dictated by mistaken enthusiasts. I can see no motor-bike about that looks to me more promising than those I have been glad to get rid of, and I desire to solicit some impartial rider of a motor-bicycle, who may have met with a satisfactory machine, to be so good as to apprise your readers where they may meet with one of the same merit. I will only add that I cannot believe that a machine can be of much service to a tourist on a motor-bicycle which is over a gross weight of 60 lbs., and which will not travel at least fifty miles on average roads at twelve miles per hour without coming to an involuntary stop.—Yours truly,
J. A.

FRANCE COPYING ENGLAND.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—In reference to the letter of your correspondent who is trying to prove that the Napier car was not original in a number of various points, I do not propose to correspond any further until some documentary proof is produced by him. He merely reiterates in a different form his original statements, but I am sorry I cannot accept these unconfirmed.

My claims for the Napier are simple and clear. First, that Napier was the first modern constructor to use aluminium water-jackets. Second, the first to use straight valve stems on modern automobile vertical engines. Third, with this same type of engine to boldly say that electric ignition only would be fitted. Fourth, on the same type of engine to use enclosed valve gear and cam shafts. Fifth, that the nominal 50-h.p. Napier engine was the lightest engine of this type to be produced, for its actual h.p.

When your correspondent has documents to disprove these statements I shall be pleased to meet him. Until then I prefer not to correspond any further, as it is waste of time, and must become wearying to your readers.—Yours truly,
S. F. EDGE.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—As an Englishman and one who has tried to support the English industry by purchasing English cars—and I am glad to say with fair satisfaction, certainly with equal satisfaction to friends of mine who have French cars—it seems rather strange to me that the gentleman who writes "Continental Notes" in your paper should continually try and throw discredit on English manufacturers. Why should he imagine, because he is a foreigner, or lives abroad, that English manufacturers are not awake? When one has tried the latest 20 h.p. Wolseley or 16 h.p. Napier, I would like "Automan" to say what French car is superior; and in what way? By all means do not let us shut our eyes to foreign perfection, but at the same time give the struggling English industry a chance.—Yours sincerely,
H. A. HECTOR.

"A Reader's" question with reference to the Century tandem has brought commendatory letters from Mr. C. A. P. Truman, Mr. Arthur Brown, and E. F. S.; the latter mentioning the fact that he has covered about 1,000 miles in Kent, Surrey, and Sussex, without finding a hill on any main road that it was unable to mount.

MOTOR-BICYCLE RACES.

THE first race meeting confined to motor-bicycles was held by the Motor Cycling Club at the Crystal Palace on Saturday last. There were six events on the programme, but only five were carried through. The first was a five miles open scratch race on the track for machines having motors catalogued as 1½ h.p. or over. Fifteen entries were received, so that it was somewhat disappointing that only half a dozen competitors came up to the scratch. The race was divided into two heats, the riders in the first one being E. Dries and T. B. Lindre on 1½-h.p. Derby belt-driven machines, and W. J. Westfield on a 1½-h.p. Westfield motor-bicycle. Some amusement was caused at the start by the refusal of the pistol, in the hands of Mr. W. Phillips, to do its work, the competitors being eventually got away by a verbal start. Dries proved an easy winner, his time being 10 min. 36 sec. In the second heat the competitors were T. H. Tessier on a 1½-h.p. 1901 Werner, A. Rivett on a 1½-h.p. Blizzard (Minerva), and Bert Yates on a 1½-h.p. chain-driven Humber. This was the fastest race of the series, Tessier finishing the five miles in 9 min. 18 sec. The final was a very exciting race. Dries, on the Derby, got away first, but Tessier on the Werner soon obtained the lead, which he maintained to the end, the time for the five miles being 9 min. 29½ sec. The five miles open scratch race for motor-bicycles, fitted with engines of more than 1½-h.p. and less than 2-h.p., brought out only four competitors—H. W. Stones on a 1½-h.p. Rex, L. S. Watson on a 1½-h.p. Chapelle, E. T. Arnott on a 1½-h.p. chain-driven Princeps, and J. H. Dickinson on a 1½-h.p. chain-driven J.D. Only one rider, Stones, on the 1½-h.p. Rex, finished, his time being 9 min. 40½ sec. In the race for machines of over 2-h.p. there were only two competitors—H. Martin on a 2½-h.p. Excelsior, easily beating A. Westlake on a 3-h.p. Chapelle, the rear tire of which, however, was punctured.

Following the track races came a speed and hill-climbing contest in the grounds. In Class I., for 1½-h.p. bicycles, A. Rivett won on a Blizzard; time, 2 min. 5½ sec. In Class II., for motors between 1½ and 2-h.p., E. T. Arnott, on a 1½-h.p. Princeps, made the best time, 2 min. 13½ sec. In the class for engines over 2-h.p., H. Martin, on a 2½-h.p. Excelsior, covered the course in 2 min. 6½ sec. It should be added that pedalling was allowed in both the track races and the hill-climbing competitions.

FURIOUS DRIVING CASES.

DR. WILLIAM WILSON was summoned at Burnley for driving his motor-car at a furious rate. His defence was that he was hurrying to an urgent case. He was fined 10s. and costs.

THE Dover County Magistrates have fined a young man named Herbert Burton £8 for furiously driving a motor-car to the danger of the public on the Canterbury Road. According to the evidence of the police-constable the defendant was driving the car at a pace which averaged 1,144 yards in 75 seconds. It also transpired that defendant had been fined £10 at Hythe for a similar offence only a few days ago.

WILLIAM EDWARD BATT, thirty-four, Wellington Square, Oxford, was summoned by the police before the Abingdon County Bench for furiously driving a motor-car in the parish of Sunningwell on February 8th. The defendant pleaded "not guilty." Police Constable Ponsford, stationed at South Hinksey, said he saw defendant driving a motor-car on the Oxford Road, near Bagley Wood, at the rate of thirty miles an hour. He called on defendant to stop, but he took no notice. John Stanton deposed to seeing the defendant on the same date, and he was travelling at twenty miles an hour. Henry Goodenough, who was also on the road, said when he saw defendant he was travelling at from twenty-eight to thirty miles an hour. The Bench considered the case proved, and the defendant was fined £5 and 16s. costs.

AN ENGLISH OR IRISH CONTRACT.

In the King's Bench Division (Dublin) Mr. Justice Barton and Mr. Justice Wright delivered judgment in the case of Lane-Joynt v. Hutton and Company, Northallerton, which was a motion by defendants to have an order made on plaintiff's application discharged. The action arose out of the sale of a voiturette for £170. On a previous occasion the Court had made an order giving liberty to serve a writ out of jurisdiction. Defendants now moved to set aside that order.

Mr. Justice Barton said the question in the case was whether the contract was made in England or Ireland. There were two ways in which the plaintiff might allege that the contract was entered into in Ireland. It might possibly appear that the contract had been entered into between plaintiff and defendant through Mrs. M'Taggart, acting as agent for the defendant, or in the alternative that, in the course of the long correspondence, acceptances had been posted in Dublin either by Mr. Joynt or Mr. M'Taggart acting as agent for him. It had originally seemed to him that so much was to be said on both sides that he thought the best thing to be done was to make the order that plaintiff asked, at his risk, with liberty to the defendants to move to discharge the order if so advised. The defendants had now come in asking to have the order discharged, and he (his Lordship) had come to the conclusion that the order should be discharged, as on the correspondence it would appear that the contract was made in England. Mr. Justice Wright concurred.

THE DETENTION OF MR. H. J. LAWSON'S MOTOR-CAR.

THE Under Sheriff of Middlesex (Mr. Freke D. Williams) sat with a jury in the Sheriff's Court of Ealing to assess damages in the matter of Lawson v. Dengill and Co., Limited. The Sheriff said the jury would have to assess damages in regard to the value of a motor-car and damages for detention. The defendants had had notice of the injunction, but were not present or represented. Mr. Goodman, for the plaintiff, Mr. Harry John Lawson, said he lent to the defendants, who were anxious to increase their capital, a motor-car of the description which they (the defendants) wished to build to show to intending subscribers. The plaintiff lent the car free and expected its return in about a week, but instead they had not returned it up to that day, although it was six months ago since it was lent. Repeated application had been made for its return, but no reply was received. Subsequently the writ was issued. What they (the jury) had to do was to assess damages for the detention of the car for six months, and also its value. Evidence having been given, the Under Sheriff summed up, and the jury retired, and on returning, the foreman stated that they assessed the value of the car at £400, and the damages for detention at £100.

EMITTING STEAM.

FRANK BROAD, of Merrow, was summoned at Guildford for driving a locomotive upon the highway at Stoke, at a greater rate than four miles an hour, on January 22nd. Mr. Gould appeared to prosecute on behalf of the police, and Mr. Staplee Firth defended. Defendant pleaded "not guilty." Mr. Firth contended that the summons was issued under an Act which was repealed in 1896. Mr. Gould said that, according to the Light Locomotive Act, under which motor-cars might go at a faster speed than four miles an hour, no steam or visible vapour must be emitted except from a temporary or accidental cause. After the police evidence had been heard Mr. Firth said he really had no case to meet. The construction of the car—of which there were about 600 in England—was such that no steam need be emitted. There were eight previous similar cases against the same kind of car, all of which had been dismissed. Wm. M. Letts, the manager in England for the Locomobile Company, said he was thoroughly familiar with the construction of the car in question, which was a small one, weighing about a quarter of a ton, and it was certainly constructed so as not to emit steam. Petrol was burnt, and that was without smell or vapour. There were three things on the car to prevent any such emission of steam, and he could demonstrate that at any time. He would be pleased to take the car from Guildford to London without showing any steam. By Mr. Gould: He could not swear that everyone of his company's cars had a condenser, but the one in question had. Robert Buttemer, of Shackleford, near Godalming, said he had gone in for motoring as a hobby, and was an amateur engineer. He had a similar car to that of the defendant. He corroborated the evidence of the last witness as to the construction of the car. By Mr. Gould: The car in question could not have emitted steam to the extent that constables had deposed unless it had met with a mishap. The Bench dismissed the case.

MESSRS. SALSBURY AND SON, LIMITED, has been registered with a capital of £22,500 in £1 shares (2,500 preference), to acquire the business carried on at Green Str. et, Blackfriars, S.E., and 124, Long Acre, W.C., as Salsbury and Son. There will be no initial public issue.

CITY GARAGES, LIMITED, is the title of a company registered with a capital of £7 in £1 shares, to carry on the business of motor-car storers, repairers, instructors, hirers, manufacturers, merchants, auctioneers, agents and dealers, etc. There will be no initial public issue. The registered office is at 19, Princes Street, Westminster, S.W.

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